GOMAL UNIVERSITY
JOURNAL OF RESEARCH
Gomal University, Dera Ismail Khan, Khyber Pakhtunkhwa, Pakistan
ISSN:1019-8180 (Print) ISSN: 2708-1737 (Online)

Website	www.gujr.com.pk	HEC Recognized	Social Sciences	CrossRef	DOI:10.51380

DIGITAL FINANCIAL LITERACY AND FINTECH ACCESS DRIVING SUSTAINABLE SMEs PERFORMANCE THROUGH GREEN INNOVATION AND ENTREPRENEURIAL AGILITY

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KEYWORDS

Digital Financial Literacy, Access to FinTech Services, Sustainable Performance, Green Innovation and Entrepreneurial Agility

Article History

Date of Submission: 17-05-2025
Date of Acceptance: 21-06-2025
Date of Publication: 30-06-2025

ABSTRACT

This study investigates the impact of digital financial literacy and access to FinTech services on the sustainable performance of SMEs in Pakistan, with a particular focus on the mediating roles of entrepreneurial agility and green innovation. Thus, drawing on resource-based view and dynamic capabilities theory, the research proposes and tests a dual-mediator model using partial least squares structural equation modeling (PLS-SEM) on data collected from 350 SMEs through a structured survey. The findings reveal that both digital financial literacy & access to FinTech services significantly boost sustainable performance, with entrepreneurial agility and green innovation acting as partial mediators. Notably, digital financial literacy demonstrates a stronger and more consistent indirect effect compared to FinTech access, emphasizing the critical role of human capital in leveraging digital tools for sustainability outcomes. The results offer important theoretical contributions by bridging gaps in the FinTech and sustainable entrepreneurship literature and provide practical implications for SME policymakers, digital finance providers, and sustainability advocates aiming to build resilient & future-ready enterprises in emerging economies.

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DOI: https://doi.org/10.51380/gujr-41-02-01

INTRODUCTION

Over last few years, role of financial technology (FinTech), entrepreneurship and sustainability has attracted considerable attention by the scholars, policy-makers, and business practitioners, especially in developing economies (Zaid, Khan, Mekhlafi, Saoula, Saeed & Mohammad, 2025). As the global economy becomes gradually digitized, capacity of small and medium enterprises

(SMEs) to adapt and thrive hinges not only on their traditional financial capabilities but also on their ability to mix digital tools and technologies into everyday business functions (Latifannisa & Wardi, 2025). In Pakistan, where SMEs account for over 40% of total GDP and employ the significant portion of the labor force, their role in sustainable development is both pivotal and underexplored. The high rate of FinTech ecosystem development in South Asia such as digital wallets, peer-to-peer lending platforms, and mobile banking offers the special opportunities to these businesses to advance and improve their leading performance (Amjad, Rao, Rahman, Baig, Usman & Younas, 2025). However, availability of access to FinTech infrastructure is not enough.

The ability of entrepreneurs to comprehend and leverage these tools-termed digital financial literacy-plays the critical role in determining whether such technologies lead to transformative business outcomes or simply remain underutilized resources (Jan, Junfeng, Iqbal, Raza, Naz & Bhatt, 2025). Against this backdrop, sustainability has become increasingly vital performance metric for the SMEs, encompassing environmental responsibility, social equity, and long-term economic viability. Conventional financial performance indicators are significant but can no longer be sufficient in the determination of the overall success of an enterprise in the modern economy (Aslam, Rehman & Nasir, 2023). Sustainable performance, in this regard, includes the firm's ability to innovate in environmentally responsible ways and to adapt swiftly to changing market and regulatory landscapes. In the Pakistani context, SMEs often struggle with limited access to financial services, lack of technological awareness, and minimal institutional support, which hinders their transition toward sustainable operational models (Mehmood & Humayun, 2025).

