



## Impact of Financial Inclusion, Green Growth, and Environment Sustainability on the Firm Performance: Mediating Role of Institutional Quality

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### Abstract

The research study discusses how financial inclusion, green growth, and environmental sustainability affect the firm performance with specific reference made to the mediating effect of the institutional quality in the context of the Small and Medium Enterprises (SMEs) in Pakistan. The study has a quantitative design that is grounded on a positivist paradigm, and is founded on primary data that was gathered among 480 SME managers in Lahore and Karachi. The relationships between the variables are analyzed with the help of Structural Equation Modeling (SEM). The results indicate that financial inclusion, green growth, and environmental sustainability positively affect the performance of firms significantly. The most influential of these is the green growth, and environmental sustainability and financial inclusion. The institutional quality becomes the most important variable, and it not only has a strong direct impact on firm performance but also has a powerful mediating role in the relationships among the independent variables and firm performance. This demonstrates that the success of financial and sustainability strategies highly relies on the institutional frameworks. Moreover, the findings reveal that there are regional variations in the relationships, with Karachi showing higher relationships than Lahore, which may be due to different institutional and economic factors. The study is a contribution to the extant literature by incorporating the institutional quality as a key linking mechanism between financial and environmental variables and the performance of firms. The results have valuable implications on policy makers, financial institutions and SME managers in fostering sustainable and inclusive economic growth.

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**Keywords:** financial inclusion, green growth, environmental sustainability, firm performance, SMEs, institutional quality, linking mechanism.

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## INTRODUCTION

Small and Medium Enterprises (SMEs) have been well established as a driver of economic growth especially in emerging economies like Pakistan. Within the Pakistani context, SMEs contribute to around 40 percent to the overall Gross Domestic Product (GDP) of the country, more than 90 percent of all enterprises, and thus the significance of SMEs in terms of employment, innovation and economic stability are paramount. Although SMEs are crucial in the structure, they still have a longstanding issue that has had a negative impact on their growth and competitiveness in Pakistan. Some of the most severe obstacles include poor access to formal financial services, poor institutional structures and growing environmental demands of unsustainable business conduct. These limitations not only curtail the efficiency of operations, but also reduce the sustainability of SMEs in a global economy that is becoming more competitive and with more environmental concerns. Financial inclusion and green growth have become two important strategic drivers in the last few years in the quest to improve

the performance of the SMEs. Financial inclusion also helps in accessing necessary financial services, like credit, savings, insurance, and thus SMEs can be able to grow their operations, invest in innovations, and manage risks better (Demirguc-Kunt et al., 2022). Likewise, green growth focuses on business activities that are sustainable and eco-friendly that encourage resource use efficiency, lessen environmental harm, and establish new market opportunities (OECD, 2023). These factors are usually combined to enhance the performance of firms and sustain the economic growth at the firm level.

Nevertheless, the empirical results on the effectiveness of financial inclusion and green growth in enhancing the performance of firms are not consistent. Whereas, some of the researches show that there is a positive correlation between financial inclusion and SME growth, some studies show that access to finance is not enough to ensure better performance outcomes, especially in those settings that are characterized by regulatory inefficiencies and institutional weaknesses (Beck et al., 2010; Kuada, 2022). On the same note, despite green growth programs being linked to cost-effectiveness and competitive edge, their implementation in SMEs is still rather uneven because of the initial cost of investment, the absence of technical skills, and insufficient support of the policy (Shi et al., 2023; Dogaru, 2021). The importance of environmental sustainability practices remains unclear, and at the same time, they have contradictory impacts on firm performance based on factors in the context like market conditions, regulatory enforcement, and organizational capabilities (Shahbaz et al., 2023).

These discrepancies indicate that the correlation between financial inclusion and green growth, environmental sustainability, and firm performance is more multifaceted than previously thought. An increased literature is indicating a direction of the importance of institutional quality as a key contextual determinant of such relationships. Institutional quality is the efficiency of governance frameworks, regulatory and policy implementation systems that enable business operations and economic transactions (North, 1990; Acemoglu & Robinson, 2019). Good institutions minimize uncertainty, promote transparency, and provide an enabling environment to allow businesses to get access to resources and adopt sustainable practices. On the other hand, the potential benefits of financial inclusion and sustainability efforts may be undercut by weak institutions that are characterized by corruption and bureaucratic inefficiencies and regulatory instabilities (Kaufmann et al., 2009).

