Moderating Role of ESG in determining the overall performance of UAE based Fintech Companies

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ABSTRACT

The purpose of this study is to investigate the factors that influence the financial and operational performance of manufacturing enterprises in the United Arab Emirates after they have integrated their supply chains. Over the last 21 years, developments such as blockchain and crowdsourcing have transformed financial technology (fintech) from a nascent subject to one that is widely accepted. Many view this technology as disruptive, bringing about swift changes in the corporate world. This article looked into an underappreciated component of this rapidly evolving technology: the influence of environmental, social, and governance (ESG) considerations and sustainability concerns within UAE fintech companies. To collect primary data, the study conducted a survey, sending questionnaires to UAE fintech industry professionals. To maintain methodological rigor, the study employed partial least squares structural equation modelling (PLS-SEM) with a large sample size. According to studies, implementing sustainable practices enhances the positive impact of ESG factors on fintech performance. Those in positions of authority and industry knowledge should emphasize the importance of responsible development so that sustainability is a standard aspect of fintech activity. This study highlights the importance of ESG integration and lays the groundwork for future research on this topic, thereby expanding our understanding of fintech. This article emphasizes the importance of sustainable practices in increasing financial performance and analyses how they influence fintech operations

Keywords: Fintech, ESG, PLS-SEM, Moderation, Financial performance.

1. Introduction

Every corporation's primary goal is to increase the wealth of its owners, most of whom are shareholders. Financial technology, or fintech, has evolved from infancy to popular use during the past 21 years because to initiatives including blockchain and crowdfunding. Scholars and managers in the financial industry face a great difficulty from this neglected phenomenon, which drives many research to clarify it. Research on literary analysis and visualisation to find fresh fintech routes and opportunities is lacking now. Thanks to technological advancement, the social and political scene is

changing everywhere. Major change during the past couple decades has come from the growing reliance on technology in the financial services sector. The spectrum and effectiveness of financial services have expanded as technology helps to increase access to underprivileged areas. Technology has so made financial services more available to the underbanked and unbanked, hence increasing their use.

Although digital banking is somewhat common, a small fraction of companies take mobile payments because of marketability and legal issues. Both developing countries using decentralised currencies like cash and rich countries with robust financial systems are seeing increasing demand for easily available and fast mobile payment options. Modern financial services stand out for their "portmanteau of financial technologies" often referred to as FinTech. Rising from an earlier invention process meant to boost current consumer and trade financial institutions, digital currencies including bitcoin and altcoins emerged. At last, this approach developed into a whole, completely integrated ecosystem [1].The phrase "cryptocurrency" has various unfavourable implications right now. While this is true for the banking sector overall, FinTech covers more ground. Through agile approaches and improved client focus, financial technology businesses have "disrupted the marketing of banking products by meeting customer expectations," hence accelerating their innovation pace. This is the "new normal" these companies have brought into the banking sector.

Retail banks have to provide financial benefits top priority by maximising client relationships in line with banking regulations. Given the severe competition banks face from third parties enabled by FinTech, who entice a sizable portion of their past customers, such a purpose is easier to describe than it would be in the post-FinTech age. Key to the feasibility of this trend are the natural characteristics of Fintech’s innovation-driven, less regulated start-ups that continuously seek new clients, including those typically handled by banks and their relentless goal for growth. Environmental, social, and governance (ESG) concerns have become more important as company leaders come to see the connection between ethical behaviour and financial performance. More ethical and environmentally conscious corporate practices are much sought for worldwide, and this fits this aim [2, 3]. Many wonder whether these companies might keep their sustainability aims while also reaching profitability as financial technology (fintech) influences the business [4]. By including ESG ideas into its main business activities and using technology to propel social and environmental progress, sustainable fintech hopes to close this difference. Industry players and legislators have to grasp the ESG-fintech junction given the fast change of financial institutions by fintech and the need of sustainable practices for long-term performance.

In banking, financial technology (FinTech) which comprises smartphones, blockchains, the Internet of Things (IoT), and artificial intelligence (AI) is becoming ever more significant. While both Dwivedi, Alabdooli [5] point out that it influences financial institutions' operations and raises their efficiency, by means of transparency, security, and affordability inside the financial system, FinTech services can assist to generate a stable, varied, and attractive financial environment [6]. Using this technology benefits environmental infrastructure development, the use of renewable energy sources, and funding of energy and environmental projects, thereby producing significant social,

environmental, and ecological benefits [7].