Still, a growing FinTech landscape in Pakistan, fueled by mobile penetration and supportive regulatory frameworks like the State Bank's Digital Financial Services roadmap, presents the promising avenue for SMEs to overcome these challenges. It is thus imperative to investigate how digital financial capabilities and access to the FinTech services might foster sustainability-oriented practices among SMEs, especially through underlying mechanisms like innovation and agility (Ullah, Diao, Shahzad & Iqbal, 2025). Digital financial literacy refers to the ability of individuals and organizations to effectively understand, evaluate, and utilize digital financial services for informed decision-making and financial planning. In this connection, that is, in the case of entrepreneurship, the ability to work with personal finance is not limited to the scope of individual financial management and applications, but it is also subject to the competencies of working with mobile banking, digital payment systems, and financial management software in the context of enterprise-related decisions for outcomes (Hossain, Rehman, Bhuiyan & Salleh, 2025).

When entrepreneurs possess a high degree of digital financial literacy, they are more likely to explore innovative financial products, manage resources efficiently and adapt business models in response to technological advances (Yanto, Sari & Suryani, 2025). Access to FinTech services, on the other hand, reflects the availability, inclusiveness, and usability of digital financial tools and platforms that allow SMEs to perform core financial functions such as capital acquisition,

budgeting, and transaction management. Although, there is interconnection between the two concepts, they have different aspects of digital transformation: literacy focuses upon the ability whereas access focuses on the opportunity (Seraj, Fazal & Alshebami, 2022). The relationship between these variables and sustainable performance is inherently complex and multifaceted. Existing literature suggests that digital financial literacy can empower entrepreneurs to make strategic investments in the sustainable technologies, reduce costs through efficient resource management, and comply with environmental regulations effectively (Ramanathan & Indiran, 2021).

Access to FinTech services can further amplify these effects by democratizing capital flows and reducing dependency on traditional banking institutions, which often exclude small firms in developing countries. However, such inputs cannot automatically lead to better sustainable results directly when not combined with internal organizational capacities like innovation and agility (Astuti & Nugroho, 2023). Green innovation, defined as the implementation of new or improved products, processes, practices reduce environmental harm, is one such capability as enables SMEs to align economic goals with ecological responsibility. Entrepreneurial agility, referring to the capacity to swiftly reconfigure business strategies and processes in response to changes in external environment, allows SMEs to remain resilient in face of market volatility, regulatory shifts, and technological disruptions (Dissanayake, Iddagoda, Rukshan & Deshika, 2023). The research problem centers on understanding how and under what conditions digital financial literacy and access to FinTech services donate to sustainable performance of SMEs in Pakistan.

By focusing on Pakistani SMEs, the research contributes to a growing body of literature that seeks to decolonize entrepreneurship and innovation studies by foregrounding the experiences of the Global South. Second, the study contributes to the theoretical background by combining the RBV and DCT to describe the twin role of resources and capabilities in the development of sustainable outcomes. Third, from a policy perspective, the findings can inform the design of more effective digital financial literacy programs and FinTech access strategies that go beyond mere infrastructure provision to include behavioral and organizational change. in this linking, the research is not only a contribution to the theoretical discussion of the role of FinTech and entrepreneurship, but also the piece of advice to all who are trying to make entrepreneurship a path to sustainable development in resource-scarce environments. Thus, such integrative and interdisciplinary approach is critical to unleashing transformative potential of digital finance in the quest of a more inclusive, effective, resilient and sustainable future in context of emerging economies.

LITRATURE REVIEW

This study is based on two models of strategic management and entrepreneurship; resource -based view and dynamic capabilities theory. According to RBV, firms can develop sustained competitive advantage through acquisition and application of resource that is valuable, rare, inimitable and non-substitutable (Hidayat-ur-Rehman, 2024). In this study, the digital financial literacy and access to FinTech services are considered intangible and technological resources

that can enhance an SME's performance trajectory. Nevertheless, the competitive advantage might not necessarily be achieved by resources alone without the abilities of a firm to adapt the resources in the dynamic settings. This is the area that DCT would be especially applicable in that it provides a prism through which firms are able to construct, integrate and reformulate (Hassan, Aslam, Mashkoor & Raza, 2025). The green innovation and entrepreneurial agility, viewed as the dynamic capabilities, mediate the path between digital financial resources and sustainable performance by enabling firms to respond proactively to environmental & market challenges.

