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Unpacking the Bricolage–Performance Nexus: A Study of Environmental Uncertainty and SME Sustainability in South Punjab

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Abstract
This research seeks to empirically explore the relationship of entrepreneurial bricolage and sustainable performance (economic, environmental, social) of small and medium enterprises in the three administrative divisions of South Punjab, Pakistan. Moderating variable namely environmental uncertainty was hypothesized on the relationship between entrepreneurial bricolage and sustainable performance. The study adopts a framework rooted in the theory of resource orchestration to analyze and understand the dynamics at play in the context of sustainable performance in the SMEs. The integration of entrepreneurial bricolage with sustainable performance is a developing domain of research that has the potential of contributing to the broader understanding of how resourceful behaviors impact sustainable performance over the long term. The current research will augment entrepreneurship and sustainability studies and invite attention of researchers, professionals, and practitioners in both fields. It will encourage an inter-disciplinary approach, promising the integration of insights from business, environmental science, and other relevant disciplines. It will tend to provide evidence-based recommendations for policy and practice. Understanding the manner in which entrepreneurial bricolage contributes to sustainable performance of SMEs will spotlight the factors that enhance long-term business resilience. This knowledge is important particularly in the backdrop of uncertain business environment where adaptability and sustainability are key factors for survival and success of SMEs. The study will address gaps in the extant literature by examining the relationships between these specific variables, thereby contributing to the theoretical foundations of entrepreneurial studies. Findings will provide a nuanced understanding of the entrepreneurial process to navigate uncertainty in operating environment and respond challenges stemming from resource scarcity. This study resorted to the survey method for collecting data from 500 owners/managers of different SMEs. PLS-SEM technique was applied to analyze the data. This study designed a structured questionnaire for conducting a primary survey from 305 valid

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respondents belonging to SMEs in South Punjab. This cross-sectional study is constrained geographically to the thirteen districts of South Punjab.
Findings revealed that environmental uncertainty negatively moderated the relationship between entrepreneurial bricolage and sustainable performance (economic and environmental) whereas this joint interaction was not statistically significant and, consequently, there was no moderation on social dimension of sustainable performance. Given the specific focus on SMEs within the context of a developing country like Pakistan, it is essential to approach the generalization of the study's findings to other regions, countries, and cultural contexts with caution. By exploring and uncovering the nexus of entrepreneurial bricolage and sustainable performance, this study aims at advancing the knowledge in the field of entrepreneurship and sustainability that will undoubtedly come up with the actionable insights for the academicians, practitioners and policymakers alike. However, it is advisable that bricolage behavior should be applied with great caution particularly under the uncertain environment. Furthermore, it suggests that neglecting the notion of entrepreneurial bricolage to improvise and making-a-do with whatever resource available contributes to the failure of some SMEs.

Keywords: Entrepreneurial bricolage, environmental uncertainty, sustainable performance, TBL, SMEs.

Introduction

At present, entrepreneurial ecosystem is faced with and encounters economic, environmental, and societal pressures on a massive scale. Universal agenda for sustainability prioritizes and places the economic crisis, unequal opportunities, unemployment, ailments, regional conflicts, natural calamities, climatic changes, and poverty on the top. Sustainable development predominantly refers to “fulfilment of the needs of the present generation without compromising the ability of future generations to meet their own needs” (Brundtland, 1987). Way back in 2015 from all around the world, 190 countries undertook achieving 17 Sustainable Development Goals (hereinafter SDGs) and inextricably interwoven 169 targets for affording a better life for next generations. This resolution aims at transforming the world and formulating strategic actions spanning subsequent 15 years thence, for the greater good of planet earth and betterment of its people (Burke et al., 2024).

Factors like technological breakthroughs, unpredictable climates, political volatility, and financial integration influenced the human lifestyle in this age. This entire picture accentuates the momentum of external and exogenous pressure placed on the public at large, non-government organizations, and the government to heed the environmental concerns through implementation of sustainable features (Golgeci, Makhmadshoev, & Demirbag, 2021). Consistent with (Sancak, 2023), sustainability appeared as a leading organizational concern since it carries prospects to develop, grow, compete, and to be financially viable. High echelon and organizational leaders now understand that addressing challenges of sustainable development has the potential of improving their relations with stakeholders and helping them stand out in the market (Blind & Heß,

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2023). Jawaad and Zafar (2020) argued that fostering sustainable development could be relatively challenging because of the broad consensus, critical decision-making, and concerted efforts required on part of relevant stakeholders. As stated by (Iqbal & Ahmad, 2021), pivotal role is played by the managers in top echelon of the organizations since they obtain and employ vital resources, mount most befitting strategies, and also point out the best channel for accomplishing sustainability development goals.

Following the advent of rapid industrialization and, thereafter, ensuing fast-track advancement of world nations and their organizations, it became necessary to dig out different instrumental aspects observed in the extant literature relating to firms' sustainable performance (Gupta, Kumar, & Wasan, 2021). To systematically manage the firms' sustainability, it is advisable to understand its antecedents (Kafetzopoulos, 2021). Studies conducted recently examined different drivers and showed that individual differences in management and leadership styles can predict and affect sustainability (Mousa & Ayoubi, 2019).

Small and medium scale enterprises (SMEs) are rightly the spring well and indispensable engines to boost economic development (Smallbone et al., 2022). They ceaselessly endeavor to achieve sustainable growth for maintaining the competitive advantage (Fawad et al., 2022). Nevertheless, globally, small scale enterprises encounter a considerably high failure probability (Latifi et al., 2021). Earlier research showed approximately 40% failure rate of businesses during first couple of years of operation (Abbas et al., 2019). In addition, a wave of SME shutdowns has been reported because of the incapacity to withstand the effect of economic instability. Accordingly, they are under compulsion to maximally utilize the existing resources to ensure being flourishing in the competitive market (Chung, & Son, 2022).

Sustainability is the crux and core essence of entrepreneurial renaissance. During the previous decades, interest in developing sustainable organizations burgeoned forth. Initially, the notion of sustainability has been a derivative of ecology that refers to the readiness of a system and process for developing, growing and enduring (Living & Conditions, 2015). Sustainability is also known as an effort for conserving, using, and recycling the natural resources efficiently with an ultimate purpose of ensuring the preservation of whole ecosystem (Tyrańska, 2024). The concept of sustainable business is grounded and anchored in the wider phenomenon of sustainable development around the world, that is thought to rank among the substantial and significant challenges faced by the humanity. So, the solutions sponsoring and supporting business sustainability are rising in infinite importance. Sustainability is a composite phenomenon that integrates some characteristics which are often contradictory and conflicting (Awuah et al., 2024). It calls for business participation in sustainable development and it is measured in terms of commitment and actions that contribute to sustainability (Zgrzywa-Ziemak & Walecka-Jankowska, 2021).

Under the current study, the notion of sustainable performance is conceptualized, implemented, and established as a manifestation of a firm's contribution towards sustainability. It is an all-inclusive approach wherein an organization is conceptualized as "a mesoscale social artifact in need of consideration as a possibly

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potent means of approaching sustainable development" (Zgrzywa-Ziemak, Walecka-Jankowska, & Zimmer, 2024). Society and the planet reap significantly positive effects in the critical areas because of the sustainable organization (Hanaysha & Al-Shaikh, 2024).

Indisputably, the organization needs generating profit for reconstruction of its potential and future development, however, it should be committed to developing broader socio-ecological system as its overriding objective (Zgrzywa-Ziemak & Walecka-Jankowska, 2021). Various sustainability approaches may be employed including the ones that refers to the organizational survival and success as a system (Zgrzywa-Ziemak et al., 2024). It is particularly evident in the instrumental approach where long-run shareholders' value is standardized as the crux of sustainability, wherein socio-environmental concerns are critical in the backdrop of opportunities-risks, and costs-benefits binaries which are termed decisive for creating this value. The prevalent win–win approach undoubtedly has its core essence the delivery of economic, social, and environmental benefits simultaneously, synergistically, and systematically (Sekerka & Stimel, 2011; Zgrzywa-Ziemak et al., 2024). This approach drives organizations towards finding cost-effective areas, which, all at once, extend social or environmental benefits (Porter, 2011). Instead of deeply reflecting on the systematic obligation of a firm, it focuses in line with the present assumption to proceed out of self-interest (Carroll & Brown, 2021).