Fintech is a byword for environmentally friendly finance. Although separate treatment has lengthy history, there are notable parallels that, taken together, indicate enormous potential and make both issues vital components of the current EU policy agenda [8]. By funding ecologically friendly projects [5], FinTech can assist to reach the friendly Development Goals (SDGs) of the 2030 Agenda. Understanding FinTech as a key player in reaching these objectives, the United Nations (UN) Secretary General (2018) created the Task Force on Digital Financing to look at policies creating financial technology to advance the Sustainable Development Goals (SDG). This perspective holds that by aggregating non-financial data and information pertinent to the incorporation of ESG (environmental, social, and governance) factors into investment analysis and decision-making, financial technology (FinTech) helps institutional investors such as banks, insurance companies, pension funds, and investment firms mobilise private savings for green initiatives.

This paper focusses on the United Arab Emirates, where the expansion of fintech presents an opportunity to evaluate how sustainable practices may be included into a profitable sector. The study answers the following questions: Can we deduce anything regarding the correlation between the financial performance of UAE fintech startups and their sustainability? Lack of research in the Middle East results from ESG-driven tactics' global spread [5]. Rising consumer and investor demand in the UAE is driving fintech startups to introduce environmentally friendly financial solutions. Still, there is a lot of knowledge lacking on how ESG affects performance and creativity in a fintech company. By assessing the UAE's particular legislative and financial setting as well as the interaction of fintech and ESG features inside it, this paper seeks to close the gap. Two overlapping factors inspire this research: fintech's revolutionary influence on the financial sector and the increasing relevance of sustainable business practices all around. Though much research has been done on environmental, social, and governance (ESG) issues in traditional banks, less is known about how these elements influence fintech operations, especially in emerging nations like the UAE [9]. It is debatable how sustainable fintech will affect the relationship between ESG and fintech.

Major economic force in the Middle East and Africa, the United Arab Emirates comprises Abu Dhabi and Dubai among its key cities. The UAE's fast expansion is shown by its established economy and the fact that almost 90% of its people are non- nationals. By means of major investments in digital infrastructure and innovation, the United Arab Emirates (UAE) aims to establish itself as a digital leader and propel future economic development. Strong connectivity and digital involvement are shown by the UAE's shockingly high internet penetration rate of 99% and over 17 million mobile connections. Moreover, around 85% of the people have access to at least one real financial service, so proving the developed digital economy of the nation. Technological capacity-wise, the UAE has exceeded all other Arab nations.

Projects using metaverse technology and blockchain are among the several initiatives the UAE has undertaken to encourage digitisation. These initiatives are essential to guarantee future prosperity since they complement the main aims of national economic diversification.

Examining the relationship between sustainable fintech and ESG integration within the

fintech industry helps this paper fill a gap in the literature. The research greatly improves three important areas of knowledge. By focusing on fintech, a sector unique in operational and technological terms, this study expands ESG research. Furthermore, using sustainable fintech as a moderating factor in the ESG-performance link offers a fresh viewpoint on how technical developments affect ESG results. Overall, it spreads fintech expertise in developing countries like the UAE, where regulatory developments and sustainability are underlined. The study could help companies and governments match fintech initiatives with moral guidelines to support environmental sustainability. This study will use a quantitative research approach with a structured questionnaire to fill in the knowledge vacuum in the UAE fintech industry, therefore guaranteeing high response rates. Management and non-management staff of UAE fintech enterprises versed in financial technology tools will be surveyed. This method helps many points of view on how ESG and sustainable fintech affect the fintech market. We will distribute several questionnaires in line with a representative sample. We expect a time-bound online poll to draw significant participation [10].

With over half of all fintech's in the MENA area, Dubai has become a financial technology (fintech) hub. Concurrent with this, Abu Dhabi has actively encouraged and made investments in its fintech industry, therefore reinforcing the UAE's leading fintech hub. First fintech unicorn from the UAE, Tabby offers payment solutions; Finamaze and Sarwa are wealth technology firms; and Souqalmal is an Insurtech company. Other notable UAE fintech businesses originate in a range of disciplines. Focussing on those actively engaged in the UAE fintech ecosystem, the survey intends to offer significant insights on sector-specific possibilities and difficulties. Stakeholders and legislators can thus be sure that the results are instructive, statistically sound, and practical.

2. Literature Review

Fintech is the application of technology towards financial service provision. But financial technology developed not on its own but rather under influence. Based on telegrams and codes, the United States Federal Reserve Bank started a wire transfer system in 1918. Historically, sending actual money such as gold or cash was the only means to move payments between institutions over great distances. Installed in a Barclays Bank branch in Enfield, north London, the first automated teller machine (ATM) came in 1967. Consumers can withdraw money using this technology by writing paper checks into automated teller machines. This scene shows a physical duplicate of digital banking services. NASDAQ emerged as the first computerised stock exchange worldwide throughout the 1970s. The next phase involved building a system of interbank communication channels to enable sizable global money transactions[11]. This habit persisted well beyond banks started running mainframe computers in the 1980s. according to O'Dair and Owen [12] that the emergence of internet banking has transformed consumers' opinions and approaches of financial management.