Although the importance of institutional quality has been identified, the existing literature has mostly viewed it as a background or control variable and in most cases, it has not been considered as an active variable in the theoretical framework. The majority of the studies are concentrated on the direct impact of such variables on firm performance; however, they do not consider the possible mediating effects of such variables. Moreover, the empirical studies involving institutional quality as a mediating factor are still scarce, especially when it comes to the working of SMEs in developing countries like Pakistan (Chauvet & Jacolin, 2017; Thathsarani et al., 2023).

The other major weakness of the available literature is the unavailability of primary, firm-level data, particularly in Pakistan. A lot of the past studies are based on secondary data or macro-level data, which is unable to explain the micro-level dynamics and operational realities of SMEs. This disconnection limits the possibility of creating context-specific understanding and policy implications that can be applicable to local business contexts. Also, there are regional differences within Pakistan, like between the largest commercial centres in Pakistan, like Lahore and

Karachi, which have not been adequately studied. These cities vary greatly in regard to infrastructures, institutional structures and market dynamics which might determine the intensity and the orientation of the relations being studied.

To fill these gaps, the current research study suggests a detailed research model, combining the financial inclusion, green growth, and environmental sustainability as independent variables, firm performance as the dependent variable, and institutional quality as a mediator. The model attempt to offer a more detailed view into the interaction of these variables to impact on the performance of SMEs in Pakistan. In particular, the performance of firms is likely to increase because of the benefits of financial inclusion that increase the access to capital and financial services, and the benefits of green growth and environmental sustainability that are likely to increase through efficiency gains, innovation, and market differentiation. These relationships are hypothesized to be mediated by institutional quality which help in enabling or limiting the successful use of financial and environmental resources.

This study has three-fold objectives. First, it seeks to explore the direct impact of financial inclusion on green growth and environmental sustainability on the firm performance of SMEs. Second, it aims at exploring the mediating effect of institutional quality in developing these relationships. Third, the study provides comparisons of these effects between two large cities Lahore and Karachi to understand the possible regional changes in the impact of institutional and economic environment. Through the achievement of these goals, the research gives a comprehensive investigation of the factors that determine the performance of SMEs in Pakistan.

This research is important because of its theoretical, empirical, and practical input. Theoretically, the research enhances the current literature by considering institutional quality as a key mediating variable, instead of a marginal variable. This is a strategy that builds on the conventional models of firm performance by emphasizing the interplay of financial, environmental, and institutional aspects. The study is empirically valuable as it uses primary data gathered among SME managers hence giving context-specific information that gives the real picture of the challenges and opportunities encountered by businesses in Pakistan. The fact that the regional comparison is included also adds to the strength and applicability of the results.

Practically, the research is of great benefit to policy makers, financial institutions and managers of SMEs. To policy makers, the results underline the importance of ensuring that institutional frameworks are strengthened in order to maximize the effectiveness of financial inclusion and sustainability programs. In the case of financial institutions, the study notes the value of creating inclusive financial products which have the backing of sound regulatory settings. To SME managers, the study highlights the importance of combining financial strategies with sustainable business practices coupled with the realization of the impact of institutional conditions in the development of the performance results.

To sum up, although the importance of financial inclusion and green growth as the driving forces behind the development of SMEs has gained worldwide recognition, the effect of these two factors on the performance of firms cannot be fully harnessed without the influence of institutional quality. The current study fills this important gap in that the framework allows an in-depth study of SME performance in emerging economies. The results are likely to add not just to the academic discussion, but also to the development of effective policies and strategies, which can help Pakistan achieve sustainable and inclusive economic growth.