The idea of sustainability draws on an organization's objectives in terms of sustainability ambitions (Bratton & Paulet, 2022), procedures or actions that shape up sustainability (Adolph & Beckmann, 2024), the attributes peculiar to the sustainable organization (Battistella, Cicero, & Preghenella, 2021) and the outcomes, a contribution towards sustainable development (Cardoni, Kiseleva, & Taticchi, 2020). Current study employs the sustainability approach on the basis of organizational performance. Concept of sustainable performance is advanced as an exhibition of the business contribution in improving or deteriorating economic, environmental and social situations, developments and trends observed at different levels namely local, regional and global.

Sustainable development is progressively being observed as a way leading to all the good and needed in society. World Commission on Environment and Development (1987) promoted the paradigm and conferred a seminal definition of sustainable development that advocates the interconnection of social, economic, and environmental aspects featuring sustainable development. Likewise, (Piyathanavong et al., 2024), employing triple bottom line pointed out that economic, environmental, and social dimensions should be equally measured while taking decision and making policy in a business. However, according to (Embry, York, & Edgar, 2022), the most pressing questions of sustainability falls within the ambit of environmental and social encounters. Extant literature too underscores the urgency that calls for involving SMEs in attaining sustainable development (Smith et al., 2022). SMEs are the lifeline for the global economy in addition to being the primary consumers of the world's resources, thereby giving rise to contamination of air and water besides generation of waste (D'Amato et al., 2020). This accentuates the necessity for SMEs' involvement

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in sustainable development and responsible stewardship of scarce socio-environmental means across the globe (Govindan et al., 2020). But, SMEs have restricted absorptive capacity and are resource-deficient that hinder their socio-environmental contributions (Khattak, 2020).

Previous research commonly concentrates on the outcomes of sustainability with lesser attention paid to its antecedent conditions (Du et al., 2022). In the intervening time, studies are voluminous on exploring the resilient and sustainability-driven performance of SMEs which either emphasizes social (Yadegaridehkordi et al., 2023), environmental (Hamann, et al., 2017; Yadegaridehkordi et al., 2023), or economic performance (Soto-Acosta et al., 2016; Yadegaridehkordi et al., 2023) distinctly. A review study undertaken by (de Sousa Jabbour, Ndubisi, & Seles, 2020) discovered that only a few research studies surveyed all the three dimensions of sustainable performance simultaneously. Consequently, there are blind spots signaling holistic exploration of SMEs' sustainable performance under the umbrella of vital multidisciplinary ingredient that affect sustainable performance. Congruent with research findings of (de Sousa Jabbour et al., 2020), focal point of sustainability is a well-adjusted and synergistic amalgamation of financial, social, and environmental facets. This approach is called triple bottom line framework that supports the execution of sustainable business drives and achieves sustainable performance. Believably, economic, environmental, and social factors, if considered as part of decision-making calculus, will entail circumstances for successfully attaining sustainability-oriented performance (Mokbel Al Koliby et al., 2022).

Empirical research studying and examining the moderating role of environmental uncertainty on the linkage of entrepreneurial bricolage and sustainable performance signifies a fertile area and constitutes a significant gap for further studies. Capitalizing on the resource orchestration theory, it is argued that organizational performance is governed not only by the efficient management of resource but also depends upon its fit with environmental externalities (Durst, Hinteregger, & Zieba, 2024).

Even so, inconsiderable empirical research examined and investigated the moderating influence of environmental uncertainty (Steffens et al., 2023) with findings inconsistent, hybrid, and transient artifacts. It is heartening to see a few studies finding that entrepreneurs most probably tend to celebrating challenges through bricolage behavior; therefore, the environmental uncertainty augments the bricolage impacts (Ma & Yang, 2022). Conversely, other research suggests a negative effect of bricolage towards environmental uncertainty (Senyard, Davidsson, & Steffens, 2015). So, the idea of moderating impact of environmental uncertainty between entrepreneurial bricolage and sustainable performance merits attention for further investigation.

What raises more concerns is that earlier scholars claimed larger and public listed organizations remained under the limelight of prior scholarships, which is not reflective of actual situation of SMSs (Nor-Aishah et al., 2020). Consequently, the current study will also close this gap with empirical research on SMEs.

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Literature Review

SMEs in Pakistan: An Overview

The SMEs landscape in Pakistan comprises over 3.2 million ventures with 90% operating in the private sector, contributing 30% to the country's GDP (Shafi, Liu, & Ren, 2020). Although, premium can be placed on the SMEs contribution to the entrepreneurial growth, however, they need particular skills and competencies (Bansal et al., 2023). Within the context of Pakistan, definition of SMEs differs across multiple sources that fairly includes "Small and Medium Enterprises Development Authority", "Sindh Industries Department", "Federal Bureau of Statistics", "Punjab Small Industries Corporation", "State Bank of Pakistan, SME Bank", and "Punjab Industries Department". SMEDA, however, specifically defines SMEs in Pakistan and categorizes them as organizations operating with "up-to 250 employees, paid-up capital up-to Rs. 25 million, and annual sales up-to Rs. 250 million". Classification of SMEs into small or medium predominantly depends upon the number of employees because of the challenges coupled with achieving financial information from SMEs in Pakistan (Prima Lita, Fitriana Faisal, & Meuthia, 2020). Small firms are classified on the bases of several criterion, where numerical strength of employees is a mandatory consideration, whereas measuring additional financial criteria is left with the discretion of the particular firm (Berisha & Pula, 2015). In Pakistan, enterprises employing up-to 35 individuals are rated small firms, whereas those having 36-250 personnel are termed medium-sized firms. Firms having an employee size of more than 250 employees are identified as large enterprises (Raza & Majid, 2016). To the extent of this study, definition given by SMEDA is adopted, which classifies SMEs as the organizations having an employee size of up-to 250 (Hassan et al., 2018) in concurrence with the definition provided by SMEDA.

In Pakistan, neighboring 90% of overall enterprises get bracketed in the SME category. The country is home to roughly 3.2 million enterprises bracketing among micro, small, and medium level; 65% of these units operate in the province of Punjab. SMEs constitute a staggering 90% of economic establishments, providing employment for 70% of the non-agricultural workforce. This sector contributes to the tune of 30% to GDP and 25% to export earnings. The SME landscape comprises 400,000 manufacturing, 600,000 service sector, and 1 million trade sector units. In Punjab alone, SMEs engage approximately 1.2 million individuals out of the total 1.8 million labor force serving in manufacturing sector. The urban-rural dichotomy of SMEs stands at 59% to 41%, reflecting the distribution of these enterprises across different areas of the country.[1]

In the context of low-income nations, SMEs play a pivotal role that account for 70% of total employment and contribute 60% to GDP (Tekola & Gidey, 2019).

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Notwithstanding the economic challenges, developing countries like Pakistan aim at achieving the developmental goals through support from SMEs (Anwar & Shah, 2021). Indeed, there is substantial potential for SME expansion in Pakistan, which is instrumental in employment creation, poverty alleviation, and a decrease in economic inequality.

Entrepreneurial Bricolage

The emergence of entrepreneurial bricolage as a phenomenon in developing markets, where individuals create something substantial from limited resources, is on the rise (Baker & Nelson, 2005). One of the critical responsibilities for entrepreneurs in the entrepreneurial journey involves obtaining and leveraging resources in concurrence with the view of (Kher, Yang, & Newbert, 2023). The concept of resource bricolage, introduced by (Baker & Nelson, 2005), familiarizes a novel mindset and action plan for addressing resource-related issues especially the scarcity. Adhering to the principle of maximizing the utility of available assets, businesses adeptly utilize their current resources to navigate opportunities and overcome challenges.

Lvi-Strauss (1966) pioneered and introduced the concept of bricolage as a means of generating fresh forms and manifestations by utilizing available objects and tools in the familiar local situations (Duymedjian & Rüling, 2010). In such circumstances, bricoleurs, armed with profound established knowledge, frequently produced unforeseen and innovative solutions to the challenges they encountered (Lvi-Strauss, 1966). Of late, bricolage has gained prominence within entrepreneurial research as a fundamental concept for comprehending the intricate behaviors and strategies employed by entrepreneurs for developing and utilizing the resources (Kickul et al., 2018). Extensive research in the field of entrepreneurs and new ventures has called into question the conventional linear and causal approach to investigating the entrepreneurial process of resource development (Baker & Nelson, 2005; Kickul et al., 2018).