As more people use digital payments, the 1998 PayPal debut offers a window into the direction of online financial transactions. FinTech ideas then follow from this. Legislative changes have caused a loss of faith in institutions including banks and financial companies, which has rendered the sector more open to new FinTech players offering both financial and competitive

benefits. Though this technology is a FinTech revolution, Zhang et al. assert that seasoned businesses have already adopted it [13]. Start-ups and other unusual companies have helped FinTech to become more innovative and increase its reputation. The launch of the iPhone hastened the worldwide acceptance of cellphones, therefore defining mobile devices as the main tool for Internet and financial service access. Popular right now are blockchain technology and cryptocurrencies. Among FinTech-driven innovations include digital loans, international mobile wallet transfers, mobile and peer-to-peer payments. Along with intelligence, decentralisation, and the expansion of financial technology, banks are trying for control of the whole financial value chain. In the context of financial products and services, FinTech gives top priority on offering the greatest possible user and customer experience [14].

Research on newly developing financial technologies and their possible uses—such as artificial intelligence, machine learning, blockchain, augmented reality or virtual reality, and quantum computing has exploded as individuals grow more conscious of how technology is influencing established financial institutions. Avoiding business interruptions and advancing wise financial sector decisions depend on an awareness of the possible benefits and drawbacks of these technologies. With time, the uses of contemporary technology in banking are progressively clear-cut. Through building value chains and redefining corporate financial facilitation, fintech is predicted to upend the established financial services sector [15]. People have so grown fascinated in creative digital products. One has to put client value first and prioritise their demands if one wants to succeed in the FinTech field. Success calls for complete fulfilling of all client needs with minimum of fuss. We have to include new technologies into our teaching tool set if we are to meet the evolving needs of our clients. FinTech solutions have to be always creative, according to [16, 17].

By means of literature studies and summaries, we want to enhance our grasp of the possible integration of emerging technologies into the financial system. We wish to investigate how technologically driven finance might change the wider financial environment and future financial systems, pinpoint possible uses of these technologies inside the system, grasp the obstacles to their application, and project the problems these technologies could solve. By increasing its intelligence, adaptability, security, efficiency in issue solutions, and favourability of informed decision-making, emerging technologies can help to improve the present financial system [18, 19].

Including ESG factors is changing financial analysis and decision-making and has significant consequences for company conduct and investment policies. Among other ESG factors, environmental stewardship, social responsibility, and governance standards are becoming even more crucial for long-term financial success [20]. Modern ESG rating methods have changed the evaluation of sustainable investments, thereby driving the main change in this direction. Recent studies [21] indicate that these assessments benefit investors by enhancing information access and openness, hence increasing their relevance in financial decision-making procedures. Although they provide a basis, conventional ESG indicators are under criticism for their narrow focus on corporate sustainability [22-24]. New ESG grading systems have evolved from these constraints to offer a completer and more sophisticated picture of companies' environmental activities. These

improvements create the foundation for the successful inclusion of ESG factors into investment plans. In the framework of "green fintech" and "sustainable digital finance," [25]underline the relevance of these special rating systems in showing how fintech innovations are altering the ESG evaluation paradigm. Ng, Lye [25] and Egorova, Grishunin [22] contend that reaching environmental sustainability targets depends on fintech innovations like sophisticated data analytics and blockchain technology as well as others. This confirms the connection between ESG and fintech. Apart from these advances, some features of the relationship between ESG issues and technological expansion especially artificial intelligence demand careful attention.

Selim [26] emphasises in his study of the several effects of technology on ESG performance that, although technological progress has the possibility to improve ESG results, it also brings new elements that have to be controlled. Blockchain and digital platforms among fintech developments can help ESG disclosures be more transparent and accountable. These instruments raise the dependability and correctness of ESG data, thereby influencing corporate strategy and investment decisions. Using artificial intelligence and machine learning in ESG analytics improves performance assessment and prediction; nonetheless, this approach begs questions regarding data interpretability and quality. Many studies on how ESG components affect financial performance have looked at this and have shown that these features can have a significant influence. Still, the degree to which this impact is perceived depends on the industry and the location. Data from [27] shows that certain companies gain more from robust ESG rules than others, therefore highlighting the industry-specific variation in the link between ESG standards and financial performance. Evaluating the influence of ESG issues calls for considering both quantitative and qualitative performance criteria, notes [28]. One must have a complete awareness of how ESG policies affect profitability and other financial indicators as well as be able to identify qualitative elements of organisational sustainability that might not be clear-cut in conventional financial records [29].