## LITERATURE REVIEW

### Financial Inclusion and Performance

Financial inclusion has become a key factor to firm-level performance especially among the SMEs in the developing economies. It is defined as the accessibility and availability of formal financial services including credit, savings, insurance and digital payments to businesses and individuals. In the case of SMEs, financial resources are a key element that facilitates operational growth, the adoption of new technology, and the growth based on innovation (Demirgüç-Kunt et al., 2022). There has always been empirical evidence indicating that more acceptable firms operationally are more productive, more profitable, and less vulnerable to economic shocks (Beck et al., 2009). Financial inclusion and firm performance are positively related which can be attributed to better capital allocation and less liquidity constraint. Availability of credit enables SMEs to invest in productive resources, increase market penetration, and adopting modern technologies, which increases the efficiency of operations (Ozili et al., 2023). Furthermore, having access to insurance and savings instruments supports risk management by increasing the ability of firms to withstand uncertainties, which is enabled by financial inclusion (Hussain et al., 2021).

Nevertheless, the financial inclusion does not have a uniform effect on the performance of firms. An increasing literature notes that the success of financial inclusion is highly context-dependent and that regulatory quality, institutional stability, and governance structures are crucial factors (Ayyagari et al., 2016). In a setting where institutions are weak, corruption, and there are ineffective regulations, financial accessibility may fail to lead to better firm performance through misallocation of resources and higher transaction costs (Chauvet & Jacolin, 2015). This implies that financial inclusion cannot be implemented effectively without the support of other institutions and that financial inclusion is incomplete.

### Green Growth and Firm Performance

Green growth has attracted much interest as a strategic solution that incorporates economic growth with the environmental sustainability. It focuses on resource efficiency and minimized environmental impact and implementation of environmentally-friendly technologies that lead to business competitiveness in the long term (OECD, 2023). Green growth strategies can be used to improve the performance of SMEs by lowering the cost of operations, promoting energy efficiency, and boosting the brand image in environmentally friendly markets (Ling Guo et al., 2017). Green practices assist firms to maximize resource use, conserve wastage and save on energy hence saving them substantial costs. Green innovation also contributes to the creation of new products and services, which enables the firms to enter new markets and be unique compared to their rivals (Rehman et al., 2021). Empirical research shows that the financial performance and sustainability over the long term of firms involved in green growth practices are higher (Ferreira et al., 2024).

Nonetheless, SMEs have significant constraints to realizing green growth strategies. The cost of initial investment, technical incompetence and the inadequacy of green financing are some of the impediments that obstruct the application of sustainable measures (Chien et al., 2022). Moreover, the complexities involved in regulations and the lack of institutional support may tend to dishearten SMEs to invest in technologies that are environmentally friendly. These issues point to the fact that, although green

growth can enhance the performance of firms, the success of any green growth depends on the supportive institutional and policy environment.

### **Environment Sustainability and Performance of Firm**

Green sustainability has emerged as a key asset of the contemporary business strategic approach, especially within the sectors that have a high resource usage like manufacturing, textile and energy. It consists in the implementation of measures, which reduce the impact on the environment, save natural resources and guarantee ecological balance in the long-term. Companies that incorporate sustainability toward the environment tend to enjoy better efficiency, lower costs and competitiveness in the international markets (Lankoski, 2000). The resource-based view supports the notion that a firm can gain a competitive advantage through sustainable practices as the relationship between environmental sustainability and firm performance is supported by the resource-based view. Firms are able to cut down on operating costs and enhance profits through waste reduction and enhanced energy efficiency (Haleem, 2022). Moreover, more investors, customers, and partners attracted to environmentally friendly companies due to the focus on sustainability and enhance their market presence (Kim et al., 2020).

The ramifications of environmental sustainability on performance are not always so clear, however. According to some studies, the sustainability initiatives outcomes might not be seen quickly and may require considerable initial investment (Cubas-Díaz et al., 2018). Without proper support, sustainable practices may not be an easy task to embrace especially in SMEs that have limited financial and technical resources. This confirms the necessity of institutional frameworks that make it easier to embrace environmental sustainability and increase its implications on firm performance.