The core essence of entrepreneurial bricolage is rooted in the concept of resource scarcity, a notion originally pioneered and introduced by (Levi-Strauss, 1966). Bricolage, as defined by (Baker & Nelson, 2005), involves a process of “making do” with whatever means and resources are readily available. They expanded the theory into the entrepreneurial domain, that highlighted entrepreneurial adaptation to, yet resistance against, externally enforced constraints and emphasized a refusal to be limited by such environmental barriers. In the realm of entrepreneurship, bricolage goes beyond adapting to limitations and encompasses the ability to reinterpret depleted environments, recognizing the value in resources that others may overlook, and creatively utilizing them to generate innovative solutions (Sarkar & Mateus, 2024). The principal idea behind bricolage is the capacity to improvise, which means redefining the conventional approaches of working and thinking creatively to overcome externally dictated environmental restrictions. This improvisational skill has been identified as an antecedent condition shaping bricolage, according to (Baker & Nelson, 2005). Individuals who embody the spirit of bricolage are often described as dreamers and pioneers (Servantie & Rispal, 2020). These entrepreneurial bricoleurs

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focus on creating solutions to the problems that have not been previously addressed, leveraging the conveniently reachable and more often free resources that may be tangible or intangible, to bring in innovative solutions.

Indeed, the bricolage has its genesis in the necessity (Duymedjian & Rüling, 2010), and as such it has the potential to pave the way for idiosyncratic combinations and unique innovations (da Silva, Zejnilovic, & Oliveira, 2023). Certain organizations deliberately adopt bricolage as a design philosophy, as highlighted by (Busch & Barkema, 2021). This approach has found application in various contexts, ranging from fledgling businesses in their early stages (Baker & Nelson, 2005) to large multinational corporations navigating resource-constrained environments (Busch & Barkema, 2021). Bricolage proves particularly valuable and decisive in emerging industries and saturated, competition-ridden, where declining resources support only the enterprises with adept bricolage capabilities and these firms outperform competitors constrained by the need for specific types and levels of required resources, which are ultimately compelled to miss out on potential opportunities (Baker & Nelson, 2005).

Levi-Strauss (1967) coined the concept of bricolage that was further expounded by (Baker & Nelson, 2005), and ever since has found its application by the scholars in various fields which fairly include entrepreneurship and strategy research. Bricolage, as defined by (Baker & Nelson, 2005) later on, involves adapting to circumstances through creative application of resources at hand to take care of new challenges and seizing potential opportunities. The broad-spectrum definition encompasses three key elements: active engagement with the environment to identify and create opportunities notwithstanding the limitations, repurposing resources in ways different from their original intent, and accumulating diverse resources for potential future utility (Phillips & Tracey, 2007).

As discussed by various scholars (Baker & Nelson, 2005; Desa & Basu, 2013; Phillips & Tracey, 2007; Salunke et al., 2013; Senyard et al., 2014; Wu et al., 2017; Yu et al., 2019), entrepreneurial bricolage is characterized as a strategic orientation or option to creatively reconfigure the combination of existing resources in response to novel challenges and opportunities faced by firms. Entrepreneurial bricolage is recognized as the cognitive framework at the firm level, dictating how companies strive to navigate challenges and capitalize on opportunities by strategically utilizing the resources available to them (Acharya & Berry, 2023; Baker & Nelson, 2005). Within this framework, the scarcity of resources is perceived as a chance for innovative mobilization and integration of a company's scarce resources, aiming to unlock their potential for innovation (Iqbal, Ahmad, & Halim, 2021).

The Grameen Bank's founding narrative presented by (Barua & Khaled, 2023), aptly showcases the bricolage process. This creative approach proved essential for Grameen in circumventing established institutional banking procedure that were unwilling to provide credit to the impoverished and economically marginalized people. Dr. Mohammed Yunus and his students, facing resistance from prevailing standards, leveraged their limited resources, hands-on experiences, and enlisted volunteers from marginalized communities, who had been denied loans elsewhere, to pioneer the

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Grameen microfinance initiative. As soon as the Grameen Bank expanded and demonstrated impressive repayment rates among its entrepreneurial clientele, the prevailing skepticism surrounding the creditworthiness of financially unfortunate people gradually evolved into an attractive financial opportunity for the larger banking institutions.

Environmental Uncertainty

In the past few years, businesses have encountered heightened risks in the corporate landscape, contending with unforeseen instabilities and interruptions in supply chains brought about by natural calamities, economic catastrophes, and societal occurrences (Scholten et al., 2020). The foundational concept of environmental uncertainty draws upon the pioneering stream of contingency studies. It is defined in two key ways: firstly, as the condition of the organizational environment characterized by a scarcity of high-quality information articulated by (Zayadin et al., 2023). Secondly, it is described as the state of an individual, such as a manager, who perceives a lack of crucial information about the environment explored by (Nguyen et al., 2023). The present study is specifically anchored in the former perspective and highlights the significance of externally imposed environmental condition in alignment with (Yu et al., 2018).

Researchers contend that the relationship between environmental uncertainty and enterprise performance is subjective, as it is contingent on the perspectives of managers, the preparedness of inside proficiencies, and interpretation of marketplace uncertainty by a particular organization (Parnell, 2018). Nonetheless, empirical evidence suggests that there is a notable positive influence of environmental uncertainty on both firm innovation and performance (Zhang et al., , 2021). Environmental uncertainty epitomizes the level of volatility and unpredictability of changes taking place in trading environment. This unpredictability manifests through fluctuations in market demand, technological advancements, policy alterations, supplier dynamics, and other environmentally-driven forces, all of which have unpredictable repercussions upon the corporate value chain (Davidson et al., 2013). Additionally, this uncertainty can give rise to inequitable pricing concerns, with significant ramifications for evaluating carbon impacts (Nocera et al., 2018).

In a highly dynamic environment, (Hmieleski & Ensley, 2004) found that new ventures opting for improvisation demonstrated superior performance compared to their counterparts that refrained from it. Environmental uncertainty refers to the extent of predictability of the future (Afshar Jahanshahi & Brem, 2020). Research indicates that in stable environments, companies tend to establish clear and organized systems, hierarchies, well-defined roles and responsibilities (Kaur et al., 2019). Conversely, increased uncertainty in the environment necessitates higher information processing demands, renders traditional planning and predictive methods outdated, and compels firms to concentrate on utilizing available resources or leveraging contingencies (Yu et al., 2018).

In a seminal paper on risk and uncertainty, (Knight, 1921) posits that circumstances deemed uncertain if these entail (a) the impracticality of attributing objective

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probabilities to every conceivable outcome and (b) the incapacity to gauge the chance of events occurrence, which is further cited by (Zayadin et al., 2023). This notion of uncertainty holds particular significance for entrepreneurs, given that business decisions seldom involve quantifiable probabilities (Van Praag, 1999).

Effectively navigating highly volatile and negotiating the environmental turbulence charts an infinitely important aspect of managerial decision-making (Santos et al., 2023). The ability to adapt in uncertain situations significantly influences performance levels, ultimately leading to either higher or lower firm success probabilities (Honig & Samuelsson, 2021). This notion holds substantial social and economic implications for firms, emphasizing the critical nature of environmental uncertainty (Rikhardsson et al., 2021). With increasing complexities happening in organizational context because of environmental uncertainties, the internal processes undergo redesign for responding the external changes in a befitting manner (Lill et al., 2021).