This theoretical synthesis allows formulating a conceptual model that does not only reflect the existence of digital tools but their conversion into sustainable results with the help of internal capabilities (Trần, Afifa, Tran & Dang, 2025). Empirical evidence on digital financial literacy highlights its growing relevance in the entrepreneurial landscape, particularly in developing economies. Lusardi and Mitchell (2014) claim that financial literacy, in particular, digital one, improves the decision-making of individuals and contributes to their financial well-being. In the SME sector, digital financial literacy equips entrepreneurs with the skills to manage digital accounts, engage in the online transactions, assess digital credit products and navigate FinTech platforms effectively (OECD, 2020). For example, Afshan and Sharif (2022) found that Pakistani micro-entrepreneurs with higher digital financial literacy were likely to adopt mobile banking and digital budgeting tools, in turn improved resource utilization and financial planning. Yet, while digital financial literacy is linked with improved financial performance, its relationship with the sustainable performance, which includes the ecological & social dimensions, remains underexplored.

This study addresses this gap by positioning digital financial literacy not only as a functional skill but as a strategic enabler of sustainable behavior within SMEs. The financial technology services are an important facilitator of inclusive entrepreneurship because of the increasing FinTech revolution. Access to FinTech is defined as the availability and the use of instruments likewise mobile payment, peer-to-peer lending, blockchain-based accounting and digital credit scoring system (Gomber et al., 2018). Mobile money services, such as Easypaisa and JazzCash, have increased access to financial services by the underserved populations in Pakistan (World Bank, 2022). In this connection, for SMEs, access to such platforms reduces transaction costs, improves cash flow management as well as the opens up alternative funding channels, thereby enhancing operational efficiency and resilience (Zhao & Zhang, 2020). However, while several studies underscore the positive effects of FinTech upon entrepreneurial growth (Bazarbash & Beaton, 2020), fewer have investigated whether and how these tools contribute to sustainable performance.

To be sustainable, financial efficiency is not enough, but rather the need to be responsible in the environment, social and ethical governance. This study proposes that access towards FinTech services can foster sustainability indirectly by empowering SMEs to allocate resources toward green innovation and rapidly adapt to stakeholder demands. Sustainable performance itself is multidimensional construct that integrates economic viability with environmental stewardship

and social responsibility (Elkington, 1998). In SMEs, achieving such balance is challenging due to limited resources, regulatory pressure, and market competition. However, the concept of sustainability is slowly becoming a strategic issue as opposed to a marginal one. Baumgartner and Ebner (2010) claim that the companies that have incorporated sustainability in their core operations are likely to perform better than their counterparts in long-term value creation. The adoption of green innovation, such as energy-efficient processes, eco-friendly packaging, and pollution-reducing technologies, is one pathway through which SMEs can achieve sustainable outcomes.

Similarly, entrepreneurial agility, or the ability to swiftly sense and respond to market changes, allows firms to align with shifting the environmental norms and customer expectations. Such abilities, as demonstrated by recent empirical research, are determined by the technological orientation of the firm and its access to digital tools (Liu et al., 2022). The research on green innovation demonstrates that the digital technologies can act as catalysts for the environmental improvements. As an example, Marchi (2012) concluded that companies that invest in digital tools were more inclined to introduce the product and process innovation that minimizes the environmental impact. In SMEs, the integration of FinTech can facilitate green innovation by easing access to green financing, streamlining reporting systems for sustainability audits, and providing data analytics for the carbon footprint tracking (Kushwah et al., 2021). In Pakistan, environmental policies are not always strong and incentives are not high, can be lowered with the help of the digital solutions and help make the process of switching to sustainable practices easier.