### **Institutional Quality**

Institutional quality is a well-known key to the prosperity and success of the economy and business in general. It includes the efficiency of laws, regulations, governance systems and enforcement systems that determine the business environment (North, 1990). Good quality institutions decrease the degree of uncertainty, increase transparency and fair competition, thus making firms to operate efficiently and sustainably grow (Acemoglu & Robinson, 2019). Institutional quality is crucial in the context of SMEs as it helps to gain access to financial resources and adopt sustainable practices. Good institutions are associated with a predictable regulatory framework that makes it easier to invest, innovate, and start businesses (Kaufmann et al., 2009). They also lower the transaction costs and eliminate the risks of corruption and change of policies, a typical problem in the developing economies.

On the other hand, poor institutional structures may be a big drag on the performance of firms. Problems like bureaucratic inefficiencies, absence of enforcing the policies, and corruption may raise the cost of doing business and deter investment (Memon et al., 2019). Even firms that have access to financial resources can have difficulties in achieving optimal performance, in such environments because of structural inefficiencies. Thus, institutional quality is not a background factor but a key outcome of success of firms.

## Intermediary status of Institutional Quality

The relationship between financial inclusion, green growth, environmental sustainability, and the performance of the firms are becoming more contextualized in terms of the quality of the institutions. Institutional quality, instead of being a direct determinant, is a mediating process and it influences the efficacy of financial and environmental interventions. To begin with, institutional quality enhances the financial inclusion-firm performance relationship by making sure that the financial resources are distributed in an efficient manner and used in an effective way. In good institutional settings, companies tend to invest the financial resources in productive projects which results in better performance results (Thathsarani et al., 2023). Conversely, weak institutions can lead to misappropriation of funds and less effects of financial inclusion.

Second, green growth strategies can be implemented successfully due to an institutional quality. Favorable regulatory systems, financial incentives, as well as policy stability, can influence firms to be environmentally sustainable. The absence of such an institutional support can mean that the SMEs remain unmotivated or unable to make green technologies investments (Batool et al., 2025). Third, institutional quality increases the effectiveness of environmental sustainability in improving the performance of firms by establishing an environment in which sustainable practices are rewarded via market mechanisms and through compliance with the regulations. Companies that are based in robust institutional settings have an advantage to harness sustainability efforts towards competitive advantage (Bhattacharyya & Khan, 2023). Therefore, institutional quality is a key enabler, which enhances the positive impacts of financial inclusion, green growth and environmental sustainability on firm performance. This is a significant theoretical contribution of the current study.

## HYPOTHESIS

**H1:** There is an association among the constructs Financial Inclusion, Green Growth, Environmental Sustainability, Institutional Quality, and Firm Performance.

**H2:** There is a significant impact of Financial Inclusion on Firm Performance.

**H3:** There is a significant impact of Green Growth on Firm Performance.

**H4:** There is a significant impact of Environmental Sustainability on Firm Performance.

**H5:** There is a significant mediating role of Institutional Quality among Financial Inclusion and Firm Performance of SMEs.

**H6:** There is a significant mediating role of Institutional Quality among Green Growth and Firm Performance of SMEs.

**H7:** There is a significant mediating role of Institutional Quality among Environmental Sustainability and Firm Performance of SMEs.

**H8:** The relationship between the independent variable and dependent variable is significantly different between the cities Lahore and Karachi.

**H9:** Firm Size, Industry Type, Capital Structure, Age of the Firm, Economic Environment, and Regulatory Environment have a significant impact on Firm Performance, controlling for the effects of Financial Inclusion, Green Growth, Environmental Sustainability, and Institutional Quality.

## METHODOLOGY

The current research is based on a quantitative research paradigm based on the positivist research paradigm, which supposes that the variables may be measured objectively and tested empirically. It uses a deductive design to test the hypothesized relationships amidst financial inclusion, green growth, environmental sustainability, institutional quality and performance of firms. The research is centred around the Small and Medium Enterprises (SMEs) within Pakistan and within two major economic centres of Lahore and Karachi in order to take into account possible regional differences in the institutional and economic environment.

The target population SME managers and owners since they are directly engaged in making strategic decisions and they have pertinent information about the operations of the firm. The main data collection tool is a structured questionnaire, which guarantees consistency and reliability of the answers. The sampling method is non-probability and a sample size of 480 respondents is taken which is deemed sufficient to carry out structural equation modeling and multivariate analysis. Questions in the questionnaire are based on the validated scales used in previous researchers to have content validity, and measured on five points Likert scale between strongly disagree and strongly agree.

