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Impact of Entrepreneurial Exposure on SME's Environmental Performance: A Moderated-Mediation Analysis

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Abstract

The purpose of this research is to find, explore, and understand the intricate dynamics between entrepreneurial exposure and their ultimate impact on the environmental performance of Small and Medium-sized Enterprises (SMEs). In an era where environmental sustainability has become a pressing concern for businesses worldwide, it is crucial to identify the factors that can enhance the environmental performance of SMEs, which are a significant segment of the global economy. Using a quantitative methodology, the study proposes and tests a model that examines the predictors of SME's environmental performance. A survey was conducted, and 358 employees working in SME's of Pakistan participated. The model of measurement and structural model were analyzed by the use of SmartPLS software. The findings demonstrate a positive relationship between entrepreneurial exposure (EEP) and SME's environmental performance (EP). This study also reveals the mediating role of green entrepreneurial orientations (GEO) in the relationship between EEP and SME's environmental performance. Furthermore, study also investigate the moderating role of green absorptive capacity. Overall, the implementation of said findings fosters employee green conduct and promotes SME's environmental performance (EP). The research model presented in this study addresses a significant gap in the existing literature. Firstly, this research investigates the relationship between entrepreneurial exposure on SME's environmental performance. The environmental performance of SMEs can be significantly enhanced by adopting green entrepreneurial exposure. Secondly, this study also addresses the gap by investigating the mediating role of green entrepreneurial orientation between entrepreneurial exposure and SME's environmental performance. Lastly by exploring the moderating role of green absorptive capacity between green entrepreneurial intention and between entrepreneurial exposure and green entrepreneurial orientation. The gap is supported by Makhloufi et al., (2023); Sun et al., (2023); Alvarez et al., (2006). Such resources enable SMEs to effectively coordinate their business activities, thereby playing a crucial role in enhancing organizational performance (Pasaribu et al., 2021).

Keywords: Entrepreneurial Exposure, SME's Environmental Performance, Entrepreneurial Orientation, Green Absorptive Capacity

1. Introduction

Environmental issues are gaining significant importance among various corporate stakeholders, including consumers, shareholders, potential investors, creditors, regulators, employees, and the general public (Bringer & Benforado, 1994). As Leonidou et al., (2017) stated that the rise in environmental issues is posing extreme threats to human health, economic growth, and ecological systems. In response to the growing wave of environmental issues, governments and businesses are increasingly prioritizing sustainable production and integrating sustainable practices into their core business activities (Das & Rangarajan, 2020; Liu et al., 2016). Similarly, Hariram et al., (2023) and Indarto et al., (2023), discussed the ongoing environmental awareness for a sustainable environment. They highlighted that the role of entrepreneurship in enhancing environmentally responsible business practices has become immensely prominent. Furthermore, it is being said that sustainable entrepreneurship is an emerging field that intersects both business as well as environmental science which aims at economic prosperity while dealing with environmental challenges (Daraojimba et al., 2023; Fahmi et al., 2023; Mosteanu, 2023; Audi et al., 2024).

The term "Green" is seen as a philosophy and an operational approach that boasts the ecological efficiency of an operation, minimizes the negative environmental impact of a service, and maintains financial performance (Garza-Reyes, 2015). Global concern and societal pressure effects different organizations to pay heed to green and sustainable business (Leonidou & Leonidou, 2011). According to Bailey et al., (2018), green consumption has become the focal point for the business coomunity, academicians, and researchers. A green business can be defined as any type of comapny that plays a part in green initiatives to ensure that every process, product, and manufacturing activity adequately copes with the existing environmental problems apart from preserving its profit (Rauter et al., 2017). According to Cekanavicius et al., (2014), green business deals with any business that follows the standards of environmental sustainability in its core management, its steps towards the usage of sustainable resources, and its struggle to minimize the negative environmental effects of its actions or activities.

There is a global consensus in the literature on Small and Medium-sized Enterprises' responsibility towards global pollution, resource consumption, and waste generation (Chen et al., 2014; De et al., 2020; De Sousa Jabbour et al., 2020). Small and Medium-sized Enterprises (SMEs) play a pivotal role in the manufacturing of goods and services, as they cover 95% of all enterprises, as well as approximately two-thirds of employment across the Organization for Economic Co-operation and Development countries (Organization for Economic Co-operation and Development, 2018). In most of the developing nations, Small and Medium-sized Enterprises account for the largest ratio of well-developed and established businesses (Saleh & Ndubisi, 2006). According to Aboelmaged and Hashem (2019), SMEs' large volume can immensely contribute as a central driver of green innovation that reduces the environmental harm caused by business activities.

Firstly, this research investigates the relationship between Entrepreneurial exposure and SME's Environmental Performance. The environmental performance of SMEs can be significantly enhanced by adopting green entrepreneurial exposure. Secondly, this study also addresses the gap by investigating the mediating role of Entrepreneurial Orientation between Entrepreneurial exposure along with SME's Environmental Performance. Lastly by exploring the moderating role of green absorptive capacity between entrepreneurial exposure and green entrepreneurial orientation. The gap is supported by Makhloufi et al., (2023); Sun et al., (2023); Alvarez et al., (2006). Such resources enable SMEs to effectively coordinate their business activities, thereby playing a crucial role in enhancing organizational performance (Pasaribu et al., 2021; Ali et al., 2023).