However, green innovation often requires not just technological capability but a willingness to reconfigure business models, which is where mediating role becomes critical. Entrepreneurial agility, an essential component of dynamic capabilities—enables SMEs to navigate uncertainty and align resources with emerging opportunities (Doz & Kosonen, 2010). Agility is strategic flexibility, as well as the ability to learn fast based on feedback of the environment. Agile firms are in better position to test new platforms, shift strategies of operations, expand innovations that promote sustainability in digitized environments (Overby et al., 2006). The argument is justified empirically; as such, observed that digitally agile companies were more responsive to changes in regulations that related to environmental compliance. For SMEs in Pakistan, agility can mean the difference between survival and failure in ecosystem characterized by economic volatility and institutional voids. Digital financial literacy boosts agility by improving decision -making speed and adaptability, access to FinTech expands strategic options available for agile responses.

Despite the fact that the role of FinTech and digital capabilities in performance improvement has been addressed, there are a number of empirical and conceptual gaps in the literature. To begin with, FinTech adoption or digital literacy has been viewed as an end in most studies and not as a medium to achieve the higher-order strategic outcomes such as sustainability (Vial, 2019). Second, while research has independently linked FinTech and innovation (Gomber et al., 2018) and FinTech and agility (Pappas et al., 2018), few have considered their combined effect

on sustainable performance through a dual mediation pathway. Third, research in the South Asian or Pakistani context is especially rare, even though the region is characterized by rapidly growing digital infrastructure and sustainability issues. Addressing these gaps, present study provides an integrative framework that examines how digital literacy and access to FinTech services influence sustainable performance, mediated by green innovation and entrepreneurial agility.

RESEARCH METHODOLOGY

This study adopts the quantitative research design with an explanatory approach, aiming to investigate causal relationships between digital financial literacy, access to FinTech services, and sustainable performance, with green innovation and entrepreneurial agility as mediating variables. The explanatory character of the research corresponds to the aim of the research to verify the hypotheses that are based on existing theories, i.e. the Resource-Based View (RBV) and Dynamic Capabilities Theory (DCT). The choice of the quantitative design is explained by the necessity to discuss the relationships between variables in a vast sample and to confirm a dual-mediation model with a structural equation modeling (SEM). In this method, a rigorous testing of hypothesis is possible and the researcher can evaluate the direct and indirect effects among variables in a statistically sound way. This study is based on philosophical orientation of the positivism that focuses on the objective reality, empirical observation and deductive reasoning.

Positivist position is associated with application of survey-based methods of data collection, and quantitative statistical analysis, because it aims at explaining the visible trends in human behavior using measurable constructs. The study assumes that the relationship between digital financial capabilities and sustainable performance can be generalized across similar contexts, particularly among (SMEs) in Pakistan. Accordingly, the research is based on the assumption that social phenomena may be examined objectively with the help of empirical research and model-based theories. The population for study consists of registered SMEs operating across various sectors in Pakistan, including manufacturing, services, and technology. SMEs form the backbone of the Pakistani economy, contributing over 40% to GDP and accounting for nearly 80% of non-agricultural employment. The target audience is owners of SMEs, their founders, or top managers, who are engaged in making decisions in digital finances & strategic decision -making.

Given the research's emphasis on the digital financial literacy and access to FinTech, the study prioritizes enterprises that are at least partially digitized and have had some exposure to the FinTech platforms, whether over mobile banking, digital payments, online financial services. A stratified random sampling strategy is hired to ensure representation across key geographic and sectoral categories, such as SMEs in urban versus semi-urban areas and across technology -intensive and traditional sectors. In each stratum, enterprises are randomly taken out of the databases offered by Small and Medium Enterprises Development Authority and the regional chambers of commerce. The stratified sampling will increase the applicability of findings and minimize selection bias. A sample size of 400 SMEs is targeted, consistent with recommended

thresholds for SEM, requires large samples for robust path modeling and adequate power for detecting mediation effects, sample size decided with regard to number of valid and complete responses.