The important constructs of the research are the financial inclusion, green growth, environmental sustainability, institutional quality, and firm performance. Financial inclusion is gauged by access to financial services like credit, and banking services. The green growth and environmental sustainability are evaluated by engaging in environmentally friendly practices and operations which are resource efficient. Institutional quality is measured in terms of regulatory effectiveness, governance as well as policy support whereas firm performance is measured in terms of financial and non-financial. Other variables that are considered as control variables include firm size, industry type, capital structure, firm age, economic environment and regulatory environment to take into consideration outside factors that affect firm performance.

Structural Equation Modeling (SEM) is used to perform data analysis and to examine a number of relationships between latent variables simultaneously. It involves the analysis of reliability in terms of Cronbach alpha and composite reliability and validity is analyzed using factor loading and average variance extracted. The direct relations between variables are tested by the help of the structural model and the mediation analysis is carried out to determine the role of institutional quality. Further, multi-group analysis is carried out to ensure a comparison of differences between Lahore and Karachi to understand regional differences. This methodological technique provide strong, valid and thorough analysis of the proposed research model.

## DATA ANALYSIS

### Descriptive Statistics

Descriptive statistics were calculated to get a feel of how the data is distributed and what the central tendency of the data is. Below the results are described.

**Table 1.**  
**Descriptive Statistics**

Variable	Mean	Std. Deviation	Minimum	Maximum
Financial Inclusion (FI)	3.78	0.64	1.50	5.00
Green Growth (GG)	3.92	0.58	1.80	5.00

Environmental Sustainability (ES)	3.85	0.61	1.60	5.00
Institutional Quality (IQ)	3.70	0.67	1.40	5.00
Firm Performance (FP)	3.88	0.62	1.70	5.00

All constructs have a mean of between 3.70 and 3.92 which implies that the respondents are mostly in agreement that they have financial inclusion, sustainability practices and institutional quality in their respective firms. All of the standard deviation values are less than 1 which indicates that there is not a lot of variability and there are similar responses among the participants. This is to prove that the data is stable and can be used to perform additional statistical analysis.

### Analysis of Reliability and validity

Cronbachs Alpha, Composite Reliability (CR) and Average Variance Extracted (AVE) were used to determine the reliability and validity of the constructs.

**Table 2.**  
**Reliability and validity.**

Construct	Cronbach Alpha	Composite Reliability	AVE
FI	0.82	0.87	0.62
GG	0.85	0.89	0.65
ES	0.83	0.88	0.63
IQ	0.86	0.90	0.66
FP	0.84	0.88	0.64

The values of all Cronbach Alpha are greater than the suggested value of 0.70, and this proves the internal consistency reliability. Composite Reliability values: The values of Composite Reliability exceed 0.80 which implies that the construct reliability is good. Also, all constructs have a value of AVE above 0.50, which confirms convergent validity. On the whole, these findings testify to the fact that the measurement model is valid and reliable.

### Correlation Analysis

Correlation analysis was done to analyze relationship between variables and identify multicollinearity.

**Table 3.**

**Correlation Matrix**

Variables	FI	GG	ES	IQ	FP
FI	1				
GG	0.52	1			
ES	0.48	0.55	1		
IQ	0.50	0.53	0.49	1	
FP	0.56	0.61	0.58	0.63	1

The independent variables are all positively correlated with firm performance implying that the higher the financial inclusion, green growth, environmental sustainability and institutional quality, the better the performance. All the correlation values are less than 0.80 which indicates that there are no problems with multicollinearity. The most important is institutional quality which has the **strongest correlation with firm performance (r = 0.63)**.

### Regression Analysis (Direct effects)

A multiple regression analysis was done to examine the direct impacts of independent variables on firm performance.

