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RESEARCH ARTICLE

Rural entrepreneurship: leveraging social media for circular economies and green activism

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Abstract This study builds on the dynamic capability view to propose that rural entrepreneurs' social media use is positively related to circular economy practices and green activism. Drawing on time-lagged data from 307 rural entrepreneurs, the results reveal significant positive associations, with green knowledge acquisition mediating these relationships. Furthermore, entrepreneurs' political skill moderates the effect of social media use on green knowledge acquisition, strengthening its role in enabling sustainable outcomes. These findings highlight the potential of social media to drive environmentally responsible practices and advocacy in rural communities. By enabling rural entrepreneurs to adopt circular economy practices and engage in green activism, social media fosters environmental conservation and empowers individuals' participation in sustainability efforts. This study contributes to research on rural entrepreneurship, social media use, and sustainability by identifying key mechanisms and boundary conditions, while offering practical implications for supporting environmentally responsible innovation in resource-constrained rural economies.

Plain English Summary This research focuses on the interface of rural entrepreneurship and sustainability and suggests that social media use enables rural entrepreneurs to turn limited resources into powerful tools for the welfare of rural communities. In particular, the findings show that, when rural entrepreneurs use social media, they can effectively implement circular economy practices (e.g., reducing waste and reusing resources) and engage in green activism to protect the environment. Our results also reveal how the acquisition of

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green knowledge through social media explains these positive effects, while rural entrepreneurs with strong political skills are effective at turning digital engagement into sustainable outcomes. The principal implication of this study is that rural entrepreneurs, support agencies, and policymakers should view social media not merely as a communication channel but as a low-cost driver of environmental innovation. Enabling rural businesses to effectively use social media can contribute to sustainability practices, empower communities to address environmental challenges, and foster more resilient rural economies.

Keywords Rural entrepreneurs · Social media use · Political skill · Green knowledge acquisition · Green activism · Circular economy practices · Rural communities · Resource-constrained settings

JEL Classification L26 · M00 · R11

1 Introduction

The significance of rural entrepreneurship has increased considerably in recent years in response to emerging societal challenges, changing market dynamics, and growing disparities (del Olmo-García et al., 2023; Korsgaard et al., 2015). Consequently, its potential to advance inclusive growth has gained substantial scholarly attention (Korsgaard et al., 2015), particularly in areas with economic and environmental vulnerabilities. This growing focus reflects the limitations of traditional development models that have often failed to address the specific needs and structural challenges of rural contexts. In this context, rural entrepreneurs are recognised as key actors in reshaping the rural landscape by fostering economic activities, creating local opportunities, and addressing the unique challenges faced by rural communities (Fortunato, 2014).

Importantly, rural communities are at the forefront of contemporary challenges, such as environmental and climate changes that negatively influence community well-being, economic activities, agricultural productivity, natural resources, and local ecosystems. Existing research mainly focuses on economic development and sustained growth (Fortunato, 2014; Bencheva et al., 2017), with limited attention to how rural entrepreneurs engage with environmental issues. Notably, while scholars have examined rural entrepreneurship and digitalisation separately (Bencheva et al., 2017; Khalid et al., 2025), the intersection between social media use, circular economy practices, and green activism in rural contexts remains largely overlooked. This represents a significant gap given the increasing urgency of sustainability transitions and the greater exposure of rural areas to climate and environmental changes.

Recent technological developments have made social media a vital tool for entrepreneurs to address both societal and business challenges, particularly in resource-constrained settings (Son & Niehm, 2021). For rural entrepreneurs, social media is strategically valuable not only for communication but also for sensing environmental trends, engaging stakeholders, and acquiring context-specific knowledge (Morris & James, 2017; Olalekan, 2024). As an inexpensive yet effective resource, it provides access to sustainable activities and practices, mobilizes community support, and fosters environmentally conscious innovations where formal infrastructure is lacking (Tim et al., 2018). Therefore, this study examines how rural entrepreneurs leverage social media to drive interaction, collaboration, and the adoption of circular economy practices, while also promoting green activism.

Indeed, rural entrepreneurs can benefit rural communities through green activism and circular economy practices. Circular economy practices focus on reducing waste and maximizing resource utilization to deal with environmental challenges (Walker et al., 2022). Existing studies highlight that circular economy practices assist in achieving economic growth (Obeidat et al., 2023), environmental quality (Harris et al., 2021), reducing waste (Barros et al., 2020), and improving the quality of life and well-being of the rural population (de Morias Lima et al., 2021). Similarly, green activism includes actions taken by people outside of the workplace to support pro-environmental initiatives (Usman et al., 2025). It involves fundraising initiatives, contacting governments and officials, signing petitions, and attempting to change people's attitudes toward the environment (SGuin et al., 1998). Previous research suggests that green activism contributes to environmental innovation (Carberry et al., 2019), and economic growth (Heyes & King, 2020) and transforms societies into more sustainable entities (Usman et al., 2025).

Despite the argued importance of circular economy practices and green activism, studies on circular economy practices and green activism are scarce (de Morias Lima et al., 2021; Liaros, 2022; Masullo, 2017) in the rural context. Existing studies primarily focused on urban or resource-abundant contexts, often overlooking the potential of digital platforms in enabling circular economy practices and green activism within resource-constrained rural settings. Thus, this research adopts a capability-based perspective to examine how rural entrepreneurs utilize social media as a dynamic resource for green knowledge acquisition, implementation of circular economy practices, and fostering green activism within organizations and across rural communities.