The data collection strategy implies a self-administered, structured survey questionnaire that is distributed in paper and electronic form. The survey instrument will measure the perceptions, attitudes and practices that concern the study key constructs. All of the items of questionnaire will be based on the previously tested scales found in the literature to guarantee reliability and construct validity. Digital financial literacy is measured using items adapted from Lusardi and Mitchell (2014), while access to FinTech services is assessed using scales developed by Gomber et al. (2018). Green innovation items are drawn from Chen et al. (2006), and entrepreneurial agility is measured based on the scale by Doz and Kosonen (2010). Sustainable performance is captured using the multidimensional scale that includes environmental, social, and economic indicators, adapted from Elkington's (1998) triple bottom line framework. Thus, all items were measured on the five-point Likert scale that will run between strongly disagree and strongly agree.

Before actual deployment of questionnaire, it is pilot tested on 30 SME managers to determine clarity, reliability, and internal consistency. When the data is collected, it is initially checked on missing values, outliers and normality. The descriptive statistics are carried out to get the idea about the demographic and organizational profile of sample. PLS-SEM of SmartPLS software is main data analysis method. The PLS-SEM is selected because it is more appropriate when conducting exploratory studies, it can work with relatively small sample size and can be used to model complex relationships with multiple mediators. In this regard, it is done in two parts, the measurement model, and structural model. The measurement model evaluates reliability (Cronbach alpha, composite reliability), convergent validity (average variance extracted), and discriminant validity (Fornell Larcker criterion, HTMT ratio). After the measurement model is tested, the structural model is tested to test the diverse relationship between the constructs as hypothesized.

The significance of path coefficients, mediation effects is determined by 5,000 bootstrapping resamples. The study is based on the ethical standards set in accordance with the international standards of the human subject's research. The study is purely voluntary and all respondents are asked to sign the informed consent before the data is collected. The participants receive information regarding the aim of the research, confidentiality of their answers, and their right to stop participating in research any time without any punishment. No personally identifying data is gathered and information is reported in aggregate so as to guarantee anonymity. The information gathering procedure is looked at and endorsed by institutional ethics committee of the university the researcher is associated with. All the data in digital form is backed up safely in encrypted servers, and the physical responses are stored in locked storage where they are not supposed to be accessed by the wrong person. Ethical integrity of the study does not only guarantee protection of respondents, but also adds credibility and acceptability of the research findings.

DATA ANALYSIS

In Table 4.1, the reliability analysis shows that there is satisfactory internal consistency and construct reliability of all the variables of the study. All constructs have values of Cronbach Alpha that are higher than the acceptable value of 0.70 and this means that there is good internal consistency in the items as Nunnally and Bernstein (1994) suggest. Likewise, the rho_A values are in line with Cronbach Alpha, which further leads to reliability of the construct. The composite reliability of all the variables is above the suggested minimum of 0.70, which proves that the measurement model is sufficient. In addition, the results of the average variance extracted (AVE) values of all constructs are more than 0.50 that shows a satisfactory level of convergent validity based on Fornell and Larcker (1981). These results collectively confirm that the measurement scales used for access to FinTech services, digital financial literacy, entrepreneurial agility, green innovation, and sustainable performance are reliable and valid, and suitable for further structural equation modeling.

Table 1

Reliability Analysis

	CA	RHO_A	CR	AVE
Access to FinTech Services	0.809	0.816	0.869	0.571
Digital Financial Literacy	0.806	0.807	0.856	0.504
Entrepreneurial Agility	0.838	0.839	0.883	0.563
Green Innovation	0.71	0.719	0.802	0.509
Sustainable Performance	0.758	0.78	0.822	0.505

Table with HTMT (Heterotrait-Monotrait) validity analysis proves the discriminant validity of all constructs taken into account in the study. Henseler et al. (2015) also state that the values of HTMT lower than 0.85 show that constructs are empirically different. All the HTMT values in this table are between 0.294 and 0.797 which falls within the acceptable range showing that each construct measures different conceptual domain. The highest observed HTMT value is between digital financial literacy and green innovation (0.797), which is still below the critical cutoff, suggesting acceptable discriminant validity. Consequently, the results validate that access to FinTech services, digital financial literacy, entrepreneurial agility, green innovation, and sustainable performance are distinct constructs, suitable for inclusion in the structural model.