**Table 4.**  
**Regression Results**

Hypothesis	Path	Beta	t-value	p-value	Result
H2	FI → FP	0.24	4.12	0.000	Supported
H3	GG → FP	0.31	5.20	0.000	Supported
H4	ES → FP	0.27	4.65	0.000	Supported
H4	IQ → FP	0.35	6.10	0.000	Supported

The regression findings reveal that all the independent variables significantly positively affect performance of the firms. The beta coefficient (0.35) of institutional quality is the highest one, which implies that it is the most effective predictor of firm performance. The effect of green growth is also high, then the environmental sustainability, and financial inclusion. These results validate the view that financial and environmental factors have a significant contribution to the performance of the SMEs.

**Mediation Analysis**

Institutional quality was tested using bootstrapping to select the indirect effects in the process of mediation analysis.

**Table 5.**  
**Mediation Results**

Hypothesis	Relationship	Indirect Effect	t-value	p-value	Result
H5	FI → IQ → FP	0.12	3.45	0.001	Supported
H6	GG → IQ → FP	0.15	4.10	0.000	Supported
H7	ES → IQ → FP	0.13	3.70	0.000	Supported

The mediation analysis indicates that the institutional quality plays a significant role in mediating the relationship between the financial inclusion, green growth, environmental sustainability and firm performance. The considerable indirect impacts attest to the fact that these variables not only affect the performance of firms directly, but also through the institutional mechanisms. This indicates the importance of quality in the institutions to increase the effectiveness of financial and sustainability strategies.

**Multi Group Analysis (Lahore vs Karachi)**

Multi-group analysis was done to determine the difference between Karachi and Lahore SMEs.

**Table 6.**  
**Multi-Group Analysis**

Relationship	Lahore Beta	Karachi Beta	Difference	Result
FI → FP	0.20	0.29	Significant	Supported
GG → FP	0.28	0.36	Significant	Supported
ES → FP	0.24	0.32	Significant	Supported

The findings reveal that, in Karachi the relationships between independent variables and firm performance are stronger than in Lahore. This implies that financial inclusion and sustainability practices are more useful to SMEs in Karachi, probably because of a better institutional structure and economic environment. The results validate the fact that there are geographical variations in the effectiveness of these factors.

**Control Variables Analysis**

To determine their effect on the performance of firms, there were control variables.

Table 7.

**Control Variables**

Variable	Beta	p-value	Result
Firm Size	0.18	0.002	Significant
Industry Type	0.12	0.015	Significant
Capital Structure	0.10	0.020	Significant
Age of Firm	0.08	0.045	Significant
Economic Environment	0.21	0.000	Significant
Regulatory Environment	0.25	0.000	Significant

Each of the control variables has a large impact on the performance of a firm. The most significant impacts are on regulatory environment and economic environment, which implies that the external conditions are the primary determinants of SME outcomes. Firm size, and industry type also add to the differences in performance, which confirm that the organizational characteristics should be put into consideration when examining firm performance.

## DISCUSSION OF FINDINGS

This study aimed to analyze how financial inclusion, green growth and environmental sustainability influence firm performance, with an inclusion of the institutional quality as mediating variable in the SMEs in Pakistan. The results are very empirical and give valuable theoretical and practical information. This part discusses the interpretation of the findings with references to existing literature and the general implications.

The results affirm that increasing the inclusion of financial institutions positively and significantly affects the performance of firms as Hypothesis 2 posits. This finding can be compared to previous studies, which indicate that having access to financial services allows firms to invest in productive assets, increase their operations, and improve their innovation capacity (Demirguc-Kunt et al., 2022; Beck et al., 2010). With enhanced access to credit and financial resources, SMEs can better manage their cash flows, reduce risks, and leverage the growth opportunities (Ozili et al., 2023). Nonetheless, financial inclusion has a relatively small impact on performance as compared to other predictors, which means that financial access does not ensure better performance. This conclusion is in line with other research that highlights the importance of favorable institutional conditions to the success of financial inclusion (Ayyagari et al., 2016). Financial resources can be poorly used in weak regulatory systems and thus have fewer potential effects on the firm outcomes.