Rural entrepreneurship offers a unique and theoretically significant context for exploring how social media support circular economy principles and green activism. Indeed, rural entrepreneurs face key challenges, including resource shortages, institutional gaps, and infrastructure deficiencies (del Olmo-García et al., 2023; Korsgaard et al., 2015), underscoring the significance of digital tools as low-cost, high-impact change agents across rural communities. Additionally, since rural communities are usually more community-focused and socially embedded, fostering collective action, local trust, and informal networks is key for creating awareness and implementing environmental practices (Casey et al., 2022; Shao et al., 2024). Importantly, entrepreneurs in urban and technologically advanced settings have easy access to structured ecosystems, resources, and innovation infrastructure. Nevertheless, rural entrepreneurs must update and reconfigure innovative and digital resources to sense opportunities, engage stakeholders, and implement green practices. Due to these contextual reasons, the rural context is not only pertinent but also essential for analyzing how rural entrepreneurs' digital engagement drives sustainability outcomes.

Based on the aforementioned knowledge gaps and to respond to the recent calls (de Morias Lima et al., 2021; Khlystova et al., 2026; Khlystova & Kalyuzhnova, 2023; Liaros, 2022), we build on the dynamic capability view (Teece et al., 1997) to propose the positive relationship between rural entrepreneurs' social media use, implementation of circular economy practices, and promoting green activism in the context of rural areas. Although the dynamic capability view has been extensively employed to understand firm adaptability in technologically advanced and resource-abundant settings (Khalid et al., 2025), its application in rural, particularly resource-constrained settings, remains limited. Indeed, rural entrepreneurs often confront environmental uncertainty, a lack of infrastructure, and institutional challenges that require continuous adaptation and innovation (Son & Niehm, 2021; Tim et al., 2018). In rural settings, dynamic capabilities—such as sensing environmental changes, gaining environmental knowledge, and reconfiguring resources—are essential for implementing circular economy practices and fostering green activism. By integrating the dynamic capability view in the rural entrepreneurship context, this study offers a theoretically supported perspective for investigating how social media empower rural entrepreneurs to foster adaptability and promote long-term change in rural communities.

According to the dynamic capability view, businesses can cultivate and leverage resources and capabilities in response to changing environments (Teece et al., 1997). Drawing on these grounds of the dynamic capability view, we choose green knowledge acquisition as a mediator. Green knowledge acquisition involves the knowledge obtained by firms related to environmental protection and sustainability, and green initiatives (Wang et al., 2020), which is essential for businesses to promote circular economy practices and green activism. Previous studies highlight that businesses must acquire and assimilate green knowledge to achieve competitiveness and environmental goals (Arfi et al., 2018; Borah et al., 2023). It enables firms to better plan and respond to environmental changes and implement green initiatives (Sahoo et al., 2023) that ultimately contribute to building environmentally conscious rural communities.

We further argue that the influence of rural entrepreneurs' social media use on green knowledge acquisition is based on rural entrepreneurs' political skill. Rural entrepreneurs' political skill can be explained as an individual ability to inspire, persuade, and influence others and build networks and relationships with them (Ahearn et al., 2004; Lu et al., 2024) to address market needs and community challenges in rural areas. Studies suggest that individuals high in political skill can enhance organizational performance and creativity, improve coordination, and acquire

resources and key information within and outside the organization (Lu et al., 2024; Usman et al., 2024; Williams Jr et al., 2017). As such, compared to others, rural entrepreneurs with high political skill tend to be more responsive towards environmental changes and assimilate knowledge that ultimately enables firms to implement circular economy practices and promote green activism in rural communities Fig. 1.

2 Theory and hypotheses development

2.1 Dynamic capability view

We draw on the dynamic capability view to support our proposed hypotheses, given its relevance in explaining how firms operate in the uncertain and fast-changing environment (Teece et al., 1997). The dynamic capability view assists in explaining how rural entrepreneurs adapt their strategies and business models in response to challenges such as limited infrastructure, scarce resources, and climate-related disruptions prevalent in rural contexts. Unlike the resource-based view (RBV), the dynamic capability view emphasizes how firms build, integrate, and reconfigure internal and external capabilities to remain competitive and responsive to change (Bowman & Ambrosini, 2003; Wu, 2010). Indeed, uncertainties like scarce resources, climate change, and infrastructure limitations are becoming more and more prevalent in rural communities. The dynamic capability view offers a useful lens through which to view how entrepreneurs recognize new challenges, identify opportunities through creative approaches, and reorganize their resources, particularly digital tools like social media, to achieve sustainable outcomes in challenging situations. It highlights how important it is to gain knowledge, expertise, and skills that can change a company's present resources, practices, and business operations (Ye et al., 2022). Additionally, the dynamic capability view focuses on continuous change, innovation, and adaptation (Gupta et al., 2020). This key difference is particularly crucial in rural areas where conventional, inflexible business models might no longer work. It is more likely that entrepreneurs who can alter and improve business procedures by learning about green issues, interacting with communities, and advocating for sustainable practices will achieve long-term goals and contribute to sustained growth. Thus, the dynamic capability view is a suitable theoretical approach and works well with the goals of rural entrepreneurs aimed at fostering circular economy principles and green activism.

Dynamic capability comprises three elements: sensing, seizing, and reconfiguring (Teece, 2007). The ability of an organization to investigate and