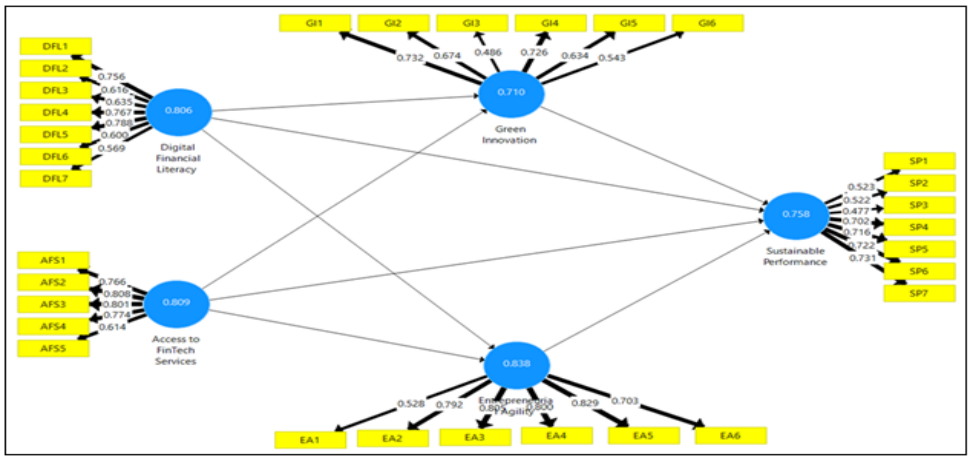
Table 2

Validity Analysis

	[1]	[2]	[3]	[4]
Digital Financial Literacy [2]	0.294			
Entrepreneurial Agility [3]	0.356	0.66		
Green Innovation [4]	0.294	0.797	0.61	
Sustainable Performance	0.775	0.511	0.544	0.526

Figure 1

Measurement Model



Structural Equational Modeling

According to the results of structural equation modeling, there are statistically significant and positive correlations between the study variables, which proves hypothesized paths. Access to FinTech services shows a direct and significant impact on entrepreneurial agility ($\beta = 0.169$, $t = 5.959$, $p < 0.001$), green innovation ($\beta = 0.081$, $t = 2.326$, $p = 0.022$), sustainable performance ($\beta = 0.559$, $t = 17.271$, $p < 0.001$), suggesting that greater accessibility to FinTech enhances both innovation and strategic responsiveness, that ultimately contributes to sustainable outcomes. Similarly, digital financial literacy has strong and significant impact on entrepreneurial agility ($\beta = 0.541$, $t = 19.239$, $p < 0.001$), green innovation ($\beta = 0.632$, $t = 20.069$, $p < 0.001$), indicating that financially literate entrepreneurs are adaptive and capable of integrating eco-innovations. While the direct effect of digital financial literacy on sustainable performance is weaker ($\beta = 0.094$, $t = 2.261$, $p = 0.026$), it remains the statistically significant, implying that its primary influence may be transmitted through mediators. Both entrepreneurial agility ($\beta = 0.150$, $t = 4.264$, $p < 0.001$) and green innovation ($\beta = 0.106$, $t = 2.779$, $p = 0.007$) significantly contribute to sustainable performance, validating their roles as key mediators in the model. Overall, the results provide robust empirical support for the dual mediation framework, highlighting the mechanisms through which digital financial capabilities enhance sustainability amid SMEs in Pakistan.