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In the face of escalating environmental challenges, the role of businesses in promoting sustainable practices has become paramount. Among corporate stakeholders, which include consumers, investors, regulators, and the general public, there is an increasing demand for businesses to address environmental concerns (Bocken et al., 2014). SMEs, which consist of an immense portion of global enterprises and employment, are crucial players in this landscape. They have the potential to drive green innovation and mitigate environmental degradation (Revell et al., 2010; Johnson & Schaltegger, 2016; Audi & Ali, 2023). However, there is a magnificent gap in the understanding process of how entrepreneurial exposure influences the environmental performance of SMEs.

This research aims to investigate the relationship between entrepreneurial exposure (independent variables) and SMEs' environmental performance (dependent variable). The study further explores the moderating role of green absorptive capacity and the mediating role of green entrepreneurial orientation.

Green absorptive capacity refers to a company's ability to recognize, assimilate, and apply new external green knowledge, enhancing its capacity to innovate sustainably (Cohen & Levinthal, 1990; Zahra & George, 2002). Green entrepreneurial reflects the commitment and motivation of entrepreneurs to engage in environmentally responsible business practices, while green entrepreneurial orientation encompasses the strategic posture and behavioral tendencies that emphasize sustainable practices (Kirkwood & Walton, 2010; Lumpkin & Dess, 1996)

The research hypothesizes that entrepreneurial exposure positively impacts SMEs' environmental performance. Furthermore, it posits that green absorptive capacity moderates this relationship by enhancing the effectiveness of exposure in improving environmental performance. Additionally, green entrepreneurial orientation is expected to mediate the relationship, channeling the effects of exposure into concrete environmental outcomes (Urban & Kujinga, 2017; Wales et al., 2013; Ashiq et al., 2023).

By addressing these relationships, this research seeks to bridge a critical gap in the literature on sustainable entrepreneurship. It aims to provide important insights for policymakers and business leaders on how environmentally responsible practices can be implemented among SMEs through targeted entrepreneurial exposure, moderated by green absorptive capacity and mediated by green entrepreneurial orientations.

2. Literature Review

2.1. The theoretical perspective of Natural Resource-Based View (NRBV) Theory

Barney (1991) proposed the Natural Resource-Based View (NRBV) theory, which emphasizes that firm-specific resources and capabilities, including knowledge resources gained from entrepreneurial exposure, can have valuable addition to steady competitive advantage. In the context of this study, NRBV theory provides a lens through which to explore how the knowledge and skills acquired through entrepreneurial exposure can be leveraged to develop and deploy environmentally sustainable practices within SMEs, ultimately impacting their environmental performance.

2.2. Entrepreneurial Exposures and SMEs' Environmental Performance

Entrepreneurial exposure refers to someone who has personal experiences related to entrepreneurship, such as having family members who were entrepreneurs or having worked in a small or newly established business (Krueger, 1993; Peterman and Kennedy, 2003; Asif et al., 2023). Specifically, previous entrepreneurial exposure is recognized as a key factor that increases the chances of aspiring entrepreneurs starting their own businesses. This is because it offers valuable learning experiences that shape their understanding of entrepreneurial behavior (Mitchelmore and Rowley, 2010; Kassean et al., 2015; Asim et al., 2021; Audi & Ali, 2023). Hence we hypothesized that.

H1: Entrepreneurial exposure has an impact on SMEs' environmental performance.

2.3. Entrepreneurial Exposure and Green Entrepreneurial Orientation

Entrepreneurial Orientation is specifically a business strategic orientation paying heed to the practices, processes, and activities around which innovation and decisions regarding market entry are based (Lumpkin & Dess, 2005; Elahi et al., 2021). Moreover, The behavior of people can be analyzed by their intentions which come right prior to subsequent behavior (Ajzen, 1991). According to Covin and Lumpkin (2011), entrepreneurial orientation can be defined as a company's behavior toward proactivity and innovativeness in the formation and implementation of new strategies. Moreover, Lumpkin and Dess (1996), argued that keeping in consideration the aim of new product and service development, innovativeness indicates the company's inclination to search for innovative ideas and participate in creative processes. Entrepreneurial orientation has a vital link with an organization's performance. Its influence on innovation and organizational learning capabilities is immense. Entrepreneurial orientation boosts up firm performance by encouraging learning and innovation, which are crucial in dynamic industries. It becomes more agile and responsive to market changes by promoting an entrepreneurial thinking pattern and mindset within a firm (Alegre & Chiva, 2013; Khan et al., 2020; Ali et al., 2021). According to Wang, (2008), entrepreneurial orientation strengthens an organization's ability to learn from both successes and failures. It fosters a culture of continuous betterment and improvement that drives performance gains. Entrepreneurial orientation is essential for promoting both short-tern success and long-term sustainability. Similarly, Entrepreneurial exposure can shape and define attitudes, perceived societal and social norms and perceives control and authority over initiating a business. All these factors unconsciously and indirectly influence organizational performance by promoting entrepreneurial behavior with the firm. Apart from this, the quality of entrepreneurial exposure either positive or negative also plays a crucial role in the subsequent organization's performance (Zapkau et al., 2015; Ali et al., 2020). Hence, we hypothesized that:

H2: Entrepreneurial exposure has an impact on green entrepreneurial orientations.

2.4. Green Entrepreneurial Orientations and SMEs Environmental Performance

The concept of green entrepreneurial orientation (GEO) relies on the core basis of green entrepreneurial theory and green entrepreneurial orientation (Guo et al., 2020; Yasir et al., 2021; Zafar et al., 2022). Luo et al., (2005) discussed the significance of constructive green innovation via accurate allocation of resources that lessens the hazardous impact on the environment. Becker (2010), discussed that green entrepreneurial orientation is comprised of social and innovative orientation. Moreover, GEO may regulate the production of green innovative items that will eventually benefit in boosting sustainable business results (Guo et al.,

2020; Rafique et al., 2020; Hydari et al., 2019). According to OECD (2010), and Huang and Li (2017), green innovation and eco-innovation also have a link with the businesses' contribution towards sustainable growth and development besides growing the competitive advantage of the firm. Hence we hypothesized that.