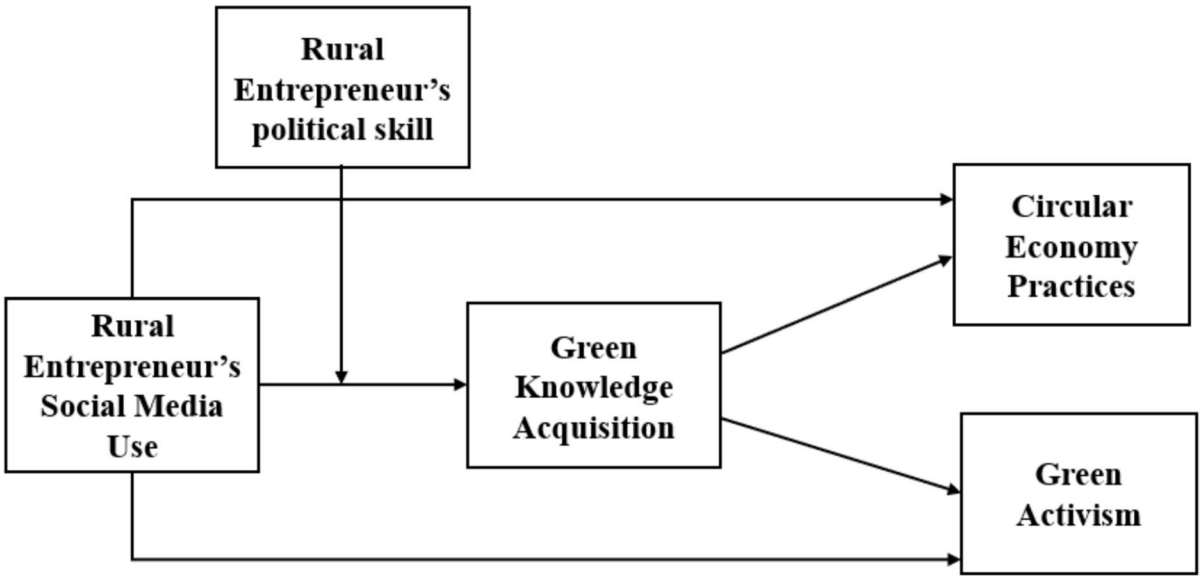

Fig. 1 The proposed model

recognize opportunities both inside and outside of its boundaries, as well as across its whole business value network and ecosystem, is referred to as sensing (Teece, 2007). It entails understanding customers' needs as well as company requirements, developing R&D and technology, and being informed and aware of the innovations produced by business partners (Teece, 2007). Businesses regularly seek business possibilities within and outside of their network to gain a competitive edge and drive growth (Gupta et al., 2020). Seizing occurs once the company has sensed the opportunity; it is defined as realizing the opportunity's potential and value (Teece, 2007). It comprises establishing enterprise boundaries and taking proactive measures to capitalize on new trends, changes in the market, and evolving business needs (Teece, 2007). Lastly, reconfiguring includes changing, restructuring, and reorganizing its capabilities, resources, and organizational structure in response to changes in external settings (Teece, 2007). Evidently, reconfiguration is required to guarantee that the company efficiently takes advantage of the opportunities recognized and mitigates the risks sensed (Vogel & Güttel, 2013). To summarise, the dynamic capability view highlights the importance of being aware of opportunities, taking proactive steps to seize them, and modifying the organizational structure or procedures to fully utilize the identified business potential.

2.2 Rural entrepreneurs' social media use and circular economy practices

According to Teece (2007), businesses must continuously develop, integrate, and reconfigure internal and external resources to address rapidly changing environments. It mainly includes sensing opportunities, seizing them through strategic and proactive responses, and altering skills, expertise, and capabilities to achieve market position. For rural entrepreneurs operating in resource-constrained and often overlooked regions, these capabilities are particularly important to navigate environmental challenges and achieve sustained growth (Khalid et al., 2025).

Rural entrepreneurship is defined as the creation of a new organization that introduces a new product or creates a new market, or applies a new technology in a rural setting (Wortman, 1990). In the current research, we chose social media use by rural entrepreneurs since it allows them to connect, communicate, and engage individuals in activities that contribute to the overall growth and improve the ecosystem. Indeed, social media is deemed an inexpensive but powerful tool that assists rural entrepreneurs to identify market needs and emerging trends, take advantage of environmental opportunities, and alter current practices to achieve environmental goals (Morris & James, 2017; Setyoko & Kurniasih, 2022). By actively engaging on social media, they can sense new environmental aspects (sensing), rally support for eco-friendly initiatives (seizing), and redesign and redevelop their business models by integrating circular economy principles (transforming).

The existing literature highlights that the use of social media by entrepreneurs offers valuable insights and information, such as industry and global trends, market needs, and modern practices and activities (Nawi et al., 2017; Olanrewaju et al., 2020) that can help them to build resilient societies. Moreover, rural entrepreneurs can use social media to advocate for rural empowerment, seek support for community development projects, and increase awareness about contemporary environmental issues. As such, we argue that rural entrepreneurs' social media use is important to support environmentally responsible initiatives and implement the circular economy practices that ultimately help businesses achieve environmental goals and mitigate environmental impact. By leveraging social media platforms, rural entrepreneurs can continuously innovate business operations, processes, skills, and knowledge to sustain competitive advantage and address the environmental challenges in rural communities.

Entrepreneurs' use of social media creates social impact, improves people's lives, assists firms in achieving long-term goals (Drummond et al., 2018; Troise et al., 2022), and fosters continuous improvement and community development (Morris & James, 2017; Son & Niehm, 2021). Entrepreneurs get updated information about the market opportunities and challenges that assist them in designing more comprehensive strategies to deal with environmental challenges (Akpuokwe et al., 2024; Setyoko & Kurniasih, 2022) within rural communities. Through social media platforms, rural entrepreneurs can access information on resource mobilization and optimization that assist them in implementing circular economy practices and achieving environmental goals. Indeed, social media makes it easier to collaborate, obtain timely information, and

learn from peers—all of which are critical for developing dynamic capabilities (Drummond et al., 2018; Nawi et al., 2017). For instance, entrepreneurs might foresee sustainability demands by using digital platforms to sense stakeholder demands and environmental trends. They can take advantage of these opportunities by incorporating circular economy practices (such as recycling, reuse, and eco-design) into their operations. This digital engagement also assists them in reconfiguring their operations and resource use to support waste minimization and environmental resilience. Additionally, they can engage with local people to implement recycling and environmental initiatives, which is essential to reducing carbon footprints and developing environmentally responsible communities (Samsudin et al., 2024). Importantly, the use of social media facilitates rural entrepreneurs in developing innovative and market solutions by involving other key stakeholders (i.e., suppliers and collaborators) that ultimately create a social and environmental impact on rural communities. Moreover, entrepreneurs ensure that resources are efficiently optimized and assigned to the business activities (Veleva, 2021) that assist in implementing the circular economy practices. By leveraging social media tools, rural entrepreneurs can minimize their waste and carbon footprint by developing products that can easily be repaired, reused, recycled, and remanufactured. Consequently, they can address the contemporary environmental challenges and build more resilient societies. This adaptability facilitates them in capturing market opportunities and prioritizing the continuous adoption of sustainable economy practices in small and medium rural organizations. Thus, we argue that rural entrepreneurs' use of social media is essential to sense, seize, and reconfigure resources, capabilities, and operations for environmental innovation, enabling the adoption of circular economy practices in rural settings.