The findings also indicate that there is a strong and significant positive impact of green growth on firm performance as it supports Hypothesis 3. This implies that SMEs that embrace environmentally friendly operations and processes that utilize resources effectively enjoy increased efficiency in their operations and minimization of costs. These results align with the accumulating body of research that has found the green innovation to be one of the sources of competitive advantage and profitability in the long term (Lajmi & Shiri, 2025; Yun et al., 2015). Green growth has allowed companies to maximize utilization of resources, cut down on wastage and explore the new markets where sustainability is a priority. The fact that the influence of green growth is relatively more impressive than the financial inclusion shows that the importance of environmental strategies as determiners of business success grows.

Hypothesis 4 is also supported as environmental sustainability is also found to significantly affect firm performance positively. This observation helps prove the thesis that sustainable practices can result in increased efficiency, cost reduction, and the

corporate image (Hussen, 2012). Companies that have embraced sustainability in their activities have a greater chance of attracting green consumers and investors, and thus become more competitive in the market (Tereshchenko et al., 2023). Nonetheless, the impact of environmental sustainability is a bit less than that of green growth, which indicates that on the one hand, sustainability programs are positive, and on the other hand, their economic contribution may not be so immediate because of the costs associated with their implementation (Cubas-Díaz et al., 2018). This difference suggests that green growth initiatives that are proactive can provide more short-term gains in terms of performance than larger sustainability initiatives. One of the key contributions of this study is its ability to shed light on the importance of institutional quality which, in fact, has the most direct impact on firm performance, which is in line with Hypothesis 4. This highlights the paramount significance of governance, regulations and policy stability in determining business results. Institutional quality leads to less uncertainty, transparency, and efficient resource allocation, which in turn help firms to operate successfully (Acemoglu & Robinson, 2019; Kaufmann et al., 2009). These results are in line with other past studies which have shown that well established institutions greatly enhance economic performance and ease business expansion (North, 1990). Findings indicate that the institutional quality is not only a contextual factor but a key to the success of firms.

The mediation analysis gives a more insight into the relationships between variables supporting Hypotheses 5, 6 and 7. The results indicate that the institutional quality is an important mediator between financial inclusion and green growth, environmental sustainability and firm performance. This means that the quality of financial and environmental projects depends on the quality of the institutional structures. That is, institutional quality increases the effectiveness of firms to utilize financial resources and adopt sustainable practices. These findings are consistent with the recent literature that shows that the impact of financial inclusion and sustainability is greater in an environment with a robust system of governance and regulations (Thathsarani et al., 2023; Chauvet & Jacolin, 2017).

Theoretically, the mediation effect is in alignment with the institutional theory which states that performance in organizations is influenced by regulatory and normative frameworks under which firms are operating. Weak institutions offer a lack of stability and legitimacy, and as a result, firms can be aligned in their strategies with the external expectations. Moreover, resource dependence theory elaborates that, companies depend on external resources like finance and regulatory assistance that are aided by institutional structures. The results of this study combine these views by showing that the quality of the institutions is the linking factor between financial inclusion and sustainability practices and the performance of the firms.

The multi group analysis shows that there exist some important differences between SMEs in Lahore and Karachi which indicates that Hypothesis 8 is true. The findings suggest that the effects of financial inclusion, green growth, and environmental sustainability on the performance of firms are stronger in Karachi than in Lahore. This implies that the effectiveness of these factors is determined by regional variation of institutional quality, infrastructure and economic conditions. Karachi is a large business and financial center and has easy access to financial services, institutional facilities and higher levels of development in markets. Such conditions increase the potential of SMEs to use the financial and sustainability strategies to perform better. The result is validated by literature on the importance of regional context in influencing the outcome of business (He, 2025).

The discussion of control variables further substantiates Hypothesis 9 which states that firm size, industry type, capital structure, age of the firm, economic environment and regulatory environment have a significant effect on firm performance. Larger companies are likely to enjoy economies of scale and more resources availability, whereas competitive forces and growth opportunities are defined by the industry specificities. It is strongly affected by the economic and regulatory environment, especially, which is why the significance of macro-level conditions in determining the performance of firms is important. These results support the thesis that the performance of firms is dictated by a set of internal capabilities and the external environment. In general, the results of this research give a holistic knowledge on the performance of SME in Pakistan. Financial inclusion, green growth and environmental sustainability are key drivers but their effectiveness is boosted greatly by institutional quality. The most important factor, both as a direct predictor and as a mediator, is institutional quality that allow the firms to successfully use the financial and environmental resources. This combined viewpoint deals with the weakness of the past researches that concentrated only on direct relationships.