H3: Green entrepreneurial orientations have an impact on SMEs' environmental performance.

2.5. Mediating Role of Green Entrepreneurial Orientation

Entrepreneurial Orientation is specifically a business strategic orientation paying heed to the practices, processes, and activities around which innovation and decisions regarding market entry are based (Lumplin & Dess, 2005; Abid et al., 2021). Moreover, the behavior of people can be analyzed by their intentions which come right prior to subsequent behavior (Ajzen, 1991; Qaiser t al., 2021). According to Covin and Lumpkin (2011), entrepreneurial orientation can be defined as a company's behavior toward proactivity and innovativeness in the formation and implementation of new strategies. Moreover, Lumpkin and Dess (1996), argued that keeping in consideration the aim of new product and service development, innovativeness indicates the company's inclination to search for innovative ideas and participate in creative processes. Hence, we hypothesized that.

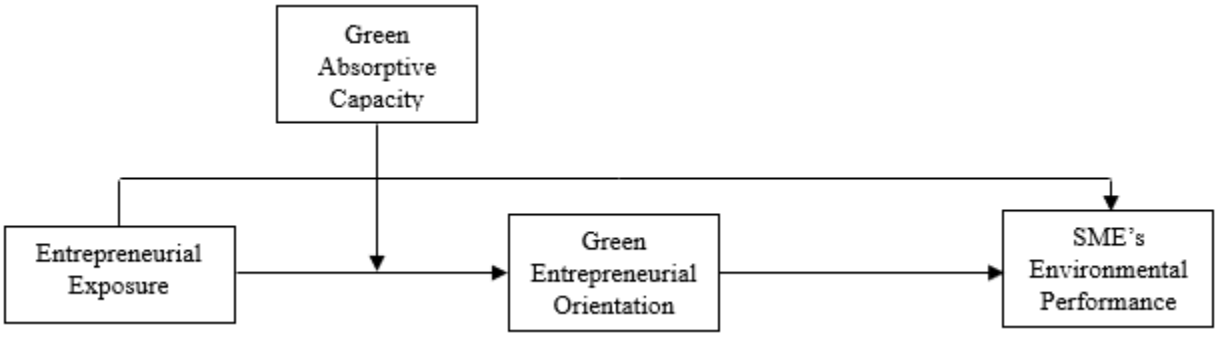
H4: Green entrepreneurial orientations mediate the relationship between entrepreneurial exposure and SMEs' environmental performance.

2.6. Moderating Role of Green Absorptive Capacity

Green absorptive capacity is the potential that enables companies to acheive, process, and place new information paying heed to outside threats and focusing on taking into account environmental business opportunities (Albort-Morant et al., 2018; Asif et al., 2017). According to Engelen et al., (2014), absorptive capacity significantly impacts entrepreneurial orientation and company performance. Sciascia et al., (2014), discussed that high absorptive capacity enhances entrepreneurs' impact on a organization's performance. On the other hand, Hughes et al., (2018), find that green absorptive capacity solidifies the influence of entrepreneurs on SME's innovation performance. Hence, we hypothesized that.

H5: Green absorptive capacity moderates the relationship between entrepreneurial exposure and green entrepreneurial orientations.

2.7. Theoretical Framework



3. Methodology

3.1. Demographic Characteristics

This part presents the demographic profile of the respondents, covering gender, age, experience, and education. After excluding the missing values, the final dataset consists of 358 fully completed questionnaires.

Table 1: Demographic

Demographic	Category	Frequency	Percent (%)
Gender	Male	251	70.1
	Female	107	29.8
Age	21 – 30	48	6.73
	31 – 40	136	29.4
	41 – 50	66	24.1
	51 – 60	181	27.7
	Above 60	68	10.4
Experience	Less than 1 year	59	16.4
	1 – 3	93	25.9
	4 – 6	65	18.1
	7 – 10	97	27
	Above 10 years	44	12.6
Education	Diploma	108	30.1
	Matric	54	15.0
	Intermediate	63	17.5
	Graduate	86	24.0
	Postgraduate	47	13.4

The information presented in Table 1 reveals that this research contains 70.1% of males working as top managers and executives. An important portion of the respondents, approximately 29.4%, fell within the age range of 31 to 40. In terms of their educational

level, 24.0% of the respondents are graduates, indicating a focus on highly qualified professionals. In relation to their work experience, 27% of the respondents had 7-10 years of experience within their respective institutions.

3.2. Descriptive Statistics of Study Variables

The Table given below shows the descriptive statistics of all variables.