Emerging as a vital topic of research with significant consequences for company performance, fintech is helping to improve sustainability. In the financial sector, emerging technologies are fast turning into a great advantage [30]. "Financial technology," or "FinTech," is essential in providing banks new technical solutions if we are to raise the efficacy of financial services [31]. Conventional financial institutions use FinTech in internal development, external partnerships, and acquisitions. Their curiosity results from their awareness that FinTech can produce risk control, financial innovation, and higher profitability. Research indicates that FinTech raises public money's liquidity Hinson, Lensink [32] and publicly traded companies are better in capital investment [1].

Fintech technology, according to Dwivedi, Alabdooli [5], goes beyond merely leveraging "digital" technologies and data to develop new goods or enhance already-existing ones The financial technology (FinTech) revolution influences operations, customer service, and employment of a company [33]. Milian, Spinola [34], defined as "technologically enabled financial innovation that may result in new business models, applications, processes, or products, significantly impacting markets, financial institutions, and the delivery of financial services. If the financial sector does not modify its procedures to include new technologies, the digital transformation of the banking system

could generate disturbances [35]. Chen, You [36] advise financial institutions to combine new resources and expertise such as data scientists, developers, and IT specialists with their existing capabilities to effectively adapt to the continuous changes in their operating environment, especially to enable process digitisation and streamlining that is, to help. FinTech technologies greatly value human resources [37].

Businesses have to change their strategies and systems if they are to succeed in the data-driven economy of today and attract to young consumers who are tech-savvy, according Grennan and Michaely [38] investment in all spheres of banking and financial intermediation including credit (crowdfunding and peer-to peer lending), payment services (instant payments), virtual currencies (Bitcoin), consulting services (robo-advisors), blockchain or distributed ledger technology for decentralised transaction validation, biometric identification (fingerprint, retina, or facial recognition), and service delivery infrastructure (cloud computing and Big Data) [39]. The reliance of the current generation on digital services portends the approaching demand for sophisticated financial services brought on by population increase [40]. Eventually, the simplicity of using mobile devices to access financial services will help to increase accessibility for elderly and less technologically advanced individuals [41]. Since most consumers were compelled to use financial technology products to purchase goods and services, the epidemic crisis hastened the dissemination of them [42]. To satisfy customer demand for digital services and compete with both conventional and digital banks using advanced transaction techniques, the banking industry is welcoming innovation [43].

Financial intermediaries engaging in FinTech can penetrate new markets and challenge OTC companies as Amazon, Alibaba, Apple, and Facebook. These firms are fast positioning themselves as financial intermediaries rather than consumer-oriented online platforms [44]. Protecting client data is another use for financial technology by banks [11]. Services that give client privacy and trust first priority are probably going to draw more business [36]. In FinTech blockchain and other data validation technologies offer safe financial and monetary transactions [45]. Gomber, Kauffman [14] claim that FinTech companies following strict data security and privacy policies attract and retain customer confidence. Rundo, Trenta [46] hold that adoption of new technology is often influenced by social and legal aspects as well. According to some research, good standards in this field help FinTech to spread quickly [47].

Recent studies indicate that ESG policies significantly affect performance in ways that are challenging to identify using only financial measures. [48]claim that good ESG disclosure enhances the brand value and reputation of a firm since good ESG communication helps to create stakeholder confidence and thus improves the corporate image. According to Barak and Sharma [49] sustainable business practices especially in the banking and insurance industries—raise the brand value of a company. Moreover, Lu, Ye [50] think that increasing employee satisfaction and retention depends critically on CSR initiatives. Li, Han [51] confirm this result by finding that better ESG performance matched increased staff morale. While Chen, You [36] observed that CSR improves customer involvement and trust, Nizam, Ng [52] found that ESG programs considerably raise consumer loyalty, especially in developing countries. These studies taken together show the several ways ESG policies

enhance performance, especially regarding consumer loyalty, employee engagement, and brand value.