Sustainable Performance

During the 1990s, a growing awareness emerged within industries regarding the significance of environmental sustainability and its allied concept of social responsibility. Notwithstanding, there is limited evidence to suggest that, at least until the close of the 20th century, companies and organizations accorded these considerations sufficient importance amidst their other competitive postures (Porter & Van der Linde, 1995). (Elkington, 1994) is often cited by many authors as the pioneer of the conceptual framework for the application and measurement of sustainability in organizations. Elkington's Triple Bottom Line framework encouraged organizations to see and chase performance through a multidimensional perspective, incorporating therein not only the conventionally-pursued financial and economic indicators but also the environmentally and socially driven factors. Sustainability, in essence, refers to the organizational capacity to endure and thrive over time while lessening negative consequences for the environment, society, and economy. It involves adopting practices that integrate ecological, social, and economic considerations to create a lasting and positive influence (Walker et al., 2023). Sustainable performance pertains to maintaining a business's long-term viability (Dueñas-Ocampo et al., 2021) and requires balancing economic, social, and environmental factors. Nevertheless, the temporal, intergenerational, and transgenerational aspects sometimes demand that one dimension may take precedence over the others (Pérez et al., 2017). All through the entrepreneurial phase, pinpointing and giving precedence to the most relevant dimensions in distinct contexts enables firms to enhance their sustainable performance. According to the research conducted by (Xuecheng et al., 2022), sustainable performance of an organization can be characterized as its comprehensive effectiveness across all stakeholders and facets. This effectiveness is determined by three key elements of performance: economic, environmental, and social. The concept of performance, particularly sustainable performance, is multifaceted and can be understood in various contexts. (Nizam et al., 2019) delineated sustainable performance in terms of effective deployment and administration of an enterprise's

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resources with an eye on maximizing the benefits on environmental, economic, and social fronts. Environmental performance relates with a firm's ability to conserve natural resources and safeguard vital components of the environment. Examples include reducing CO_2 emissions, minimizing water consumption, decreasing plastic usage, and harnessing renewable sources to meet energy needs. Social performance refers to the capacity to evaluate stakeholder satisfaction, trust, and cohesion. Its inherent character is the overall satisfaction of customers, employees, suppliers, and of host communities. Financial performance is intricately linked to the profitability of firms. Metrics to assess this dimension of performance include total revenues, gross profit, ROI, etc. Sustainable performance fundamentally entails adopting a comprehensive strategy that takes into account environmental accountability, stakeholder engagements, and financial sustainability. This reflects a dedication to enduring success by striking a balance among and harmonizing economic, social, and environmental factors. Sustainable performance refers to the organizational strategies that optimize efficiency without causing environmental harm (Del Serrone, Riccio, & Moretti, 2025). In 2001, the UNEP released a wide-ranging report emphasizing the enduring advantages of environmental consciousness for both the organization and society (Kumar, Bexci, Bhaumik, & Ojha, 2025). These advantages contain increased brand awareness, reinforced customer loyalty, goodwill, compliance with regulations and certifications, and decreased resource consumption to mention a few (Kaur, Singh, & Kaur, 2025).

Although the execution of sustainability drive and the initiatives taken may not yield immediate increases in profit and sales performance, it positions organizations for superior long-term success through preliminary investments in the management of these initiatives (Thoriq et al., 2024). The concept of environmentally sustainable performance accentuates the positive impact of sustainability initiatives of an organization on its natural environment, both inside and outside (Al Koliby, Mohd Suki, & Abdullah, 2022). This involves adhering to environmental benchmarks, reducing emission of air-pollutants, minimizing resource consumption, and avoiding the materials with hazardous implications (Eltayeb et al., 2011). In line with the assertion of (Laosirihongthong, Adebanjo, & Choon Tan, 2013), environmentally sustainable performance involves the reduction of air-pollutant discharge, consumption of energy, utilization of material, and the commitment to environmental standards.

In the meantime, according to the viewpoint of (Abdul-Rashid et al., 2017), environmentally sustainable performance entails the reduction of environmental externalities such as CO_2 emissions, wastewater discharge, solid waste output, energy use, hazardous substances, resource consumption, material dependence. It also emphasizes improved compliance with environmental frameworks. Additionally, according to (Al Koliby et al., 2022), social sustainable performance is characterized by the firm’s capacity to contribute to social welfare, over and above the occupational safety and health of its personnel and also the public. Consequently, entrepreneurs and SMEs are urged not only to develop profitable business entities but also to actively address the welfare of communities with the ultimate objective to preserve the

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ecosystem for future generations (Carter & Rogers, 2008). In alignment with this perspective, (Abdul-Rashid et al., 2017) concurred that social sustainable performance fosters stronger relationships between the community and stakeholders, enhances work safety, improves the work environment, and raises living standards within the surrounding community.

Moderating Role of Environmental Uncertainty

Environmental dynamism encompasses the speed, unpredictability, volatility, and level of instability in the environment surrounding the organization. Dynamism of the environments is often marked by shifts in technologies, rapid changes in customer needs and choices, and variations in demand for the products or the availability of materials (Sugiono, Rahayu, Wibowo, & Hurriyati, 2024). While research has established the significance of environmental dynamism in moderating the connection between leadership and different performance dimensions (Waldman et al., 2004), there is a limited amount of evidence regarding its impact on the relationships between entrepreneurial bricolage and sustainable performance specifically.

In the study conducted by (Ensley et al., 2006), it was discovered that the impact of leadership on growth performance is significantly moderated by environmental dynamism. The effectiveness of leadership is more pronounced in dynamic environments compared to stable ones. In situations where the environment remains relatively stable with minimal technological advancements or negligible shifts in customer preferences, dynamic leadership decisions may be considered costly. Consequently, the association between a firm's leadership and sustainable performance could weaken, or even exhibit a negative correlation.

In a constantly changing and volatile business landscape where opportunities arise and threats from competitors persist, the uncertainty of the environment diminishes the competitive posture and potential impact of leadership decisions. This compels enterprises to navigate frequent and intricate changes, heightening the crucial role of talent (Li & Liu, 2014). Furthermore, the research findings also bear testimony to the fact that the association of capabilities with firm performance is not significant in a stable environment. However, in dynamic business settings, this relationship is positive and significant thereby showing its moderating role (Drnevich & Kriauciunas, 2011).

Kakkar and Sivanathan (2017) suggests that in periods of uncertain socioeconomic circumstances and conditions, skilled employees tend to favor leadership that is more assertive. During times of increased environmental uncertainty, these talented individuals may exhibit greater receptiveness to leadership direction, leading to increased commitment, valance, and a stronger belief in the effectiveness of proposed changes. Research within the resource-based view has progressively acknowledged that the strategic significance of the organizational resources, like talent management, or capabilities, is contingent upon particular market contexts (Ghobakhloo et al., 2024). In uncertain environments, changes occur swiftly and on a larger scale. The reasons behind the change may be unclear, and the operational metrics may not be dependable to devise some stable response. In such circumstances, leaders motivate

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individuals to perceive the evolving environment as an opportunity instead of viewing them as confusion and chaos. When seen in such context, turbulent environments afford leaders higher freedom, as they foster a collective belief that radical change and exploratory innovations rendered essential for addressing the external shifts (Jansen, Vera, & Crossan, 2009).

On the flip side, in stable settings, the presence of consistent demand and minimal fluctuations serves as a facilitator for the development of human resources or leadership decisions (Azadegan et al., 2013). In such a stable environment, the capacity to predict and identify the factors contributing to changes can significantly improve problem-solving in human resources or leadership. To put it succinctly, a stable environment amplifies the enduring performance advantages of talent management and leadership due to the ease of harmonizing production processes, decreased ambiguity, and a higher focus on eliminating waste (Azadegan et al., 2013). Entrepreneurial bricolage offers a strategy for companies with constrained resources to foster growth (Baker & Nelson, 2005). Simultaneously, the restructuring of available resources presents an opportunity to address unforeseen demands (Wu et al., 2017). In alignment with these concepts, this study elucidates the mechanisms through which SMEs expand and adjust to environmental turbulent situation, examining the perspective of entrepreneurial bricolage. The foundational concept of the resource orchestration theory is rooted in the environmental context (Sirmon et al., 2007). Scholars suggest that entrepreneurs must adeptly navigate resource mobilization and allocation dynamically in accordance with environmental circumstances (Cui et al., 2022). Factors in the external environment, particularly uncertainty, play a decisive role in shaping bricolage through their impact on resource management behaviors (Senyard et al., 2015; Wu et al., 2017). The degree of instability and rapid changes within a particular environment is reflected in environmental uncertainty (Azher et al., 2025). This condition is marked by instability, complexity, and competitive dynamics, creating an atmosphere of uncertainty for businesses (Duncan, 1972). Driven by the objective to sustain competitive edge in environments characterized by high uncertainty, startups need to innovatively integrate resources and offer novel solutions (Ma & Yang, 2022).

In situations of uncertainty, SMEs are more likely to capitalize on opportunities through the practice of bricolage, as suggested by (Senyard et al., 2014). This approach facilitates the unexpected reconfiguration of resources (Senyard et al., 2015). The impact of bricolage on business model innovation and creative deployment of existing resources is further strengthened in the face of increasing uncertainty, with available resource timeliness playing a crucial role (Meng et al., 2020). In environments characterized by high levels of uncertainty, start-ups can improve their management of resources to foster remodeling the business (Wu et al., 2017). In ever-evolving settings, bricoleurs find numerous chances to stay actively involved, utilizing their diverse skill sets to devise innovative solutions in the face of fluctuating challenges and opportunities. This operates as a mechanism for boosting the organization’s overall performance including the sustainable dimensions.