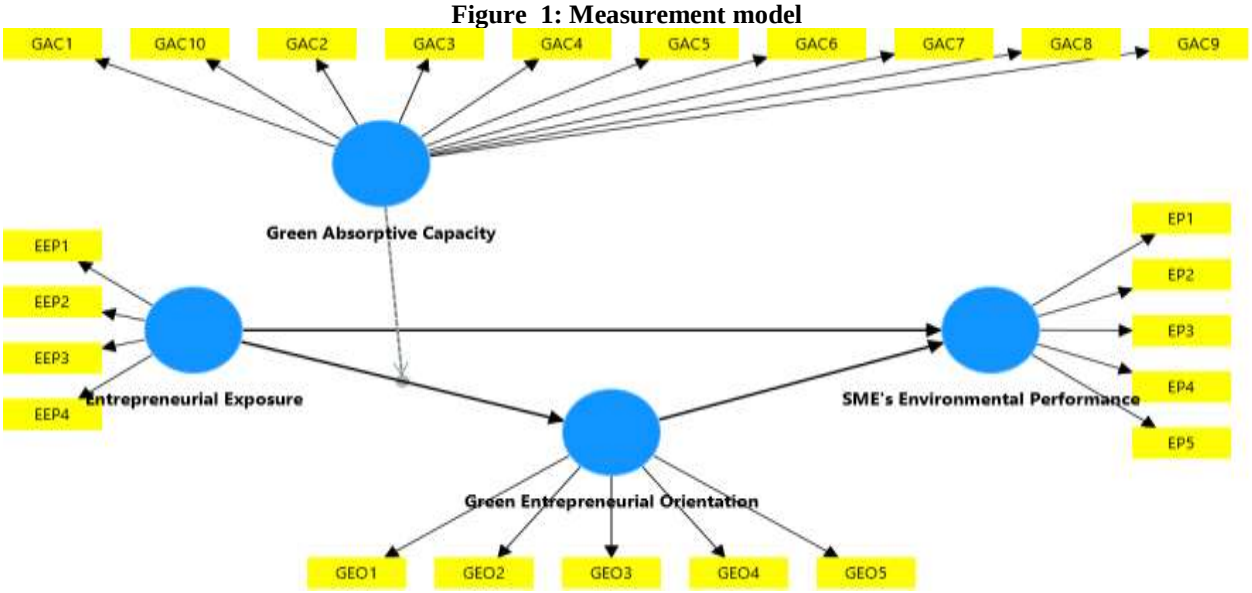
Table 2: Descriptive

Variable	Mean	Std. Deviation	Skewness	Kurtosis
Entrepreneurial Exposure	0.000	1.000	-1.546	1.692
Green Entrepreneurial Orientations	0.000	1.000	-1.436	1.533
SMEs Environmental Performance	0.000	1.000	-1.083	0.782
Green Absorptive Capacity	0.000	1.000	-1.001	0.453

3.3. Measurement Model

In PLS-SEM analysis, a two-stage process (i.e. measurement model and structural model) is performed. The measurement model is the first step of PLS-SEM analysis. In measurement model analysis, outer loadings, reliability, and validity are observed.

Figure 1: Measurement model



3.4. Step-1 estimate factor loadings (λ) with significance

The first step of evaluation is the estimation of factor loadings with significance. Researchers observe the standard loadings of each item against their respective latent variables. For the estimation of loadings (λ) bootstrapping procedure is adopted. Hair et al. (2011) recommended that loading values should be 0.708 or above with a t value of ±1.96 at a 5% significant level. Hair et al. (2017) further suggested that the value of outer loadings between 0.40 and 0.70 should be observed for their contribution to CR and AVE estimates before a judgment is made to delete or hold the indicator. If the deletion of the item(s) gives an increase in the result of CR and AVE, then the item should be eliminated. The item with 0.40 outer loading must be eliminated (Hair et al., 2017). The outer loadings with the significance of each study construct are discussed below.

3.4.1. Assessment of Outer Loadings

The first exogenous composite construct of the study is Entrepreneurial Exposure which is denoted as EEP. Entrepreneurial Exposure is measured through eleven items (i.e. EEP_1, EEP_2, EEP_3 & EEP_4). The range of outer loadings of Entrepreneurial Exposure is 0.904-0.964. The second exogenous composite construct of the study is Green Entrepreneurial Orientations which is denoted as GEO. Green Entrepreneurial Orientations is measured through five items (i.e. GEO_1, GEO_2, GEO_3, GEO_4 & GEO_5). The range of outer loadings of Green Entrepreneurial Orientations is 0. 789-0.912. The third exogenous composite construct of the study is Environmental Performance which is denoted as EP. Environmental Performance is measured through five items (i.e. EP_1, EP_2, EP_3, EP_4 & EP_5). The range of outer loadings of Environmental Performance is 0.737-0.912.

The third exogenous composite construct of the study is Green Absorptive Capacity which is denoted as GAC. Green Absorptive Capacity is measured through ten items (i.e. GAC_1, GAC_2, GAC_3, GAC_4, GAC_5, GAC_6, GAC_7, GAC_8, GAC_9 & GAC_10). The range of outer loadings of Green Absorptive Capacity is 0.780-0.972. The outer loadings with their significant values are provided in Table 3.

3.5. Step-2 Reliability analysis

The second step to evaluate is to estimate the internal consistency. Hair et al. (2017) recommended two major criteria i.e. Cronbach alpha and composite reliability, to check the internal consistency. Reliability talks about an instrument providing the same results when it is employed each time with the same subject and in the same settings. In other words, instruments measure what it is intended to measure consistently.

3.5.1. Cronbach alpha

Table 4.4 demonstrates the Cronbach alpha results and all constructs have above-the-mark alpha scores, the acceptable threshold for Cronbach alpha is ≥ 0.70 (Nunnally & Bernstein, 2010; Kline, 2016) while Hair et al. It shows all variables have good reliability over time.

3.5.2. Composite reliability

Table 4.4 demonstrates the composite reliability results and all constructs have above-the-mark composite reliability scores, resultant value of composite reliability lies between 0 and 1(Hair et al., 2020). It shows all variables have good reliability over time.