Potential ways banks might employ to enhance sustainable finance technology are including working with FinTech companies and including into open banking ecosystems [43]. With an eye towards the SDGs, for instance, developing and emerging nations could gain significantly from the explosive business of "green FinTech," which seeks to lower the hazards related with climate change [53]. By means of the new open banking framework, which promotes the elimination of conventional barriers, financial risks connected to environmental challenges in different climates can be better assessed. Financial technology companies who offer banks extra services distribute this knowledge to them [54]. Given that worldwide clean technology spending must triple by 2030 to reach carbon neutrality, this is a significant step forward especially [55]. Unfortunately, compared to credit and market risks, data on climate-related hazards is lacking right now, which limits the financial industry's capacity to effectively mobilise required resources [56]. FinTech is the most "revolutionary" technology in financial services according to Deng, Li [57], gathering data on ESG ratings and so enabling the financing of renewable energy projects and other initiatives providing social, environmental, and ecological benefits.

FinTech advances the Sustainable Development Goals (SDGs) by means of sustainable use of financial resources and increasing access to diverse financial goods and services that satisfy consumer needs in an environmentally conscious manner, so according Chen and Xie [58], the studies on technology and the implications of environmental, social, and governance elements (ESG) on some sectors. As well as the influence of sustainable fintech on an organization's ESG performance [59]. Combining sustainability, fintech, and ESG [60] helps one to build on past research a more responsible financial future.

Cao, Yang [17] contend that by transforming many facets of financial services, FinTech developments motivated by digitalisation have the potential to influence sustainability outcomes. Research suggests that adopting FinTech lending platforms could help environmentally friendly projects borrow money more easily [61]. Many studies have shown that financial technology might lower carbon emissions, increase financial service availability, and encourage the use of renewable energy sources [19, 57]. Wang, Peng [62] recommend applying FinTech to advance environmental finance. By improving digital financial infrastructure, FinTech can assist to meet the Sustainable Development Goals (SDGs) of the UN, claims [63]. According to Deng, Li [57], the U-shaped trajectory of financial technology and sustainable development follows Ho [64] claim that while supporting socioeconomic sustainability, digital payment systems can boost financial inclusion. By including cyber risk management, business ethics, and data quality analytics, peer-to--peer (P2P) lending companies in the Fintech sector raised their operational success and company sustainability [65].

Combining conventional financial institutions with online companies using big data, fintech is a radical financial business model. Zhang and Jin [66] claim that companies as Amazon, Google, Alibaba, and Tencent have superior technologies and great market value that might enable them to significantly support sustainable development goals. Using technologies such blockchain, robo-

advisory, natural language processing, the Internet of Things, satellite photography, and big data, fintech firms hope to have a competitive advantage in the sustainable finance market. Among the important companies Macchiavello and Siri [53] name are crowdsourcing, tokens, distributed ledger technology (DLT), artificial intelligence (AI), and big data). Combining sustainability with financial technology (Fintech) presents difficulties; yet, information technology can support. Anshari, Almunawar [67] contend that merging digital markets with finance can greatly increase sustainability. FinTech has to address problems including regulatory obstacles, data security issues, and the digital divide. While realism and holistic methods shape sustainability, technology drives it, according to Arner, Zetzsche [30],while using digital platforms to promote sustainable behaviours could be interesting, it is important to thoroughly review such solutions considering social, ethical, and practical aspects. Development of an integrated plan requires careful consideration of technology, ethical issues, geographical inequalities, and environmental consequences. Excellent IT governance is therefore quite important for FinTech and sustainability results since it is required for technology integration (Almaqtari et al., 2023; Nurullah et al., 2023).

Achieving ESG targets depends on sustainability and IT governance; so, they are closely related. While good IT management can help to solve sustainability issues, it calls for a complete strategy including ESG elements and fosters a sustainable culture. By guiding the alignment of FinTech projects with sustainability goals, IT governance helps to minimise the negative impacts of FinTech advances on sustainability, including the resource inefficiencies related with digital payments. The report emphasises the need of tying sustainability with information technology—including GIS, FinTech, Blockchain, and ICT. The requirement of IT governance for effective technology integration and deployment is underlined by [18, 68-72]. The research by Kayani, Gan [73] underlines the need of IT governance policies in reducing the hazards related to the acceptance of FinTech. Critical for the integration of FinTech solutions, IT governance that does not line with strategic objectives affects innovation and competitive advantage [74].

Emphasising the need of more study on the several expressions of ESG elements in various circumstances, this report adds to current academic understanding on fintech and sustainable finance [5]. Results demonstrate that sustainability drastically alters the fintech-ESG relationship. This claim is theoretically and practically supported. According to Liu, Yan [75], SFT improves ESG project efficacy and Fintech can help balance financial success and corporate social responsibility. Fatemi, Glaum [29] have studied how ESG disclosure and governance rules affect ESG and financial performance, emphasising the necessity for openness and control. According to Mustafa, Islam [76] sustainable fintech innovation is increasingly crucial for lowering ESG consequences. The data imply that sustainability considerably diminishes ESG's impact on fintech success.