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Theoretical Background

Capitalizing on the insights stemming from the resource orchestration theory, this study suggests an integrated model that draws on understanding how to attend and address resource constraints and respond uncertainty in the context of sustainable performance of SMEs. Resource orchestration theory posits that effective management of resources is critically important for accomplishing the desired organizational goals (D'Oria et al., 2021; Nason & Wiklund, 2018; Sirmon et al., 2011). Resource orchestration theory is employed to understand the phenomenon that organizational performance is predicative upon and determined not solely by resource management efficiency but equally by congruence with external environments (Sirmon et al., 2007). Consequently, it is argued that relationship of entrepreneurial bricolage with sustainable performance of SMEs is susceptible to the influence of environmental uncertainty.

Furthermore, principles of resource orchestration theory present a comprehensive model that explains the connection between resource management (bricolage) and organizational resources (entrepreneurial networks) that will ultimately influence the sustainable performance. Bricolage, with its focus on adaptive resource utilization and the combination of available resources, aligns with the fundamental tenets of resource orchestration, as articulated by (Do Vale et al., 2021; Korsgaard et al., 2021).

In uncertain environments, bricolage come up with numerous opportunities of active engagement and utilization of the varied skill to create innovative solutions to address unpredictable challenges and opportunities. such active engagement tends to strengthen the overall firm performance. Flexible response with improvisational bricolage behavior also positively influence performance especially in the uncertain environments (Miles, Covin, & Heeley, 2000; Xie, Wang, Xu, & Cui, 2025), which emphasize the greater significance of flexibility in dynamic versus stable environments (Kang, Chaivirutnukul, & Zeng, 2023; Priem, Rasheed, & Kotulic, 1995). Further, the benefits of rapid development become more evident with rising dynamism, where bricolage speedily adjust to changes in the market demand (Mateus & Sarkar, 2024a; Priem et al., 1995) through improvisational bricolage approaches (Baker et al., 2003).

Though the solutions created by makeshift methods sound imperfect or unconventional, they appear to meet the intended purpose in an effective manner, even if temporarily where no earlier solution existed (Gundry et al., 2011), thereby strengthening overall firm performance. Research highlight that bricolage have the tendency of exhibiting a permissive disregard for traditional design rules and the archetypal social significance attached with resources in the business environments. Oftentimes, they utilize discarded items usually undervalued by others in the industry (Baker & Nelson, 2005). Through collection of different resources, bricolage tend to formulate unique and idiosyncratic solutions with the readily available materials.

In uncertain environments, the rules concerning the resources and their utility are more adaptable, provided the unexpected reconfiguration of market. Such flexibility brings forth enhanced and diverse opportunities to salvage valuable resources that lead to the generation of supplementary innovative solutions. Therefore, this

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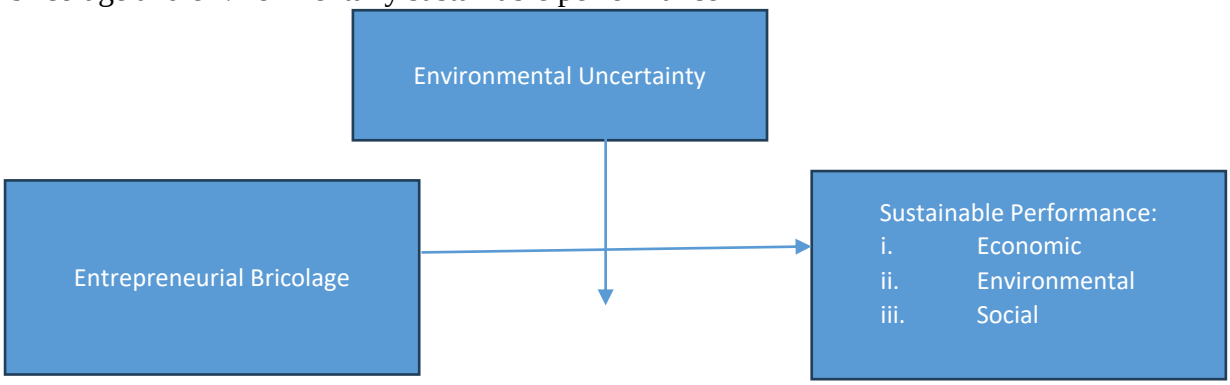
strengthens and supports the relation between bricolage and firm performance. In the increasingly uncertain environments, there is a recognition for and a tendency to embark on innovations, with markets prone to experimenting with new offerings as compared with stable environments. This further reinforces the relation of entrepreneurial bricolage with firm performance. These arguments lead to the formulation of the following hypotheses:

H_1: Environmental uncertainty moderates the relationship between entrepreneurial bricolage and economic sustainable performance

H_2: Environmental uncertainty moderates the relationship between entrepreneurial bricolage and social sustainable performance

H_3.: Environmental uncertainty moderates the relationship between entrepreneurial bricolage and environmentally sustainable performance



Methodology

The present study capitalizes on a cross-sectional strategy because the main goal is to collect survey data at one specific point in time and evaluate all study variables in a short amount of time (Mann, 2003). The scale and measurements employed in this investigation are adopted from the earlier studies, with suitable adjustments made to accommodate the expected participants and circumstances. Primarily the questionnaire has been exhausted in two sections. While the first section is specifically meant to collect demographic data from the SME owners, founders or executives taking part in this study, the second section contains a number of items or statements intended to quantify the variables. For assessment of the response in terms of the agreement or disagreement vis-à-vis a particular statement in the survey questionnaire, Likert scale was applied for answering each item (Uma Sekaran & Bougie, 2016). The 7-point Likert scale crafted and created by (Likert, 1932) has been employed by this study to determine if the respondents either agree or disagree with the items statements spelled out in the survey questionnaire on a continuum ranging from strongly disagree to strongly agree (7). According to (Bougie & Sekaran, 2019; Uma Sekaran & Bougie, 2016), this scale is frequently used to evaluate the strength of respondents' opinions. A structure survey questionnaire was administered to the randomly selected participants to collect data. The distribution considered the representation of employees of different genders. The unit of analysis is the individual in accordance with (Uma Sekaran & Bougie, 2016) methodology.

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Table 1. Measurement Scales for the Study Variables

Construct/variable	Number of Items	Adopted from/Source
Entrepreneurial Bricolage	8	Senyard et al. (2009)
Environmental Uncertainty	4	(Jaworski and Kohli, 1993; Wang et al., 2011)
Sustainable Performance:		
Social	5	Paulraj, (2011)
Economic	4	Eltayeb et al. (2011), Klassen & McLaughlin, (1996), Rao and Holt (2005), Wagner, (2005)
Environmental	5	Laosirihongthong et al., (2013)

This study focuses on founder, executives, and/or managers serving the SMEs in the major industrial cities located in the southern part of the province of the Punjab. Similarly, it is thought most appropriate for a number of reasons that executives and managers serve as the units of study in this research.

It is asserted that the theme of sustainable performance has been the subject of a wide variety of research studies undertaken previously by the scholars extensively (Afum et al., 2020; Nor-Aishah et al., 2020; Saqib & Zhang, 2021). It sounds noteworthy that these studies recruited a consistent sample of managers and executives for data collection. Since they lie at the helm of affairs within the organizations, therefor, the managers and executives were the only ones included in the survey for this study (Latan et al., 2018). Further, in most of the cases, founders also act as the executives and managers and are invested with the decision-making and policy-formulation; therefore, they extend a more holistic understanding of sustainability practices (Patil & Sarode, 2019). Therefore, the information was exclusively gathered from management personnel, because they wield the most comprehensive understanding of the organization's standard operating procedures and policy parameters.

Notable SMEs representing a diverse range of business have been chosen. Since most of the SMEs in the South Punjab are based in Bahawalpur, Bahawalnagar, Rahim Yar Khan, Multan, Vehari, Khanewal, Layyah, Bhakkar, Muzaffargarh, Lodhran, Dera Ghazi Khan, Rajanpur, and Jhang, therefore, so these cities have been included in the data collection stream. Another touchstone and the criterion for selection of these cities is the fact that the SMEs operating in these areas are registered with the chamber of commerce and industries governing these industrial hubs (Khan, Yang, & Waheed, 2019).In concurrence with this suggestion, the present study planned a

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sample within this range and floated 500 questionnaires among the target SMEs and details of the distribution of survey questionnaires is populated in Table 2.
Data and contact details of the SMEs were obtained from the SME Business Facilitation Center Multan and the respective chambers of commerce and industries in the selected cities. Also, it is worth noting that this sample size adheres to all relevant standards that govern determination of appropriate sample size in research investigations, which was believed to be a true representative of the population.