Table 3

Structural Equational Modeling (Direct Effect)

	OS	SM	SD	TS	PV
Access to FinTech Services -> Entrepreneurial Agility	0.169	0.17	0.028	5.959	0
Access to FinTech Services -> Green Innovation	0.081	0.078	0.035	2.326	0.022
Access to FinTech Services -> Sustainable Performance	0.559	0.555	0.032	17.271	0
Digital Financial Literacy -> Entrepreneurial Agility	0.541	0.541	0.028	19.239	0
Digital Financial Literacy -> Green Innovation	0.632	0.631	0.032	20.069	0

Digital Financial Literacy -> Sustainable Performance	0.094	0.092	0.042	2.261	0.026
Entrepreneurial Agility -> Sustainable Performance	0.15	0.15	0.035	4.264	0
Green Innovation -> Sustainable Performance	0.106	0.105	0.038	2.779	0.007

The mediation analysis presents valuable information on mediation routes by which access to FinTech services, digital financial literacy affect sustainable performance. Indirect relationship between access to FinTech services and sustainable performance by way of entrepreneurial agility is positive and significant (beta = 0.025, t = 3.266, p = 0.001), implying that access to FinTech services positively affects the entrepreneurial agility, which positively influences the sustainable results. On the same note, the indirect effect of digital financial literacy is more significant and indicates the high level of significance (β = 0.081, t = 4.078, p < 0.001) as the indirect effect is through entrepreneurial agility, which ultimately implies that the financially literate entrepreneurs are more agile and are therefore in a better position to lead sustainable performance.

Conversely, green innovation mediation effect in the relationship between access to FinTech services and sustainable performance is positive but insignificant (beta = 0.009, t = 1.672, p = 0.098), meaning that green innovation has a lesser mediating effect in that path. The indirect impact of digital financial literacy upon sustainable performance through green innovation is, however, positive and significant (β = 0.067, t = 2.645, p = 0.009), which indicates a positive role of financial literacy in the SMEs sustainability in terms of the green innovation. On the whole, it can be concluded that these results justify the partial mediation by entrepreneurial agility and green innovation and that the digital financial literacy has more homogeneous and stronger indirect effects on the sustainable performance compared to access towards FinTech services.

Figure 2

Structural Equational Model

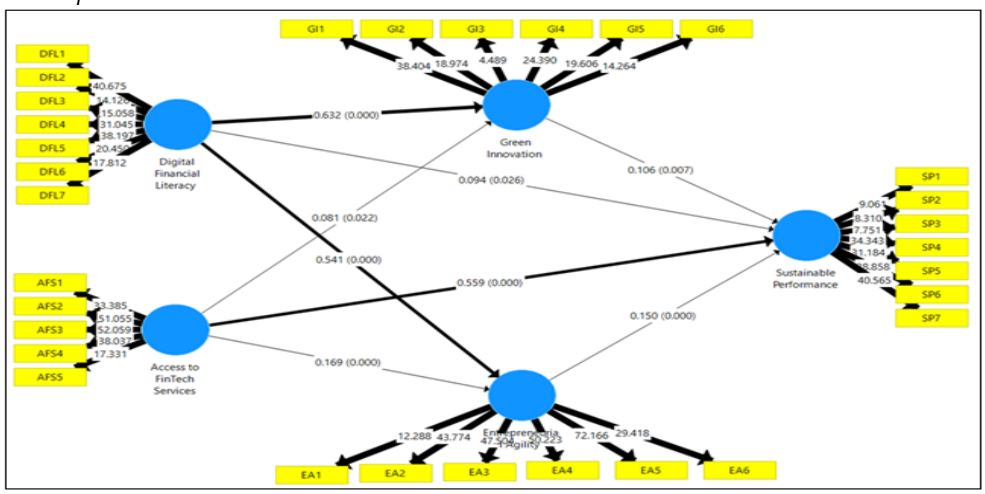


Table 4
Mediation Analysis

	OS	SM	SD	TS	PV
Access to FinTech Services -> Entrepreneurial Agility -> Sustainable Performance	0.025	0.026	0.008	3.266	0.001
Digital Financial Literacy -> Entrepreneurial Agility -> Sustainable Performance	0.081	0.081	0.02	4.078	0
Access to FinTech Services -> Green Innovation -> Sustainable Performance	0.009	0.008	0.005	1.672	0.028
Digital Financial Literacy -> Green Innovation -> Sustainable Performance	0.067	0.067	0.025	2.645	0.009