Table 3

Indicator	Outer Loading
EEP1	0.909
EEP2	0.934
EEP3	0.964
EEP4	0.904
GEO1	0.859
GEO2	0.889
GEO3	0.912
GEO4	0.902
GEO5	0.789
EP1	0.793
EP2	0.737
EP3	0.907
EP4	0.912
EP5	0.901
GAC1	0.972
GAC2	0.953
GAC3	0.961
GAC4	0.953
GAC5	0.953
GAC6	0.781
GAC7	0.839
GAC8	0.972
GAC9	0.961
GAC10	0.953

Table 4: Measurement Model Results

Latent Variables	Items Retained	Outer Loading	Cronbach Alpha	CR	AVE	Discriminant Validity
Entrepreneurial Exposure	EEP_1, EEP_2, EEP_3 & EEP_4	0.909, 0.934, 0.964, 0.904	0.946	0.948	0.861	Yes
Green Entrepreneurial Orientations	GEO_1, GEO_2, GEO_3, GEO_4 & GEO_5	0.859, 0.889, 0.912, 0.902, 0.789	0.920	0.926	0.759	Yes
SMEs Environmental Performance	EP_1, EP_2, EP_3, EP_4 & EP_5	0.793, 0.737, 0.907, 0.912, 0.901	0.904	0.904	0.728	Yes
Green Absorptive Capacity	GAC_1, GAC_2, GAC_3, GAC_4, GAC_5, GAC_6, GAC_7, GAC_8, GAC_9 & GAC_10	0.972, 0.953, 0.961, 0.953, 0.953, 0.781, 0.839, 0.972, 0.961, 0.953	0.983	0.984	0.868	Yes

3.6. Step-3 validity analysis

Hair et al. (2017) recommended major types of validity analysis to test the measurement model (i.e. discriminant validity). Cheung and Wang (2017) define convergent validity assess how accurately items that measure construct correlate. Hair et al. (2019) states discriminant validity as the degree for which a composite is distinct empirically from remaining composite variables in the structural model. Evaluation of discriminant validity can be derived through three metrics i.e. cross loadings, Fornell-Larcker method (Fornell & Larcker, 1981), and heterotrait-monotrait ratio (HTMT) (Henseler et al., 2015).

3.6.1. Convergent validity

Cheung & Wang (2017) define convergent validity assess how accurately items that measure construct correlate. For checking convergent validity of the M model, outer loadings and AVE are analyzed. AVE is the average value of commonality (square of loadings). In other words, AVE is calculated by taking the square of all outer loadings of a construct and dividing by their number of items (Hair et al., 2019; Hair et al., 2020). The acceptance value of AVE is 0.50 and above. The value 0.50 or above denotes that this construct-explained variance is more than 50%. Table 4 demonstrates the AVE scores and all constructs have above the mark AVE scores. It shows all variables have good validity.

Table 5: Fornell-Larcker validity analysis

Constructs	Entrepreneurial Exposure	Green Absorptive Capacity	Green Entrepreneurial Orientation	SME's Environmental Performance
Entrepreneurial Exposure	0.928			
Green Absorptive Capacity	0.675	0.932		
Green Entrepreneurial Orientation	0.843	0.764	0.871	
SME's Environmental Performance	0.775	0.927	0.833	0.853

Table 6: Heterotrait-Monotrait validity analysis

Constructs	Entrepreneurial Exposure	Green Absorptive Capacity	Green Entrepreneurial Orientation	SME's Environmental Performance
Entrepreneurial Exposure				
Green Absorptive Capacity	0.689			
Green Entrepreneurial Orientation	0.895	0.793		
SME's Environmental Performance	0.835	0.984	0.911	
Green Absorptive Capacity x Entrepreneurial Exposure	0.773	0.642	0.791	0.702

Table 7: Cross loadings validity analysis

Constructs	Entrepreneurial Exposure	Green Absorptive Capacity	Green Entrepreneurial Orientation	SME's Environmental Performance	GAC x EEP
EEP1	0.909	0.538	0.722	0.678	-0.612
EEP2	0.934	0.614	0.765	0.720	-0.702
EEP3	0.964	0.625	0.765	0.745	-0.702
EEP4	0.904	0.716	0.867	0.729	-0.774
EP1	0.697	0.600	0.752	0.793	-0.561
EP2	0.718	0.540	0.673	0.737	-0.536
EP3	0.621	0.915	0.715	0.907	-0.598
EP4	0.618	0.958	0.698	0.912	-0.578
EP5	0.633	0.940	0.694	0.901	-0.565
GAC1	0.625	0.972	0.706	0.893	-0.595
GAC10	0.618	0.953	0.710	0.868	-0.597
GAC2	0.593	0.961	0.676	0.884	-0.546
GAC3	0.617	0.953	0.696	0.854	-0.579
GAC4	0.618	0.953	0.710	0.868	-0.597
GAC5	0.789	0.781	0.854	0.834	-0.771
GAC6	0.515	0.839	0.604	0.760	-0.509
GAC7	0.625	0.972	0.706	0.893	-0.595
GAC8	0.593	0.961	0.676	0.884	-0.546
GAC9	0.617	0.953	0.696	0.854	-0.579
GEO1	0.638	0.669	0.859	0.762	-0.608
GEO2	0.658	0.621	0.889	0.737	-0.578
GEO3	0.885	0.740	0.912	0.763	-0.778
GEO4	0.814	0.711	0.902	0.713	-0.772
GEO5	0.651	0.569	0.789	0.651	-0.567
GAC x EEP	-0.755	-0.644	-0.764	-0.668	1.000

3.6.2. Discriminant validity

Evaluation of discriminant validity can be derived through three metrics i.e. cross loadings, Fornell-Larcker method (Fornell & Larcker, 1981), and heterotrait-monotrait ratio (HTMT) (Henseler et al., 2015).