Table 2. SMEs in selected cities of South Punjab

Sr. No.	City	Sample
1	Multan	60
2	Dera Ghazi Khan	60
3	Layyah	58
4	Vehari	55
5	Bahawalpur	50
6	Bhakkar	50
7	Lodhran	50
8	Muzaffargarh	30
9	Rahim Yar Khan	25
10	Bahawalnagar	20
11	Rajanpur	20
12	Khanewal	15
13	Jhang	7
Total		500

In the wake of completion of data collection process, responses were keyed into the SPSS datasheet. Version 23.0 of the software was used to set the process of analysis into motion. The analysis employed the descriptive statistical methods and Structural Equation Modeling (SEM), commonly acknowledged and recognized for being second-generation multivariate analysis technique.

Results and Analysis

Table 3 exhibits the descriptive analysis with statistics of participants' demographic components.

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Table 3. Descriptive statistics for demographic variables

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	179	58.7	58.7	58.7
Females	126	41.3	41.3	100.0
25-30 Years	63	20.7	20.7	20.7
30-35 Years	60	19.7	19.7	40.3
35-40 Years	37	12.1	12.1	52.5
40-45 Years	59	19.3	19.3	71.8
45-50 Years	26	8.5	8.5	80.3
Above 50 years	60	19.7	19.7	100.0
General Manager	196	64.3	64.3	64.3
Middle Management	104	34.1	34.1	98.4
Senior Management	5	1.6	1.6	100.0
Matric	240	78.7	78.7	78.7
Intermediate	35	11.5	11.5	90.2
Bachelors	13	4.3	4.3	94.4
Masters	4	1.3	1.3	95.7
MS/M.Phil	2	.7	.7	96.4
PhD	11	3.6	3.6	100.0
Less than 3 years	89	29.2	29.2	29.2
4-7 years	36	11.8	11.8	41.0
8-10 years	25	8.2	8.2	49.2
11-15 years	37	12.1	12.1	61.3
16-20 years	21	6.9	6.9	68.2
above 20	97	31.8	31.8	100.0

Since, the composite reliability and Cronbach's Alpha are common techniques used to assess reliability. The range of CA is from 0.748 to 0.917, while the range of CR is from 0.846 to 0.933. Both CR and CA indicate good reliability, exceeding the recommended threshold of 0.70 (J. F. Hair et al., 2011).

Table 4. Composite reliability and Cronbach's Alpha

Construct	CA	CR
Entrepreneurial Bricolage	0.917	0.933
Environmental Uncertainty	0.748	0.846

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Sustainable Performance (Economic)	0.859	0.915
Sustainable Performance (Environmental)	0.898	0.936
Sustainable Performance (Social)	0.896	0.927

It is observable that composite reliability for every construct exceeds the benchmark of 0.70. These values satisfied the threshold representing that items of constructs bear satisfactory index of consistency.

Table 5 discloses AVE of latent variables fall within the range from 0.585 to 0.830, with the maximum AVE. Notwithstanding the range, all values exhibit sufficient convergent validity. Therefore, it is argued with sufficient evidence that all latent variables hold sufficient variance.

Table 5. Average Variance Extracted

Construct	**AVE**
Entrepreneurial Bricolage	0.666
Environmental Uncertainty	0.585
Sustainable Performance (Economic)	0.782
Sustainable Performance (Environmental)	0.830
Sustainable Performance (Social)	0.762

Table 6 present investigation demonstrate discriminant validity according to Fornell-Larcker criterion.

Table 6 Discriminant validity according to Fornell-Larcker criterion

	1	**5**	**6**	**7**	**8**
Entrepreneurial Bricolage	**0.816**				
Environmental Uncertainty	0.556	**0.765**			
Sustainable Performance (Economic) (6)	0.481	0.605	**0.885**		
Sustainable Performance (Environmental) (7)	0.412	0.505	0.735	**0.911**	
Sustainable Performance (Social) (8)	0.350	0.337	0.604	0.632	**0.873**

For the present study, the results of discriminant validity HTMT are populated in Table 7.

Table 7 . Heterotrait-to-monotrait ratio of correlations (HTMT)

Entrepreneurial Bricolage					

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Environmental Uncertainty	0.667				
Sustainable Performance (Economic)	0.531	0.736			
Sustainable Performance (Environmental)	0.440	0.601	0.834		
Sustainable Performance (Social)	0.374	0.405	0.685	0.703	
Environmental Uncertainty x Entrepreneurial Bricolage	0.055	0.374	0.360	0.282	0.700

Table 8 demonstrate a summarized version about examination of structural model. It contains direct paths relationship, t-stats, and p-value obtained for assessment. Coefficients of direct hypotheses along with the corresponding t-stats and p-values are populated in the table to decide whether hypothesized relationships satisfy the criterion for being statistically significant or not.

Table 8. Direct path results for mediation assumptions

Relationships	Beta	T -value	P values
Entrepreneurial Bricolage -> Economic Performance	0.223	3.795	0.000
Entrepreneurial Bricolage -> Environmental Performance	0.182	3.451	0.001
Entrepreneurial Bricolage -> Social Performance	0.215	3.195	0.001

SmartPLS3 simplifies and streamlines the intricacies connected with manual calculations to find out f^2 with the provision of an orderly and organized table populating the f^2. Corresponding to the advice of (Cohen, 2013), f^2 carries some benchmarks values to evaluate the effect size. Accordingly, the f^2 values 0.02, 0.15 and 0.35 respectively denote small, moderate, and strong effect. Table 10 reflects the effect sizes of independent variables conceptualized for the present study.

Table 9. Effect size of coefficient of determination

Relationships	**f-square**	**effect size**
Entrepreneurial Bricolage -> Sustainable Performance (Economic)	0.055	small
Entrepreneurial Bricolage -> Sustainable Performance (Environmental)	0.030	small
Entrepreneurial Bricolage -> Sustainable Performance (Social)	0.034	small
Environmental Uncertainty -> Sustainable Performance (Economic)	0.171	moderate,
Environmental Uncertainty -> Sustainable Performance (Environmental)	0.096	minimal
Environmental Uncertainty -> Sustainable Performance (Social)	0.029	moderate,
Environmental Uncertainty x Entrepreneurial Bricolage -> Sustainable	0.050	moderate,

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Performance (Economic)		
Environmental Uncertainty x Entrepreneurial Bricolage -> Sustainable Performance (Environmental)	0.026	moderate,
Environmental Uncertainty x Entrepreneurial Bricolage -> Sustainable Performance (Social)	0.000	minimal
Entrepreneurial Self-Efficacy x Entrepreneurial Leadership -> Entrepreneurial Bricolage	0.000	minimal

Assessment of Moderating Effect

An interaction model was examined through creation of an interaction term between environmental uncertainty and entrepreneurial bricolage on sustainable performance. The interaction term must be significant to mark the presence of a moderating effect (Becker, Ringle, & Sarstedt, 2018). Table 4.11 reflects the findings of moderation analysis.

Table 4.1 Moderation analysis

Path	Beta Coefficient	STDEV	T Values	P values
Ent Unc x Ent Bri -> SP Eco	-0.160	0.039	4.088	0.000
Ent Unc x Ent Bri -> SP Soc	-0.014	0.047	0.307	0.759
Ent Unc x Ent Bri -> SP Env	-0.127	0.035	3.589	0.000

This study made use of route coefficients to showcase the moderating impact of environmental uncertainty on entrepreneurial bricolage-sustainable performance relationship by application of the procedures drawn by (Sharma, Durand, & Gur-Arie, 1981), (Aiken et al., 1991), and (Dawson, 2014). It is illustrated with figures that environmental uncertainty served as moderator on the interaction of entrepreneurial bricolage and sustainable performance. Results exposed that environmental uncertainty negatively moderated the entrepreneurial bricolage-sustainable performance linkage. Figure 1, 2 and 3 illustrate a pictorial presentation of the study results.