To sum up, SME performance can be enhanced through a holistic solution that involves access to financial resources, sustainability, and effective institutions. The policymakers should pay attention to enhancing the quality of institutions in order to establish an enabling environment to SMEs. Financial institutions must improve the availability of the financial services and the SMEs must incorporate the concept of sustainability in their operations. With the alignment of these factors, it can be concluded that sustainable growth of businesses and long-term economic development can be attained in emerging economies like Pakistan.

## **CONCLUSION**

This study aimed at investigating the relationship between financial inclusion, green growth and environmental sustainability and performance of SMEs in Pakistan taking institutional quality as a mediating factor. The results give a clear and systematic insight into the interaction and impact of these variables on firm-level performance given a developing economy situation. The findings endorse that financial inclusion, green growth and environmental sustainability are all positively correlated with firm performance. Green growth illustrates a relatively more powerful impact among them, which indicates that companies with resource-efficient and environmentally friendly strategies would be in a better place to attain operational efficiency and competitive advantage. The contribution made by environmental sustainability is also positive, but seems to have a more gradual effect, as sustainability investments are long-term. Financial inclusion is also important, although its impact is rather moderate, meaning that having access to financial resources is not enough to guarantee a better performance of firms without support systems.

The best result of this study is that institutional quality plays the most crucial role. The institutional quality does not only exhibit the greatest direct impact on the performance of firms, but also moderates the relationship between financial inclusion, green growth, environmental sustainability, and firm performance to a significant degree. This accentuates that the quality of governance, regulatory frameworks, and policy implementation is crucial to the effectiveness of financial and environmental strategies. Put simply, despite the excellent financial access or sustainability practices, the institutional environment not providing the best outcomes in case it is weak, unstable, or inefficient. The study also finds significant regional variations between

Lahore and Karachi. The findings show that the correlation between the independent variables and the performance of firms are stronger in Karachi and, therefore, the effectiveness of the financial inclusion and sustainability practices is higher under the conditions of better institutional structures, infrastructure, and market conditions. This result supports the role of the contextual factors in the formation of firm performance and indicates that the policy interventions are not to be based on a national strategy but on regions.

Besides the key variables, the control factor analysis also supports the conclusions. The size of firms, the type of industry, capital structure, the age of the firm, economic environment, and regulatory environment have significant effects on the performance of firms. This proves that the performance of SMEs is multidimensional and cannot be attributed to a factor. Rather, it is a product of a combined effect of both the internal firm factors and external environmental factors. Practically speaking, the conclusions of the given study have significant implications. The policymakers need to focus on enhancing the quality of the institutions through reinforcing the governance mechanisms, minimizing bureaucratic inefficiency, and stability in the policies. In the absence of such reforms, the attempts to improve the financial inclusion and achieve sustainability will be of little use. Banking institutions must aim at increasing accessibility in the credit market and come up with inclusive finance products to be specific to SMEs. Simultaneously, SME managers must no longer afford to operate in the old-fashioned business style where they fail to incorporate sustainability and green growth policies in their business processes in order to be competitive in the dynamic markets.

The study has limitations irrespective of its contributions. This is because the data is cross-sectional and therefore cannot be used to observe dynamic changes over time. Also, self-reported data can bring about response bias. Longitudinal designs and industry-specific analysis with inclusion of other variables like technological innovation and digital transformation would be the way forward in future studies to improve the knowledge base on SME performance. On the whole, this study is a holistic and integrated resource of comprehending the determinants of SME performance in Pakistan. It is a clear manifestation of the fact that financial inclusion and sustainability practices are relevant, although their success greatly depends on the quality of institutions. The results highlight that sustainable economic development in new economies must be based on a balanced strategy that entails the integration of financial access, environmental responsibility and good institutional support.

## DECLARATIONS

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