H1: Rural entrepreneurs' social media use is positively related to circular economy practices.

2.3 Rural entrepreneurs' social media use and green activism

Seen through the lens of the dynamic capability view (Teece, 2007), we argue that rural entrepreneurs' use of social media for fostering green activism can be understood through key mechanisms of sensing, seizing, and reconfiguring. Sensing enables rural entrepreneurs to identify emerging environmental threats and sustainability issues affecting rural communities by monitoring online discourse and environmental conversations. They further *seize* these opportunities by rallying people, launching environmental campaigns, and promoting sustainable practices on social media. Lastly, they reorganize by allocating resources, creating new alliances, and encouraging collective environmental initiatives, which contribute to forming social norms and environmentally conscious behavior in rural areas. These dynamic capabilities enable rural entrepreneurs to go beyond adaptation, driving social and environmental transformation across rural communities.

Indeed, green activism is important in rural areas since speaking out about environmental issues in various public and private settings encourages various stakeholders, including individuals, to take constructive actions to stop continuous environmental damage (Heyes & King, 2020), which in turn contribute to sustainable rural communities. Rural entrepreneurs' use of social media can empower individuals and encourage them to participate in activities such as creating awareness, fundraising campaigns, and other individual-level activities that influence the behavior of the rural populations towards the environment. Moreover, green activism involves all activities that individuals engage in outside of the workplace to support environmental sustainability (Fotaki & Foroughi, 2022). By leveraging social media, rural entrepreneurs can sense emerging environmental issues across rural communities, seize these issues by mobilizing local and global support, reconfigure resources, and encourage collective efforts towards fundamental environmental initiatives. This includes activities such as creating awareness, organizing fundraisers, and initiating campaigns that drive environmental awareness at local level (Heyes & King, 2020; Usman et al., 2025). By engaging in green activism, entrepreneurs are not only responding to change but proactively transforming social norms and practices to develop environmentally responsible and resilient communities. Indeed, the effective use of social media by rural entrepreneurs can raise awareness, promote educational campaigns and peaceful protests, and inspire the rural population to work together to address environmental issues. Therefore, we argue that rural entrepreneurs' use of social media fosters green activism through empowering both the

entrepreneurs and rural communities to respond collectively to address environmental challenges. Based on the above considerations, we develop the following hypotheses.

H2: Rural entrepreneurs' social media use is positively related to green activism.

2.4 Rural entrepreneurs' social media use and green knowledge acquisition

According to the dynamic capability view (Teece et al., 1997), firms that effectively sense emerging trends, seize new opportunities, and transform their capabilities are better able to respond to a rapidly changing business environment. Social media is an inexpensive and effective tool that assists in building these dynamic capabilities in resource-constrained rural settings (Morris & James, 2017; Setyoko & Kurniasih, 2022). It enables entrepreneurs to sense emerging environmental trends and sustainability practices by exposing them to recent innovations, global benchmarks, and evolving regulatory developments (Tim et al., 2018). Entrepreneurs then take advantage of this information by internalizing it, incorporating insights from webinars, digital campaigns, and discussions about sustainability to design organizational strategies and achieve environmental objectives. Finally, they can reconfigure their internal processes and operations to improve market efficiency and build sustainable communities.

Through green knowledge acquisition, businesses can improve their market position and competitiveness (Sahoo et al., 2023; Wang et al., 2020). Given that market needs and stakeholder demands are always emerging, businesses must have novel and updated information that contributes towards the improvement and implementation of sustainable business processes and operations (Abbas & Khan, 2023), ultimately making rural communities more resilient. Moreover, acquiring green knowledge provides environmental insights, information, and data that firms can use to promote and implement sustainable and green business activities (Sahoo et al., 2023). Studies suggest that acquiring green knowledge can enable businesses to make informed and market-oriented decisions, foster innovation, and improve continuous learning (Abbas & Sağsan, 2019; Wang et al., 2020). By integrating green knowledge into decision-making, rural-based firms can effectively address environmental challenges while contributing to a more sustainable and resilient future.

The dynamic capabilities view highlights the importance of identifying and considering opportunities as well as reorganizing resources to adapt successfully (Teece et al., 1997). Rural entrepreneurs' use of social media can play a key role in fostering learning, innovation, adaptation, and acquiring key information about emerging business needs and challenges (Morris & James, 2017; Son & Niehm, 2021) that ultimately assist organizations in implementing circular economy practices and promote green activism. At its core, the use of social media by rural entrepreneurs can improve their access to key information, empower them to predict future environmental challenges and climate changes, and enable them to effectively deal with them. Social media allows rural entrepreneurs to directly interact with real-time, community-driven knowledge ecosystems, circumventing institutional and geographic constraints that are associated with traditional knowledge channels. Additionally, it fosters knowledge exchange and broadens access to environmentally sustainable innovations, which are often constrained in rural contexts due to infrastructural and informational limitations.

Indeed, acquiring green knowledge facilitates entrepreneurs to optimize their resources and streamline their business activities in line with the environmental goals that further assist them in staying ahead of their competitors and addressing environmental issues (Çera & Ndou, 2025) in rural communities. With an emphasis on achieving long-term objectives and creating social impact by rural entrepreneurs (Korsgaard et al., 2015), they can encourage firms to acquire, integrate, and improve green information to capture market opportunities, transform business practices, and reduce carbon footprints in rural areas. Additionally, businesses benefit from the use of social media by rural entrepreneurs because they get knowledge about modern green technologies, practices, and sustainable innovations that are essential for implementing circular economy practices. By encouraging the use of digital technologies, businesses can develop creative and innovative solutions, ultimately contributing to competitive advantage (Khalid et al., 2025) and making society more environmentally responsible and resilient.