3.6.3. Fornell-Larcker discriminant validity analysis

To evaluate the discriminant validity, the Fornell-Larcker procedure is adopted at the first level. In the evaluation method of discriminant validity, the AVE square root should be larger than correlation values among other composite constructs in the measurement model (Fornell & Larcker, 1981). Table 4.5 demonstrates the discriminant validity score as per the Fornell-Larcker method. Diagonal values are square root of AVE. All diagonal values are greater than its respective correlation scores. It shows all variables have good discriminant validity as per the Fornell-Larcker method.

3.7. Heterotrait-monotrait discriminant validity analysis

The second evaluation method to test the discriminant validity is the heterotrait-monotrait ratio. Table 4.6 demonstrates the HTMT scores and all constructs HTMT scores do not cross the limit i.e. $HTMT_{0.95}$. It shows all variables have good discriminant validity as per the HTMT ratio method.

3.8. Cross loadings discriminant validity analysis

This is a third technique to assess discriminant validity. Table 7 demonstrates the cross-loading scores and all constructs cross-loadings are higher than the respective cross-loadings in the row. It shows all variables have good discriminant validity as per cross loadings method.

3.9. Structural Model

After measurement analysis, the structural model is analyzed which is as follows.

Step-1 multicollinearity analysis

Multicollinearity is the first step of the analysis of the structural model. Results revealed that there is no issue of collinearity in the data as all values of VIF are less than 3 as per the threshold of Hair et al. (2020). Results are in Table 4.

Table 8: Multicollinearity analysis of the inner model list

Multicollinearity	VIF
Entrepreneurial Exposure -> Green Entrepreneurial Orientation	2.708
Entrepreneurial Exposure -> SME's Environmental Performance	3.461
Green Absorptive Capacity -> Green Entrepreneurial Orientation	1.990
Green Entrepreneurial Orientation -> SME's Environmental Performance	3.461
Green Absorptive Capacity x Entrepreneurial Exposure -> Green Entrepreneurial Orientation	2.517

3.10. Step 2 evaluates the size and significance of path coefficients

After running the algorithm of PLS-SEM, structural model relationship estimates are obtained that represent the path coefficients that show the hypothesized relationship between study variables. PLS path model represent the ordinary least square regression beta coefficients of coefficient values (β) (Ringle et al., 2018). The standardized value of path coefficients falls between -1 and +1. An algorithm of PLS-SEM in SmartPLS was initiated to get the path coefficients for each hypothesized path to examine the strength of direction and association among the paths (Hair et al., 2019). The bootstrapping protocol was used to assess the path coefficient significance (Hair et al., 2017). The following part, demonstrates the direct effect and indirect effect analysis.

Figure 2: Structural model

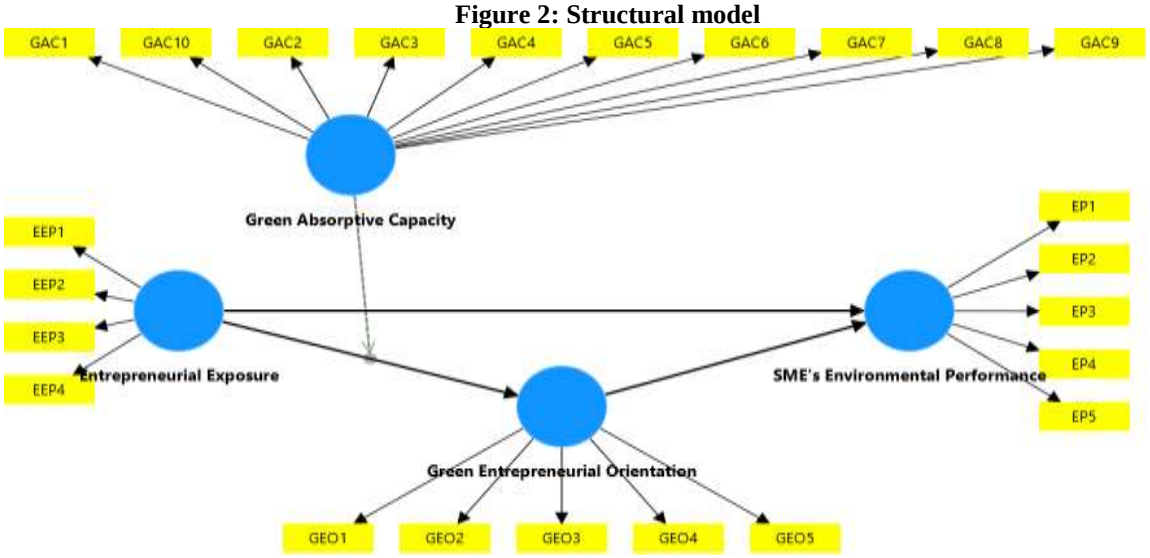


Table 9: Examination of relevance and significance of structural paths

Direct Path	Beta Value	T Value	P values
Entrepreneurial Exposure -> Green Entrepreneurial Orientation	0.484	10.954	0.000
Entrepreneurial Exposure -> SME's Environmental Performance	0.252	4.508	0.000
Green Entrepreneurial Orientation -> SME's Environmental Performance	0.621	12.142	0.000

3.11. Direct effect

The direct effect demonstrates the one-on-one relationships among exogenous and endogenous variables.