2.1 Research model

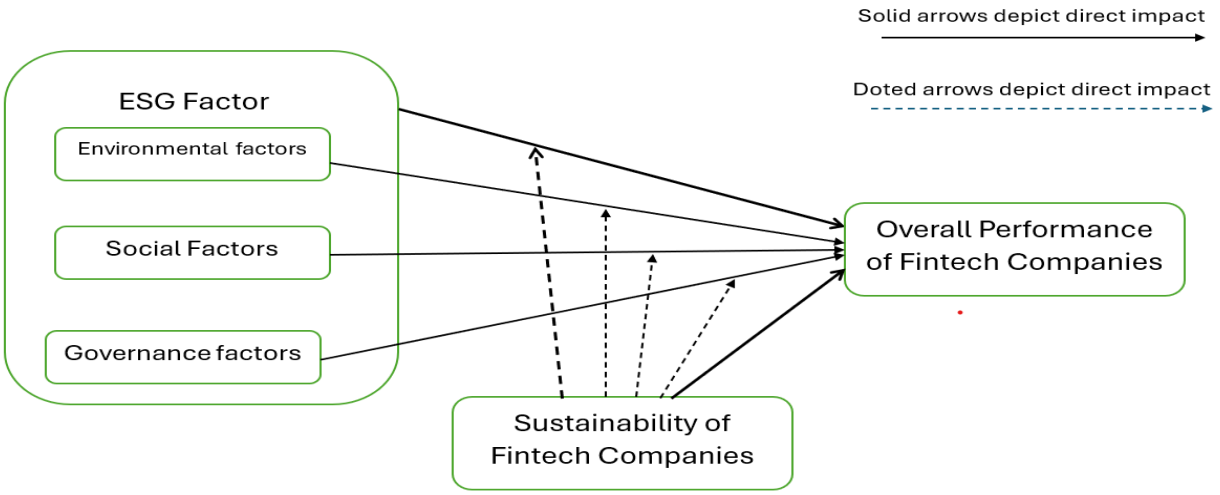

Figure 1. Research model

Source: Adapted from Alqudah, Sierra-García [77]

2.2 Research hypothesis

In light of literature review and the research model we propose following hypothesis:

H1: ESG factors when combined have significant affect on the overall performance of Fintech companies.

H2: Environmental factors have significant effect on the overall performance of Fintech companies.

H3: Social factors have significant effect on the overall performance of Fintech companies.

H4: Governance factors have significant effect on the overall performance of Fintech companies.

H5: Sustainability of fintech companies have significant effect on the overall performance of Fintech companies.

H6: Sustainability of fintech companies moderates the overall performance of Fintech companies.

H7: Sustainability of fintech companies positively effects the environmental performance of Fintech companies.

H8: Sustainability of fintech companies positively effects the social performance of Fintech companies.

H9: Sustainability of fintech companies positively effects the governance of Fintech companies.

3. Research Design

3.1 Data and sample

Our study aimed mostly at investigating a data gap unique to the UAE fintech industry. The main instrument in our quantitative research approach to gather extensive data was questionnaires. Birmingham and Wilkinson [78] supported this approach since it methodically gathered quantitative data from subjects, hence increasing response rates. Important subjects including ESG criteria and sustainable finance were meant to be included on the questionnaire. By matching the questions with our study goals, we intend to acquire important understanding of the viewpoints and experiences of UAE FinTech experts. We concentrated on those employed in the FinTech industry in the United Arab

Emirates to ensure that our conclusions applied.

From UAE-based FinTech companies, 600 employees were chosen at random. We sent 600 questionnaires, stressing the need of better response rates and therefore helping to ease questionnaire completion challenges. With 217 answered, this method attained an excellent 36% response rate. These strict methods guaranteed the validity and authenticity of our information, thereby preparing the stage for our next investigations and conclusions. A group of UAE-based fintech professionals was selected to ensure the poll was pertinent to the sector. Focussing on those influencing the UAE's financial sector allowed us to closely interact with those defining it.