Rural entrepreneurs' use of social media can enable rural-based firms to efficiently invest and assign resources to business activities and practices (i.e., reduce carbon footprints) that are essential for implementing circular economy practices and promoting green activism in rural communities. Through use of social media, rural entrepreneurs can gain deeper insights into environmental challenges and develop more proactive strategies to reduce inefficiencies and deal with the environmental and climate changes in rural areas. Indeed, leveraging social media use enables rural entrepreneurs to stay updated about environmental changes and adjust resources and strategies to reduce environmental impact, which in turn contributes to circular economy practices and green activism. Using social media offers several key benefits, such as improving skills, knowledge, expertise, and operational efficiencies, and thus enables rural entrepreneurs to sense and seize market opportunities that align with the environmental and economic goals and make rural societies more environmentally responsible. Therefore, rural entrepreneurs' social media use not only enhances their access to environmental insights and information but also increases the possibility that rural entrepreneurs will actively learn about the emerging environmental issues and innovations for developing resilient and future sustainable rural communities. Thus, we propose the following hypothesis.

H3: Rural entrepreneurs' social media use is positively related to green knowledge acquisition.

2.5 Green knowledge acquisition, circular economy practices, and green activism

According to the dynamic capability view, businesses must recognise new risks and opportunities, seize existing ones, and modify their current tactics to better meet the emerging needs and demands in the continuously changing business environment (Teece et al., 1997). Green knowledge acquisition enables firms to streamline and improve their business operations that ultimately assist them in discovering new opportunities and positively contribute to overall performance and growth (Wang et al., 2020). Additionally, green knowledge acquisition advances production processes, techniques, and technical skills that enable firms to be responsive and proactive in addressing environmental challenges (Lin and Chen, 2017; Nureen et al., 2023). Consequently, through green knowledge acquisition, firms can better understand environmental issues and global trends, enabling firms to find more innovative solutions and make proactive market decisions (Arfi et al., 2018). Prior studies highlight that green knowledge acquisition creates value by fostering innovation and creativity, optimising resources, mitigating inefficiencies, and achieving competitive advantage (Abbas & Khan, 2023; Malik et al., 2023). Green knowledge can help firms identify the key areas for improvement, thereby contributing to environmental goals (Sahoo et al., 2023). Acquiring green knowledge assists firms in understanding the core activities and principles of circular economy practices, waste reduction, resource optimisation, and product lifecycle management, thus making small and medium rural-based firms more agile and responsive to environmental challenges and changes. (Al Halbusi et al., 2025).

Green knowledge offers insights about environmental practices, modular design, and eco-friendly production that are important for reducing inefficiencies and improving resource recovery (Polas et al., 2023). Importantly, key information about green technologies and rural entrepreneurs make efficient use of raw materials and optimize the entire value chain to achieve environmental goals. Green knowledge can help firms gain expertise in recycling, repair, and regenerating techniques that ultimately mitigate the environmental impact (Mondal et al., 2023). Small and medium firms can establish collaborations, share resources, and jointly develop creative solutions that improve circularity by acquiring green expertise. Similarly, acquiring green knowledge contributes to green activism as it creates awareness and provides support and skills that are essential to support environmental protection and sustainable practices (Usman et al., 2025) within rural communities. Green knowledge aids people in comprehending important environmental problems like climate change and deforestation that ultimately mobilize rural populations towards developing environmentally conscious communities.

Moreover, green knowledge sharing can foster a culture of continuous learning and environmental protection and encourage individuals to take collective action for a greener future. It enables people to interact successfully with businesses and legislators,

promoting systematic adjustments that prioritize environmental protection. Indeed, green knowledge acquisition offers timely and environmentally driven insights and actions that assist in improving organizational processes and practices, creating awareness, designing educational campaigns, and promoting activities among individuals to respond to emerging market needs and environmental challenges within rural communities. As such, we argue that green knowledge acquisition enables firms to implement sustainable practices and prompt environmental campaigns in rural populations. Thus, we propose the following hypotheses.

H4: Green knowledge acquisition is positively related to circular economy practices.
H5: Green knowledge acquisition is positively related to green activism.

2.6 Green knowledge acquisition as a mediator

Building on the dynamic capability view, we know that green knowledge is an important resource that plays a key role in acquiring competitive advantage to equip firms in developing, improving, and modifying resources to achieve environmental goals (Lin and Chen, 2017; Wang et al., 2020) to implement circular economy practices and promote green activism. Green knowledge acquisition fosters innovation, creativity, and learning that support the achievement of environmental goals (Abbas & Khan, 2023; Malik et al., 2023). Indeed, green knowledge offers deeper insights into sustainable practices that make firms more responsive toward environmental challenges (Al Halbusi et al., 2025), ultimately contributing to more environmentally responsible and resilient rural communities. Thus, the underlying premise of our arguments so far has been that rural entrepreneurs' social media use assists in gaining and acquiring key resources, skills, and expertise (green knowledge) that are essential for sensing business opportunities and making timely and market-oriented decisions for the social and economic impact and greater societal benefits. In turn, green knowledge drives and facilitates firms to optimize resources and operations and adopt green and eco-friendly practices that ultimately contribute to implementing circular economy practices within organizational boundaries and promote green activism by creating awareness and designing campaigns that encourage individuals to take collective action for greener and environmentally responsible rural communities. As such, we argue that green knowledge acquisition acts as a mediator facilitating through which rural entrepreneurs' social media use affects circular economy practices and green activism. Thus, the following hypothesis is developed.

H6: Green knowledge acquisition acts as a mediator of the associations of rural entrepreneur social media use with (a) circular economy practices and (b) green activism.