Hypothesis H1: *Entrepreneurial exposure has an impact on SMEs' environmental performance.*

It was hypothesized that Entrepreneurial exposure has an impact on SMEs' environmental performance. As demonstrated in the table 4.9, β= 0.252, t= 4.508, p= 0.000. These results showed that the β value is positive and shows the size of the path i.e. 0.252, the t value above ±1.96 i.e. 4.508, and the p-value is less than 0.05 which shows the significance of the path.

Hypothesis H2: *Green entrepreneurial orientations have an impact on SMEs' environmental performance.*
It was hypothesized that Green entrepreneurial orientations have an impact on SMEs' environmental performance. As demonstrated in the table 4.9, β= 0.621, t= 12.142, p= 0.000. These results showed that the β value is positive and shows the size of the path i.e. 0.621, t value above ±1.96 i.e. 12.142, and the p-value is less than 0.05 which shows the importance of the path.
Hypothesis H3: *Entrepreneurial exposure has an impact on green entrepreneurial orientations.*
It was hypothesized that Entrepreneurial exposure has an impact on green entrepreneurial orientations. As demonstrated in the table 4.9, β= 0.484, t= 10.954, p= 0.000. These results showed that the β value is positive and shows the size of the path i.e. 0.484, the t value above ±1.96 i.e. 10.954, and the p-value is less than 0.05 which shows the significance of the path.

3.12. Mediation Effects

The indirect effect demonstrates the mediation relationships among variables.

Table 10: Indirect Effect

Indirect Path	Beta Value	T Value	P values
Entrepreneurial Exposure -> Green Entrepreneurial Orientation -> SME's Environmental Performance	0.300	7.625	0.000

Hypothesis H4: Green entrepreneurial orientations mediate the relationship between entrepreneurial exposure and SMEs' environmental performance.
It was hypothesized that Green entrepreneurial orientations mediate the relationship between entrepreneurial exposure and SMEs' environmental performance. As demonstrated in the table 4.21, β= 0. 300, t= 7.625, p= 0.000. The results shown in Table 4.10 indicate that Green entrepreneurial orientations mediate the relationship between entrepreneurial exposure and SMEs' environmental performance.

3.13. Moderation Effects

Table 11: Moderation Effect

Moderation	Beta	T values	P values
Green Absorptive Capacity x Entrepreneurial Exposure -> Green Entrepreneurial Orientation -> SME's Environmental Performance	0.071	5.732	0.000

Hypothesis H14: *Green absorptive capacity moderates the relationship between entrepreneurial exposure along with green entrepreneurial orientations.*
It was hypothesized that Green absorptive capacity moderates the relationship between entrepreneurial exposure and green entrepreneurial orientations. As demonstrated in the table 4.11, β= 0. 0. 071, t= 5.732, p= 0.000. These results showed that the β value is positive and shows the size of the path i.e. 0. 071, t value above ±1.96 i.e. 5.732, and the p-value is less than 0.05 which shows the importance of the path.

3.14. Step-3 examination of coefficient of determination (R^2)

The next and third step in structural model evaluation is to analyze the R2 (coefficient of determination) value of endogenous composite constructs. Table 12 demonstrates the R2 scores of variables i.e. Environmental performance and Green entrepreneurial orientations. The R2 value for Environmental performance is 0. 712 which is considered substantial and the R2 value for Green entrepreneurial orientations is 0. 797 which is considered substantial.

Table 12: Examination of coefficient of determination R2

Construct	R-square	R-square adjusted
Green Entrepreneurial Orientation	0.797	0.795
SME's Environmental Performance	0.712	0.711

Table 13: Examination of effect size f^2

Variables	f-square
Entrepreneurial Exposure -> Green Entrepreneurial Orientation	0.425
Entrepreneurial Exposure -> SME's Environmental Performance	0.064
Green Absorptive Capacity -> Green Entrepreneurial Orientation	0.234
Green Entrepreneurial Orientation -> SME's Environmental Performance	0.387
Green Absorptive Capacity x Entrepreneurial Exposure -> Green Entrepreneurial Orientation	0.079

3.15. Step-4 examination of effect size f^2

The next and fourth step to evaluate the structural model is to measure effect size (f^2). Change in the value of f^2 of overall model is indicated in this step. In order to check whether omission of certain variables has a significant impact on endogenous variables the f^2 effect size is used.

The threshold of effect size (f^2) is 0.02 for a small effect, 0.15 for a moderate effect, and 0.35 for a large effect (Chin, 1998a; Cohen, 1988). Table 13 demonstrates the f^2 scores of exogenous variables i.e. Entrepreneurial exposure, Green absorptive capacity, and Green entrepreneurial orientations. All exogenous variables have a large effect size with environmental performance.

4. Discussion of Findings

The findings of H1 indicate that there is an immense positive impact of EEP on EP in SMEs in Pakistan. Furthermore, the interpretation of H2 indicates that EEP has a positive and strong influence on the EP of SME's. Moreover, the interpretation of H3 indicates that GEO has a positive and significant impact on the EP of SME's. Regarding H4, the findings show that there is mediation. Thus, the interpretation of the results indicates that GEO mediates the relationship between EEP and EP. Moving forward, the finding of H5 shows that there is a moderation relation. Thus, the interpretation of the results indicates that GAS moderates the relationship between EEP and GEO.