Table 1: Demographic profile of respondents

Characteristics	**Count**	**% of sample**
Gender		
Male	169	78
Female	48	22
Age groups of respondents		
20 to 30	47	22
31 to 40	87	40
41 to 50	73	34
above 50	10	5
Educational Qualification		
Undergraduate degree	41	19
Post graduate degree	78	36
PhD	42	19
Professional certification	56	26
Relevant Job experience		
Up to 1 year	31	14
2 to 5 years	153	71
6 to 10 years	20	9
More than 10 years	13	6

Source: Present Research

4. Results and Discussion

This study provides a complete understanding of the partial least squares structural equation modelling (PLS-SEM) data analysis technique. Table 2 demonstrates that the average scores in all areas surpass the midpoint of the one-to-five scale. In this work, the researchers tested their assumptions using [79-81], a method recommended for route modelling [82]. PLS is very useful for small or complex models, as it examines the correlations between latent components and many variables. Furthermore, it may manage hierarchies and frameworks using various structural path approaches [83]. A PLS route model consists of two parts: the measurement component and the

structural component. The structural model depicts the interrelationships between the constructions, whereas the measurement model investigates the relationship between constructions and their respective measures. The first step in PLS analysis is to evaluate the measurement model's validity and reliability. Hair, Hult [81] suggest removing indicators that have loadings between 0.40 and 0.70 if the average variance extracted (AVE) or composite reliability (CR) is above the suggested limits. We decreased the building count to only include those with factor loads greater than 0.4. Table 2 displays the following information.

Table 2. Reliability and validity of constructs

Constructs	**Items**	**Items loading**	**VIF**	**CR**	**Cronbach's α**	**AVE**
Environmental factors (Env)	Env-1	0.758	1.34	0.782	0.812	0.461
	Env-2	0.81	1.479	0.793	0.835	0.473
	Env-3	0.822	1.41	0.805	0.849	0.486
	Env-4	0.804	1.62	0.815	0.861	0.496
	Env-5	0.795	1.574	0.826	0.875	0.504
Social factors (Soc)	Soc-1	0.779	1.327	0.747	0.732	0.461
	Soc-2	0.771	1.327	0.736	0.769	0.45
	Soc-3	0.827	1.433	0.744	0.78	0.462
	Soc-4	0.813	1.422	0.75	0.788	0.472
	Soc-5	0.808	1.422	0.74	0.775	0.459
Governance factors (Govn)	Govn-1	0.755	1.34	0.729	0.754	0.461
	Govn-2	0.81	1.479	0.792	0.834	0.473
	Govn-3	0.822	1.41	0.804	0.848	0.486
	Govn-4	0.816	1.62	0.814	0.86	0.494
	Govn-5	0.807	1.574	0.824	0.874	0.501
Sustainability of fintech (SusFt) (moderator)	SusFt-1	0.716	1.231	0.729	0.76	0.461
	SusFt-2	0.731	1.199	0.728	0.759	0.46
	SusFt-3	0.821	1.184	0.722	0.751	0.449
	SusFt-4	0.849	1.813	0.741	0.775	0.482
	SusFt-5	0.822	1.464	0.751	0.792	0.492
Overall performance of Fintech company (PerFt)	PerFt-1	0.816	1.901	0.825	0.885	0.461
	PerFt-2	0.738	1.825	0.775	0.817	0.443
	PerFt-3	0.79	1.973	0.792	0.837	0.46
	PerFt-4	0.729	1.676	0.807	0.852	0.474
	PerFt-5	0.712	1.588	0.824	0.869	0.486

Discriminant and convergent validity were assessed. Table 3 shows the values for indicators' cross-loading and composite reliability (CR). Since the components explain more than half of the differences in their indicators, all constructs had AVEs above 0.50, and the model was reliable with

CR values over 0.70. The variance inflation factor (VIF) was used to measure multiple collinearity. All VIF values fell below the suggested level, indicating that multicollinearity was not an issue. Table 3 shows that the dependent variable (DV) is valid because the square root of the average variance extracted (AVE) for each factor is higher than its correlation with other factors. The square roots of the AVE scores exceed the correlations between components, which provides more evidence for discriminant validity.

Table 3. Discriminant validity

Constructs	**Env**	**Soc**	**Govn**	**SusFt**	**PerFt**
Env	0.63				
Soc	0.47	0.66			
Govn	0.06	0.02	0.61		
SusFt	0.54	0.57	0.07	0.66	
PerFt	0.42	0.51	-0.06	0.54	0.58

When examining the structural model of this study, Hair, Hult [81] recommend eliminating the moderator interaction effect first. Thus, we employed two models: one to assess direct effects and another to evaluate indirect effects. The initial five hypotheses of the study were evaluated through the direct effects model. The PLS method, along with bootstrapping techniques that used 10,000 resamples and a two-tailed test, was used to determine the path coefficients and significance levels for each construct.