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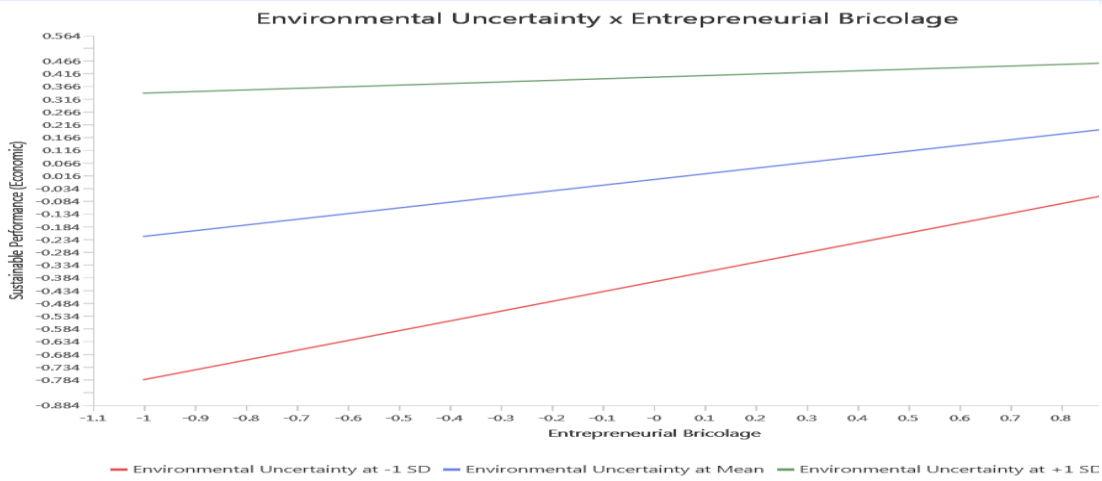

Figure 2 Environmental Uncertainty x Entrepreneurial Bricolage

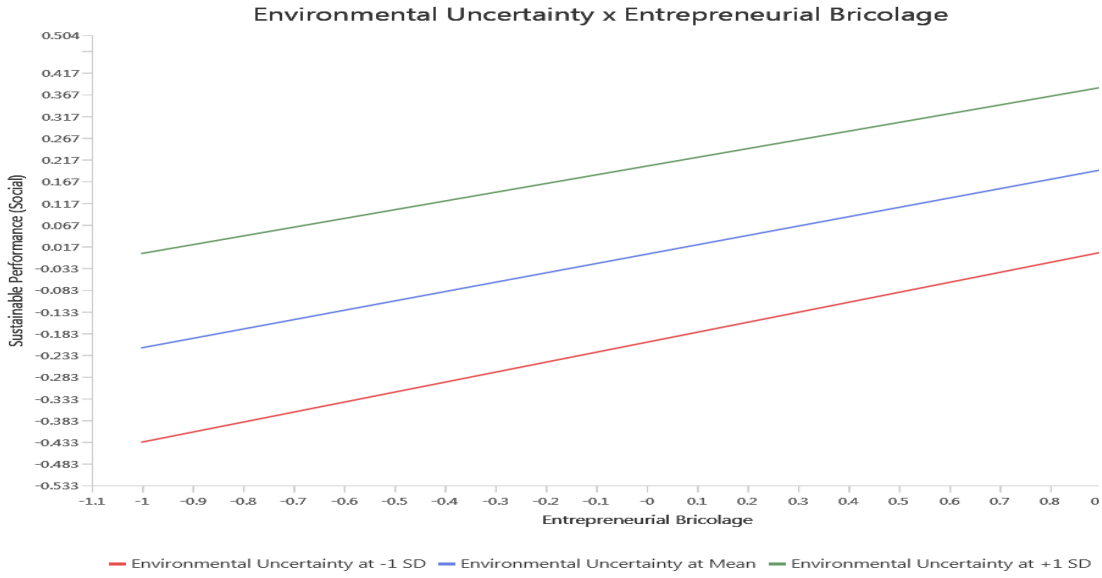

Figure 3 Environmental Uncertainty x Entrepreneurial Bricolage

The findings indicate that environmental uncertainty significantly moderates the relationship between entrepreneurial bricolage and economic sustainable performance (β = -0.160, t = 4.088, $p < 0.001$). Hence, H_1 is supported. Further, the environmental uncertainty does not significantly moderate the relationship between entrepreneurial bricolage and social sustainable performance (β = -0.014, t = 0.307, p = 0.759). Hence, H_2 is not supported. The environmental uncertainty significantly moderates the relationship between entrepreneurial bricolage and environmentally sustainable performance (β = -0.127, t = 3.589, $p < 0.001$). Hence, H_3 is supported.

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Conclusion and Recommendations

The present study attempted to examine the moderating role of environmental uncertainty on entrepreneurial bricolage-sustainable performance (economic, environmental, social). Results of the data analysis discovered that environmental uncertainty negatively moderated the relationship, which implies that the moderator weakened the relationship. Although, entrepreneurial bricolage supports the sustainability in some conditions by aiding SMEs for creative utilization of scarce resources to meet economic benefits, environmental responsibility, and social impact but, given the high uncertainty, the positive impact of bricolage upon sustainability diminish. Such findings carry important implications in comprehending the challenges faced by SMEs while negotiating and navigating volatility prevalent in the environment. Particularly, it is suggested that bricolage notwithstanding its usefulness under unstable or moderately uncertain circumstances, its utility gets compromised if uncertainty assumes high proportions. In such conditions, unpredictable market situations, regulatory shifts, or resource availability tend to undermine the capability of SMEs to leverage bricolage for achieving sustainable outcomes since resource reconfiguration alone is not enough to offset the risks and instability coming along with environmental certainty. The present study spotlights the boundary conditions wherein bricolage supports sustainable performance. Negative moderating impact of environmental uncertainty accentuates the shortcomings of bricolage as some strategic tactic under uncertain conditions and identifies the need for supplementary capabilities or adaptive policies for complementing bricolage in high uncertainty. Accordingly, the adaptability and risk management are emphasized in uncertain conditions by the findings of this study. In order to maintain the sustainable performance, especially under economic and environmental spheres, owners of SMEs can seek advantage from combination of bricolage with additional strategic practices like scenario planning, diversification, and alliance with outside associates to buffer against uncertainty.

Entrepreneurial bricolage is usually featured by short-term, reactive problem-solving, which requires entrepreneurs to “make do” with creative consumption of existing resources (Baker & Nelson, 2005). Entrepreneurial bricolage may focus on short-term goals under uncertain environment that may hinder implementation of strategies devised for sustainable performance in long-run. For instance, economic sustainability calls for consistent cost management and innovation, not usually fully supported in uncertain environments. Uncertainty perhaps places limitations on the relevance of creative and ad-hoc solutions, which may give rise to inconsistent or ineffective economic outcomes. Environmental and social sustainability frequently require continuing strategic planning in addition to process development to mitigate environmental impact or enhance community involvement. Whereas under the volatile circumstances, the improvisational nature of entrepreneurial bricolage may not offer the stability or resources necessary for achieving the long-term ambitions.

Secondly, entrepreneurial bricolage depends on creative configuration of limited resources whereas such resources might be much constrained or inconsistent to

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influence sustainable performance under environmental uncertainty. Moreover, such resources are subject to fluctuation for repurposing that tend to constrain the usefulness of bricolage aptitude because the entrepreneurs are less likely to depend upon stable and predictable availability of resources.

Thirdly, entrepreneurial bricolage stereotypically attends innovative, low-cost, and immediate solutions, that are less likely to accord with the exhaustive requisites of sustainability. In the face of uncertainty, coping with immediate operational challenges takes precedence over the sustainability goals that may be potential reason for the insignificant moderation of environmental uncertainty on the entrepreneurial bricolage-social sustainable performance linkage. In the similar vein, social sustainability focuses on community engagement, fair labor practices, and social responsibility, which demand concerted strategic implementations not typically afforded by the bricolage behavior under changing environment especially in case of resource-constrained SMEs.

Fourthly, environmental uncertainty gives rise to a situation typical of complexity and risk thereby that may compromise the capacity to attain consistent performance under high uncertainty.

Fifthly, another limitation of the bricolage behavior lies in its focus on small-scale solutions, which probably may not be scaled up or replicated through larger operations. This tendency becomes more pronounced under environmental uncertainty when entrepreneurs extend the innovative solutions into systematic processes to reinforce sustainability over a larger scale. Bricolage behavior, per se, emphasize small, context-specific solutions, which are less likely to materialize into substantial environmental performance enhancements, particularly under uncertain environments. In the similar manner, social sustainable performance demands consistent, scalable community involvement, and corporate social responsibility initiatives, not ordinarily attainable by ad-hoc and innovative solutions.