DISCUSSION

This study provides strong evidence of how digital financial capabilities (the access to FinTech services and the digital financial literacy) can help to achieve the sustainable performance of small and medium enterprises (SMEs) in Pakistan via intermediary effects of entrepreneurial agility and green innovation. The findings confirm the theoretical hypotheses based upon the resource-based view, dynamic capabilities theory that assume that companies with valuable, rare, and inimitable capabilities, including technological and financial expertise, have higher chances to attain better performance outcomes. The important predictor of the entrepreneurial agility and green innovation was digital financial literacy, which indicated that SME managers, provided with financial literacy and digital competency, are more likely to make agile strategic decisions and introduce green innovations, in turn contribute to sustainable performance over ability of firms to react appropriately to the market uncertainty, regulatory, and environmental forces.

The direct impact of the access to FinTech services on sustainable performance was significant too, which means that digital infrastructure and technologically-oriented financial services can promote sustainability on their own. Nevertheless, its indirect impact on green innovation was not statistically significant, which means that the availability of FinTech on its own does not always turn into environmental efforts unless other variables, e.g., culture of innovation, policy incentives, are involved. Quite on the contrary, the mediation analysis established that both entrepreneurial agility and green innovation are important mediators of linkage amid digital financial literacy and sustainable performance. This is indication that cognitive and behavioral preparedness is at the center of turning knowledge to action. The agility of entrepreneurs helps companies to respond to changes in the market in shortest possible time and take advantage of the digital opportunities, whereas green innovation indicates the desire to be sustainable and focused on long-term value contribution. A number of implications are associated with these findings.

Theoretically, research contributes to literature on SME sustainability because it empirically confirms integrated model with two mediators (cognitive capabilities (financial literacy) and structural enablers (FinTech access), strategic behavioral outcomes (agility & innovation). Not

only do the findings fill in literature gaps about RBV and DCT, but also make use applicable in the digital financial environment of the developing economies. Besides, the significant predictive nature of digital financial literacy emphasizes the importance of future studies that should focus on human capital and knowledge related constructs core elements of technology adoption and sustainable development models within the SMEs. In practice, study provides practical recommendations to the policymakers, leaders of SMEs, and FinTech developers. The findings have implications to policymakers in the sense that there is an urgent need to focus on financial education programs to owners and managers of SMEs especially in underdeveloped regions.

CONCLUSION

This study has provided a conclusion that supports the major thesis statement that digital financial literacy and access to FinTech services do not only enable financial inclusion but also are strategic resources of great importance to the organization in terms of sustainability via dynamic capabilities such as agility and innovation. The study establishes that both FinTech access and financial literacy have direct and indirect effects on the performance, although the effects are compounded by their mediating effects on performance through entrepreneurial behaviors and eco-innovative practices. This shows how digital finance and organizational capability building are dependent upon each other. In this linking, the dual mediation model gives the subtle insight into how SMEs can shift to more resilient and sustainable business models in a digital economy. Regarding the wider implications, this study will be relevant to Sustainable Development Goals (SDGs), especially SDG 8 (decent work and economic growth), SDG 9 (industry, innovation, and infrastructure), and SDG 13 (climate action) because it will provide an integrative model that will harmonize financial inclusion, innovation, as well as sustainability.

The study offers a data-based argument to development agencies and international donors to consider the digital financial capacity-building programs as one of the sustainable enterprise development options. To FinTech companies, the results present a market potential to create easy-to-use platforms that do not only make transactions but also an innovative instrument to manage strategic financial planning and innovation management tools specific to SMEs. To conclude, the research proves that sustainable performance of SMEs cannot be viewed as a result of the adoption of the technology, but as the outcome of the synergy of digital financial capabilities and internal dynamic capabilities. Although the access to FinTech services and digital financial literacy are the tools that form the starting point, it is entrepreneurial agility and green innovation that helps to turn these tools into the long-term sustainable value. The longitudinal effects, the sectoral variations, or the influence of the external moderators like institutional support or environmental regulations could be discussed in further research to further narrow our perception of digital transformation in context of sustainability-oriented entrepreneurship.

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