4.1. Implications of Study

This study is able to gain important understandings into the inter-relationships between entrepreneurial exposure and environmental performance among SMEs. Through a detailed examination of these relationships, the research demonstrates entrepreneurial exposure significantly educates small and medium enterprises in adopting sustainable practices. The significance of this study is extensive and includes considerations for academic dialogue, practice-oriented implications, as well as policy-making.

4.2. Theoretical Implications

This research adds valuable inputs to the already present knowledge on entrepreneurial exposure and its link with SMEs' environmental performance. This study makes a notable theoretical contribution by introducing a new framework that links entrepreneurial exposure to SMEs' environmental performance through both mediating and moderating variables. By integrating green entrepreneurial orientation as a mediator, the research offers fresh insights into how these factors shape the connection between entrepreneurial efforts and environmental outcomes. It clarifies the processes by which entrepreneurial exposure leads to improved environmental performance, providing a more detailed understanding of sustainable pathways for SMEs. Moreover, the inclusion of green absorptive capacity as a moderating variable deepens the comprehension of how SMEs can utilize external knowledge and innovation to enhance their environmental performance. This is especially significant for resource-limited SMEs that depend on external knowledge to innovate and adopt green practices. The study expands existing theories on green entrepreneurship and environmental performance in SMEs by highlighting the importance of both internal factors (entrepreneurial exposure) and external influences (green absorptive capacity) in driving a firm's environmental success. Furthermore, it offers empirical support for the idea that environmental and business success can be mutually reinforcing, contributing to the larger conversation on sustainability in entrepreneurship.

4.3. Social Contribution

The social contribution of this framework is multifaceted. This study makes a significant social contribution by highlighting the essential role of entrepreneurial exposure in promoting sustainable practices within SMEs. As environmental challenges become more pressing, SMEs key drivers of many economies—play a pivotal role in addressing environmental degradation. By focusing on green entrepreneurial orientation, the research advocates for sustainability as a core element of business operations. Through entrepreneurial exposure, entrepreneurs gain a deeper understanding of the environmental impact of their activities, fostering a proactive approach to environmental stewardship. SMEs equipped with this mindset are better prepared to innovate, reduce their carbon footprint, enhance resource efficiency, and contribute to the well-being of their communities. Additionally, as SMEs lead by example in adopting sustainable practices, they can inspire other businesses, helping to create a broader culture of environmental responsibility. This can trigger a ripple effect across industries, advancing global sustainability efforts and supporting a healthier environment for future generations.

4.4. The Contribution to Policy

The findings of this research make a valuable contribution to policy development in the context of entrepreneurial exposure and SMEs' organizational performance. Firstly, from a policy perspective, this study provides important insights that can inform the development and execution of strategies aimed at fostering environmental sustainability within SMEs. Policymakers can utilize these findings to create and promote entrepreneurial exposure initiatives that prioritize sustainability and environmentally friendly business practices. By incorporating sustainability into entrepreneurship curricula, policymakers can ensure that aspiring entrepreneurs not only acquire business skills but also gain knowledge about sustainable operations. Furthermore, the study underscores the significance of exposing entrepreneurs to practical experiences that illustrate both the advantages and challenges of implementing green practices. Policies could facilitate partnerships among educational institutions, businesses, and government bodies to create internships, training programs, and mentorship opportunities focused on environmental entrepreneurship. Additionally, the findings regarding green absorptive capacity indicate that policies should encourage SMEs to absorb and utilize external knowledge on environmental innovation. This could be achieved through incentives such as grants, subsidies, or tax reductions for companies investing in green technologies or collaborating with research institutions. Ultimately, by supporting SMEs in their pursuit of improved environmental performance, policymakers can help advance national and global environmental objectives while promoting a more sustainable economy.

4.5. Limitations and Further Direction

Despite the valuable insights given by this research, various limitations indicate potential avenues for future research. Firstly, the focus is on the SMEs. While these businesses are essential to many economies, the findings may not easily translate to larger organizations or multinational corporations. Future studies could assess whether the observed relationships between entrepreneurial exposure, and environmental performance are applicable to businesses of various sizes and across different sectors. Additionally, the reliance on cross-sectional data, but green entrepreneurial orientation and environmental performance are likely to change over time. Conducting longitudinal studies would yield deeper insights into how these relationships progress, potentially revealing trends

that are not visible in a one-time analysis. Furthermore, the geographical scope of this study is limited, which means that cultural and regional influences and important factors that can affect entrepreneurial behavior and environmental practices were not fully explored. Future research could expand on this aspect by investigating how different cultural contexts influence the relationship between entrepreneurial exposure and environmental performance. Lastly, while this research focuses on green absorptive capacity, other moderating factors such as access to financial resources or regulatory conditions may also significantly impact environmental performance, suggesting another direction for future inquiry. By addressing these limitations, upcoming research can provide a more thorough understanding of how SMEs can enhance environmental sustainability across various contexts and conditions.

5. Conclusion

In summary, this study offers an important analysis of the relationship among entrepreneurial exposure and SME's environmental performance, with green absorptive capacity acting as a moderator and green entrepreneurial orientation serving as a mediators. The results emphasize the necessity of incorporating sustainability into entrepreneurial practices and highlight the significant roles that educational institutions and policymakers can play in fostering environmental responsibility within SMEs. By enriching the academic discussion on entrepreneurship and sustainability, this research paves the way for further investigations in this area. The insights gained about social impact, policy formulation, and theoretical growth provide a framework for encouraging a more sustainable and environmentally aware entrepreneurial ecosystem. Ultimately, this research acts as an immediate call to action for various stakeholders to work together in promoting green entrepreneurship, ensuring that economic growth is in harmony with the pressing need for environmental sustainability in today's world.

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