Practical Implications and Contributions

To benefit the owners of SMEs, the current research spotlights the significance of creating a mindset of resourcefulness. Findings urge upon the owners to foster a culture of experimentation and encourage personnel to improvise and make-a-do with available resources with certain caveats to reach different sustainability goals. Training and orientation session may emphasize teaching bricolage techniques to motivate sustainable outcomes specifically in economic and environmental initiatives. Owners of the SMEs are required to place networking strategies at priority to improve sustainable performance by linking with associates who sponsor resource-sharing, eco-friendly approaches, and community engagement. Owners of the SMEs are likely to gain knowledge, skills, and abilities to facilitate sustainability targets through active participation in business networks and industry associations. In addition, SME owners may leverage the networks to explore sustainable patterns like green technology and fair trade that can be applied through creative resource reconfiguration to enhance both environmental and social performance.

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Policy-makers should also identify the significance of bricolage in promoting sustainability in SMEs. Through development and implementation of programs which support innovative resource usage and networking, government can be helpful for SMEs to accomplish sustainability ambitions. Such policies may include tax breaks for sustainability-oriented creativity, donations for SMEs demonstrating efficient resource reconfiguration, and financing for networking campaigns. Further, sustainability incubators or innovation hubs may also be established for fostering collaborative networks and resource-sharing among SMEs. It is also worth considering for the SMEs to incorporate bricolage into sustainability strategies if they want to enhance sustainable performance. Identification and creative leveraging of underutilized assets through networking paves the way for SMEs to attain economic, environmental, and social targets without acquisition of significant additional resources. To exemplify, owners of SMEs may consume recycled materials in production, enter into partnerships to reduce waste, or create joint corporate social responsibility drives to combine social benefits with cost-efficiency. Practical training modules directed towards both networking techniques and bricolage behavior may equip owners of SMEs with skills to enhance sustainability. Workshops aimed at addressing how to recognize and recombine resources creatively, foster effective networking, and appreciate sustainable corporate models will be of vital utility. Additionally, case studies spotlighting the proven SME sustainability drives through bricolage may motivate owners to apply comparable strategies in their own firms.

Limitations and Future Research Directions

Notwithstanding these limitations, this research suggests some potential avenues for future exploration. Future studies are urged upon to collect data from multiple informants like business owners and operational employees wherein owners could respond to items concerning the sustainable performance and environmental uncertainty, whereas the operational employees asked to rate and entrepreneurial networking items. Besides, the conceptual framework could be tested and replicated in other countries, and that too in specific sectors like service-oriented industries to see the results on a global scale. Finally, it would be valuable to explore the potential of considering entrepreneurial bricolage as an independent variable to assess its impact on sustainable performance. Since this study was undertaken exclusively in South Punjab, Pakistan and focused the SMEs sector. Therefore, the findings may not be generalizable to other context, countries, or other sectors. For all these reservations and restrictions, this research still offers fresh insights into the element of conceptual framework within the context of SMEs located in South Punjab, Pakistan.

Moreover, the predominance of quantitative research marks the need for more qualitative and mixed-methods study for capturing the complexities and nuances of the study variables. Particularly, case studies and interviews can be helpful for deeper insights into the lived experiences of SME owners/managers and the contextual factors influencing their practices.

To the extent of current study, independent and dependent variables rely on subjective perceptions; consequently, further studies should integrate objective-oriented metrics

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in place of employing perceptions-based data in the research method to lessen the amount of common method variance. Additionally, future research needs be carried out through dyad approach to collect data from both owners/managers and employees during the survey for controlling the common method bias.

Thirdly, this study has been performed on the owner/managers (upper level), so findings come up with generalization from the viewpoint of upper-level stakeholders. However, the generalization of results could be expanded through enrolling mid-level and lower-level personnel because they have control over the performance of firm. Accordingly, it is advocated that further study should be held to accommodate these participants too.

Fourthly, the present study remined confined to the 500 SMEs situated in 13 districts of South Punjab, Pakistan where only a small proportion of SME employees are engaged. Consequently, the findings of this study do not account for the responses of the remaining employees of SMEs in this region. Therefore, future study may be conducted on other districts of the region to substantiate the results of the current study.

Fifthly, the study participants' demographic variables like age, gender, education, entrepreneurial experience, business years, firm size, and firm type have been considered as a control variable. Therefore, it is advisable to recommend that future researchers may involve the demographic variable as a moderating or mediating variable in order to assess how participants' demographic status like age, gender, job experience, education level etc. influence the sustainable performance of the organizations.

Sixthly, survey questionnaire was self-administered and the researcher was not present in-person to collect data that may have led some respondents to express their opinions without completely understanding the statements because of their moderate educational level. So, the interview method may be applied to conduct future research particularly when dealing with such respondents. Lastly, the analysis of this study is quantitative by nature and is conditioned on the survey data. Further, the survey questionnaire was close-ended which could not solicit the opinions of the respondents. To address this issue, qualitative study is proposed in future so that views of the respondents could be incorporated in the findings to validate the results of the present study. Another alternative will be to apply mixed method research with both qualitative and quantitative analysis so that diversified perspectives could be attained to gauge the sustainable performance of the SMEs.

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Appendix-1

Questionnaire

Please fill in the appropriate response where indicated for each and every question.

Gender Male ☐ Female ☐

Age ☐ 25-30 Years ☐ 30-35 Years ☐ 35-40 Years ☐ 40-45 Years ☐ Above 45 Years

Position: ☐ General Manager ☐ Senior Management ☐ Middle Management

Education: ☐ Matric ☐ Intermediate ☐ Bachelors ☐ Masters ☐ MS/M.Phil ☐ PhD

Entrepreneurial ☐ Yes ☐ No

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Experience:
Business years established:

Less than 3 y ☐ 4-7 years ☐ 8-10 years ☐ 11-15 years ☐ 16-20 years ☐ above 20 ☐

Firm size (Nik-Wan et al.): 1-20 ☐ 21-50 ☐ 51-100 ☐ 101-150 ☐ 151-300 ☐ above 300 ☐

Industry: Manufacturing ☐ ervice ☐ other ☐

Enterprise Type ☐ Public ☐ Private ☐ oth

Department: ---------- Designation: ---------- Organization: ----------

Please use the following scale to respond to the questions that follow and put the tick mark (√) that corresponds to your response or feeling about each particular question. It is very important that you do not skip any question because each question is needed for analyzing the survey. These responses will be used for research purpose only and confidentiality of the respondents will be maintained.

Description: 1=strongly disagree, 2= disagree, 3=neutral, 4=agree, 5=strongly agree

Sr.#	Questions	1	2	3	4	5	6	7
A	Entrepreneurial Bricolage:							
	In this company							
6	We are confident of our ability to find workable solutions to new challenges by using our existing resources							
7	We gladly take on a broader range of challenges than others with our resources would be able to							
8	We use any existing resource that seems useful to responding to a new problem or opportunity							
9	We deal with new challenges by applying a combination of our existing resources and other resources inexpensively available to us							
10	When dealing with new problems or opportunities we take action by assuming that we will find a workable solution							
11	By combining our existing resources, we take on a surprising variety of new challenges							
12	When we face new challenges we put together							

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	workable solutions from our existing resources							
13	We combine resources to accomplish new challenges that the resources were not originally intended to accomplish							
B	Environmental Uncertainty:							
14	Products and services become outdated very quickly in our market							
15	Firm's failure rate in our industry is very high							
16	Competitive directions are ever changing in our market							
17	Our customers regularly ask for new products and services							
C	Sustainable Performance:							
	Economic							
18	Our firm has improved its market share							
19	Our firm has improved its image							
20	Our firm has improved its position in the marketplace							
21	Our firm has increased its profits							
Environmental								
22	Our firm has improved compliance with environmental standards							
23	Our firm has reduced CO2 emissions							
24	Our firm has reduced energy consumption							
25	Our firm has reduced material usage							
26	Our firm has reduced the consumption of hazardous materials							
Social								
27	Our firm has improved or enhanced the overall stakeholder welfare							
28	Our firm has improved the community's health and safety							
29	Our firm has reduced environmental impacts and risks to the general public							
30	Our firm has improved occupational health and safety of employees							
31	Our firm has improved the awareness and protection of the claims and rights of the community served							