2.7 The moderating role of rural entrepreneur political skill

According to dynamic capability theory, firms identify opportunities, design proactive plans and responsive strategies, and continuously update their resources to adapt to emerging changes (Barreto, 2010; Teece et al., 1997). Importantly, individuals with political skill engage in activities that influence, inspire, and persuade others, and build strong networks and relationships with them (Lu et al., 2024) that assist firms in acquiring valuable resources to achieve environmental goals. As such, we argue that the relationships of rural entrepreneurs' social media use with green knowledge acquisition, circular economy practices, and green activism are complex, and rural entrepreneurs' social media use may depend on rural entrepreneurs' political skill. In the current study, we contend that rural entrepreneurs' social media use is contingent on rural entrepreneurs' political skill.

Individuals with higher political skills focus on creativity, gaining key expertise, improving organizational performance and creativity (Lu et al., 2024), and effectively responding to external changes by building relationships with key stakeholders (Usman et al., 2024). Given that more focus is placed on acquiring and improving resources, expertise, and organizational practices that are important to capturing market opportunities and business goals, rural entrepreneurs with higher levels of political skill may demonstrate more determination and value for green knowledge. Additionally, due to their ability to understand others and bring value to the overall organization processes, they can better understand environmental challenges,

implement sustainable practices, and create awareness among the rural population for a greener future. Seen through the lens of the dynamic capability view, rural entrepreneurs high on political skill can better capture environmental opportunities, implement sustainable practices, and support individuals' actions outside the firm boundary for developing environmentally conscious rural communities. They may ensure that environmental insights, knowledge, and information are effectively used in improving business processes and activities to respond to changing business and environmental needs in rural communities. Thus, we posit that compared to their counterparts, rural entrepreneurs high on political skill are likely to engage in activities and actions that assist them in acquiring and assimilating green knowledge. Together, we propose the following hypothesis.

H7: Rural entrepreneur political skill moderates the positive relationship between rural entrepreneur social media use and green knowledge acquisition, such that this relationship is stronger when rural entrepreneur political skill is high (vs. low).

3 Method

3.1 Data collection and analysis

Data were collected from 307 rural entrepreneurs operating in Pakistan. To collect data, we contacted 600 alumni who were running small and medium-sized entrepreneurial firms in different rural areas of the country. We received written informed consent from 421 entrepreneurs operating in various sectors, such as hospitality, tourism, health, retail, and telecommunication. They were provided with the survey and a cover letter that contained brief information about the aim of the research, along with the promise of confidentiality and anonymity.

Before starting the data collection, the questionnaire was pretested with 20 respondents from five organizations and three academicians. Data collection occurred in three stages/rounds, separated by a time lag of two weeks. Data about social media use, political skill, and demographics were collected in the first round. Data about green knowledge acquisition were collected in the second round, while data about circular economy practices and green activism were collected in the final round. We received 376, 354, and 312 responses in the first, second, and third rounds, respectively. After matching the data from different rounds using unique codes and discarding the responses that were not appropriately filled, we retained 307 responses for hypotheses testing.

Data were analyzed using structural equation modeling in Mplus (8.8). The average age of the sample was 34.81 years, while 49.2% of respondents had master's degrees, and 50.8% had completed undergraduate degrees. Furthermore, the sample consisted of 69.7% males and 30.3% females.

The non-response bias was examined by comparing the early and late respondent groups using an independent sample t-test. The analysis revealed no significant differences in gender, firm age, or length of organizational tenure. These findings suggest that non-response bias is unlikely to have influenced the results.

3.2 Measures and variables

A five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used to assess the constructs. Rural entrepreneurs' social media use was assessed by adapting a three-item scale ($\alpha = 0.78$) developed by Rialp-Criado and Rialp-Criado (2018). "I often use social media" is a sample item. Green knowledge acquisition was assessed by adapting three items ($\alpha = 0.81$) from Yli-Renko et al.'s (2001). "I obtain much technical knowledge related to environmental protection" was a sample item. Circular economy practices were assessed by adapting ten items ($\alpha = 0.92$) from Fonseca et al. (2018). "I consistently promote improvement of productivity and efficiency of work processes in my company" is a sample item. Green activism was assessed by adapting five items ($\alpha = 0.87$) from SGuin et al. (1998). "I give financial support to different environmental groups" is a sample item. Political skill was assessed using Ahearn et al. (2004) six-item scale ($\alpha = 0.91$). "I am good at getting others to respond positively to me" was a sample item.

Prior research suggests that individual differences such as gender, age, and education could confound the results (Adomako et al., 2025). Thus, these variables were controlled.

3.3 Common method bias

We took several steps to mitigate concerns about common method bias. First, we relied on time lag and multi-source data to reduce the biases associated with the cross-sectional design (Podsakoff et al., 2003). Specifically, we collected data for the independent, mediator, moderator, and dependent variables separately in three time periods. Second, Harman's single factor test was conducted, and the results of explanatory factor analysis suggested that the one-factor model explained only 19.67% of the variance in the variables of the study. Third, we used the marker variable technique to address the common method bias issue (Lindell & Whitney, 2001). We used the choice of blue color (Miller & Simmering, 2023) as the marker variable assessed through four items: "Blue is a beautiful color,", "Blue is one of my favorite colors,", "I prefer blue to all other colors,", and "Blue is a lovely color." The results show no significant correlation between the marker variable and the main variables of the study (highest correlation coefficient 0.11). Together, these results confirm that there is no significant common method bias issue.

4 Results

4.1 Measurement model

Table 1 presents the results of means and correlations. First, we collected data.