The results are shown in Table 5. Higher levels of ESG are linked to improved performance in fintech companies, demonstrating that ESG has a significant and beneficial impact on their success. Environmental variables, which are critical to ESG, had a positive and statistically significant impact on fintech performance (H2), implying that enterprises that prioritise environmental issues often have superior financial results. The discovery of a positive and statistically significant association between fintech performance (H3) and social factors (an extra ESG component) underscores the importance of social variables in this environment. The third ESG factor influencing fintech success has a significant positive link with governance traits, implying that better governance standards correlate with higher performance. The data support Hypothesis H5, which states that sustainable fintech practices significantly enhance performance. This study implies that organisations can get greater results by implementing more sustainable fintech practices.

Table 4. Testing of direct effects

Research Hypothesis	**Path coefficient**	**T-statistics**	**p-values**	**Outcome**
H1: ESG → PerFt	0.292	3.719	0.005**	Supported
H2: Env → PerFt	0.201	3.037	0.041**	Supported
H3: Soc → PerFt	0.114	1.888	0.040*	Supported

H4: Govn → PerFt	0.244	3.607	0.019**	Supported
H5: SusFt → PerFt	0.247	3.990	0.009**	Supported

This study investigates the role of SusFt as a moderator using a model that includes four interaction effects. The initial interaction effect investigated the impact of fintech sustainability on fintech efficiency in terms of environmental, social, and governance (ESG) characteristics. We looked at the influence of each environmental, social, and governance (ESG) sub-dimension on Fintech performance, from the second to the fourth effect. We used two-tailed testing and 5000 bootstrapping events to assess the model, showing that the interaction effects can go in either direction [84]. Table 5 shows the outcomes of the secondary effects. We have validated the sixth hypothesis. Sustainable fintech acts as a moderator in the interaction between fintech success and ESG indicators. Improved sustainable fintech solutions show a positive association between fintech success and ESG metrics. Sustainable fintech solutions strengthen the favourable connections between environmental elements and fintech performance, as well as between governance features and fintech performance. On the other hand, we retained H7 (environmental traits) and H9 (government attributes). H8 was rejected because social factors and sustainable fintech did not have a demonstrable indirect effect on fintech performance.

Table 5. Indirect effects

Hypothesis testing	Path coefficient	T statistics	p-values	Outcome
H6:SusFt*ESG → PerFt	0.122	1.850	0.037	**Supported**
H7:SusFt*Env → PerFt	0.185	2.894	0.003	**Supported**
H8:SusFt*Soc → PerFt	0.076	0.950	0.144	**Not supported**
H9:SusFt*Govn → PerFt	0.192	2.264	0.018	**Supported**

5. Conclusions

In conclusion, it is clear that in today's business world, particularly in the UAE's manufacturing sector, information technology has emerged as an important instrument for distinguishing oneself The observed positive connections between ESG parameters and FinTech success are significant. In the financial technology sector, higher ESG ratings correlate with better results. This fourth argument highlights the importance of incorporating environmental, social, and governance concerns into FinTech plans. These characteristics improve the sector's operating efficiency across various categories, including sustainability, which is one of those domains. The study's authors discovered that sustainable FinTech methods alter the relationship between performance and environmental, social, and governance parameters. The implementation of sustainable practices significantly improves the success of FinTech companies that address environmental, social, and governance challenges. This debate stresses the importance of

sustainability initiatives for maximising the benefits of strong ESG systems. Sustainable FinTech solutions help boost the positive effects of ESG features on performance, as shown by statistical research using PLS-SEM. This research has major significance since it demonstrates that incorporating sustainability into business operations is a critical component that can improve performance. The findings are especially important for financial technology companies looking to increase production while complying with larger environmental aims.

These findings have several significant policy consequences. Businesses in the financial technology sector should tailor their ESG systems to the unique peculiarities of their industry. Legislators and corporate leaders should actively explore and encourage the implementation of these frameworks. Effective ESG practices are critical for achieving sustainability and long-term success, and they can help individuals recognise their relevance. The close link between ESG determinants and financial results mandates that regulatory authorities set explicit ESG reporting and compliance standards. Comprehensive ESG analysis is critical for FinTech companies seeking to improve their performance and environmental reputation. This method compares existing procedures to ESG requirements and takes specific actions to address detected inconsistencies. Fostering a sustainable culture can increase organisations' chances of complying with emerging requirements and legislation. Their performance and market reputation would increase as a result. To successfully track progress and improve initiatives, it is critical to routinely monitor and review sustainability performance metrics. Companies should set up methods to monitor their ESG performance and make required improvements. Sustainability programs are still successful and aligned with changing stakeholder expectations thanks to ongoing review processes.

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Conflicts of Interest

The authors confirm that there are no conflicts of interest.

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