Confirmatory factor analyses were conducted in Mplus (8.8) to evaluate the measurement model, consisting of rural entrepreneur social media use, green knowledge acquisition, green activism, circular economy practices, and rural entrepreneur political skill. All the items showed significant loading and the fit indices—χ^2 (314) = 674.39, χ^2/df = 2.15, TLI = 0.91, CFI = 0.92, and RMSEA = 0.06—showed that our proposed model had a good fit with the data. Furthermore, all the variables exhibited average variance extracted (AVE) values exceeding 0.50 (Table 2). Additionally, the square root of AVE for each variable was greater than its inter-construct correlations. Across all the variables, the maximum shared variances (MSV) were lower than AVEs (Table 2). These results confirm the satisfactory levels of convergent and discriminant validities for the scales employed in the research.

4.2 Hypothesis testing

Hypothesis 1 predicted that rural entrepreneurs' social media use would improve circular economy practices. The results supported this prediction ($B = 0.22$, $SE = 0.06$, 95% CI [0.11, 0.34]; $\beta = 0.18$). Substantively, a one-unit increase in social media use was associated with a 0.22-point increase in circular economy practices. The standardized coefficient ($\beta = 0.18$) indicates a small-to-moderate effect, consistent with Cohen's (1988) benchmarks and Meyer et al.'s (2019) call to consider practical importance beyond statistical significance. Hypothesis 2 proposed that social media use would be positively related to green activism. Results supported this ($B = 0.25$, $SE = 0.06$, 95% CI [0.13, 0.37]; $\beta = 0.20$). This suggests that for every unit increase in social media use, green activism

Table 1 Means and correlations

Construct	Mean	SD	1	2	3	4	5	6	7
1. SMU	3.38	0.76							
2. GKA	3.34	0.85	0.22**						
3. CEP	3.50	0.78	0.22**	0.21**					
4. Green activism	3.57	0.84	0.23**	0.26**	0.39**				
5. RE Political skill	3.45	1.33	0.11	0.05	0.03	0.02			
6. Age	34.81	6.37	0.00	0.05	0.02	−0.01	0.01		
7. Gender			−0.08	0.04	0.07	0.06	0.06	−0.03	
8. Education			0.06	0.00	0.10	0.06	0.06	0.06	0.00

$N = 307$. *$p < 0.05$. **$p < 0.01$ level (2-tailed). *$p < 0.05$ level (2-tailed). *SD*, standard deviation; *SMU*, rural entrepreneurs' social media use; *CEP*, circular economy practices; *GKA*, green knowledge acquisition. Political skill = rural entrepreneurs' political skill

Table 2 Discriminant validity and convergent validity

Construct	1	2	3	4	5	AVE	MSV	ASV
1. SMU	**0.74**					0.55	0.07	0.06
2. GKA	0.26	**0.77**				0.59	0.10	0.06
3. CEP	0.26	0.24	**0.74**			0.55	0.18	0.08
4. Green activism	0.27	0.31	0.42	**0.76**		0.58	0.18	0.09
5. RE political skill	0.12	0.04	0.03	0.01	**0.79**	0.62	0.01	0.004

$N = 307$. *AVE*, average variance extracted; *MSV*, maximum variance shared; *ASV*, average variance shared. Bolded values on the diagonals of columns 2 to 6 are the square root values of AVE. *SMU*, rural entrepreneurs' social media use; *CEP*, circular economy practices; *GKA*, green knowledge acquisition. RE political skill = rural entrepreneurs' political skill

increased by 0.25 points. The standardized coefficient ($\beta = 0.20$) again indicates a small-to-moderate impact, showing that social media is a meaningful driver of sustainability-oriented activism.

Hypothesis 3 predicted a positive relationship between social media use and green knowledge acquisition. Findings confirmed this hypothesis ($B = 0.24$, $SE = 0.06$, 95% CI [0.12, 0.36]; $\beta = 0.19$). This means that each additional unit of social media use was associated with a 0.24-point increase in knowledge acquisition, representing a small-to-moderate effect in standardized terms. Hypothesis 4 predicted that green knowledge acquisition would be positively related to circular economy practices. Results supported this prediction ($B = 0.16$, $SE = 0.05$, 95% CI [0.06, 0.26]; $\beta = 0.15$). The standardized coefficient suggests a relatively small, yet meaningful effect, indicating that green knowledge is an important but not overwhelming factor in enhancing circular practices. Hypothesis 5 predicted a positive association between green knowledge acquisition and green activism. The hypothesis was supported ($B = 0.22$, $SE = 0.06$, 95% CI [0.12, 0.33]; $\beta = 0.17$) (Table 3). A one-unit increase in knowledge acquisition corresponded to a 0.22-point increase in activism, with a small-to-moderate standardized effect.

Hypothesis 6 predicted the mediating role of green knowledge acquisition. Mediation analysis revealed that green knowledge significantly mediated the relationship between social media use and circular economy practices ($B = 0.04$, $SE = 0.02$, 95% CI [0.01, 0.07]; $\beta = 0.05$) and between social media use and

Table 3 Hypotheses results

	B	SE	95%CI	
			LL	UL
Total effects				
SMU → CEP	0.22**	0.06	0.11	0.34
SMU → green activism	0.25**	0.06	0.13	0.37
Direct paths				
SMU → CEP	0.18**	0.06	0.07	0.30
SMU → GKA	0.24**	0.06	0.12	0.36
GKA → CEP	0.16**	0.05	0.06	0.26
SMU → green activism	0.20**	0.06	0.08	0.32
GKA → green activism	0.22**	0.06	0.12	0.33
Indirect paths				
SMU → GKA → CEP	0.04**	0.02	0.01	0.07
SMU → GKA → green activism	0.05**	0.02	0.02	0.10
Moderated path				
SMU × RE political skill → GKA	0.13**	0.05	0.04	0.23
SMU → GKA (high RE political skill)	0.40**	0.09	0.22	0.57
SMU → GKA (low RE political skill)	0.05	0.09	−0.14	0.23

$N = 307$. *B*, unstandardized coefficient; *SE*, standard error; bootstrapping specified at 5000 with 95% confidence interval; *CI*, confidence interval; *LL*, lower limit; *UL*, upper limit; *SMU*, rural entrepreneurs' social media use; *CEP*, circular economy practices; *GKA*, green knowledge acquisition. Political skill = rural entrepreneurs' political skill

green activism ($B = 0.05$, $SE = 0.02$, $p < 0.01$; 95% CI [0.02, 0.10]; $\beta = 0.06$). Both indirect effects are modest in size, consistent with partial mediation, but highlight that part of social media's influence operates through knowledge acquisition.

Hypothesis 7 predicted that political skill would moderate the relationship between social media use and green knowledge acquisition. The interaction term was significant ($B = 0.13$, $SE = 0.05$, 95% CI [0.04, 0.23]; $\beta = 0.11$). Simple slope analysis showed that when political skill was high, the association between social media use and green knowledge acquisition was strong ($B = 0.40$, $SE = 0.09$, 95% CI [0.22, 0.57]; $\beta = 0.28$), reflecting a moderate effect. When political skill was low, the association was insignificant ($B = 0.05$, $SE = 0.09$, 95% CI [−0.14, 0.23]; $\beta = 0.04$). This indicates that political skill strengthens the benefits of social media use for sustainability-related knowledge acquisition Fig. 2.

4.3 Endogeneity concerns

We examined the impact threshold of confounding variables (ITCV) to assess the potential endogeneity arising from omitted variable bias. The ITCV represents the correlation level an omitted variable would need with both the dependent and independent variables to affect statistical inferences (Busenbark et al., 2022; Frank et al., 2013). We evaluated the likelihood of significant omitted variable bias by calculating and comparing the ITCV to the partial impacts of other variables. The results indicate that for green knowledge acquisition, an omitted variable would need a partial impact greater than 0.13 to influence the inference, while the highest observed impact among controls is 0.05, suggesting a minimal risk of omitted variable bias. Likewise, for circular economy practices, an omitted variable would need an impact exceeding 0.23 to introduce bias, but the lowest partial impact observed is 0.06. For green activism, an omitted variable would need an impact exceeding 0.19 to introduce bias, but the lowest partial impact observed is 0.03. These findings suggest that it is highly unlikely that an omitted variable could undermine our results.

Furthermore, we used the two-stage least-squares (2SLS) approach by identifying instrumental variables (IV) to assess potential endogeneity concerns in the study relationships (Semadeni et al., 2014). For the relationship between rural entrepreneurs' social media use and green knowledge acquisition, we identified two instrumental variables: access to high-speed internet (measured as a binary variable: yes/no) and participation in digital literacy programs (measured as a binary variable: yes/no). Access to high-speed internet is a foundational enabler of digital participation, particularly in rural and resource-constrained settings (Van Deursen & Helsper, 2015). Prior research has shown that infrastructural access

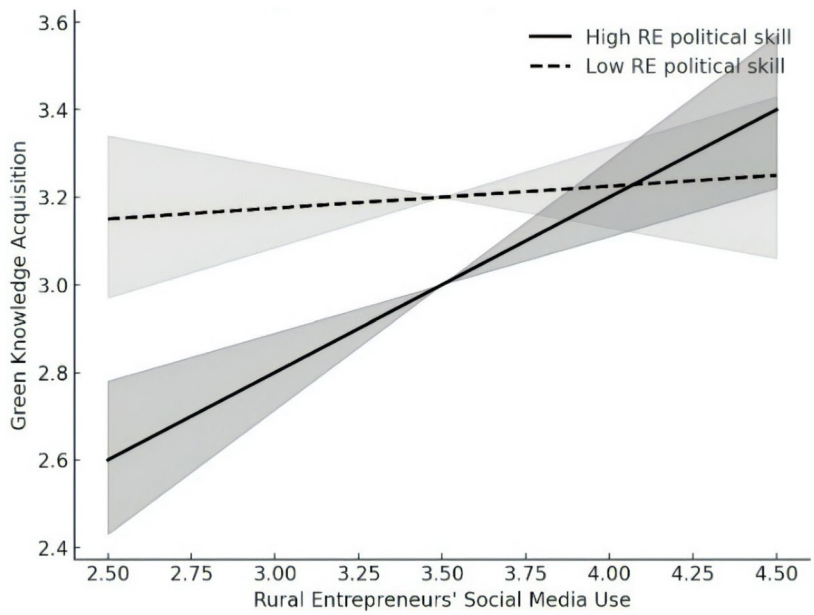

Fig. 2 Rural entrepreneur political skill as a moderator of the link between rural entrepreneur social media use and green knowledge acquisition

significantly predicts entrepreneurs' ability to engage with digital platforms, including social media (Nambisan, 2017; Yaşlak et al., 2023). High-speed internet not only expands entrepreneurs' communication networks but also enhances their capacity to integrate digital tools into their daily operations (Morris et al., 2022). The high-speed internet access itself does not directly enhance green knowledge unless it is mediated through specific digital behaviors such as social media engagement. In addition, participation in digital literacy programs is likely to increase an individual's comfort, confidence, and competency in using digital tools, including social media platforms (Zhou et al., 2024). By gaining training on navigating online content, understanding digital safety, and using mobile applications, rural entrepreneurs can be equipped with the necessary skills to actively engage in social media use (Olsson & Bernhard, 2021; Orrensalo et al., 2024). Such programs do not focus on green knowledge or environmental education. Therefore, any influence these programs may have on green knowledge is likely indirect, operating through the entrepreneur's increased use of digital channels like social media. Thus, both variables fulfil the relevance condition for instrumental variables.

Subsequently, the 2SLS estimation approach was utilized to test for the endogeneity issue. In the first stage, the validity of the instrumental variables was confirmed through the F-statistics, indicating strong instruments (e.g., $F = 19.73$, $p < 0.001$). The Sargan test results ($p > 0.10$) supported the exogeneity assumption of the instruments. Additionally, both the Durbin-Wu-Hausman test and the Hansen J-statistic suggested no significant difference between the 2SLS and ordinary least squares (OLS) estimates ($p > 0.10$), further reinforcing the robustness of the results.

5 Discussion

The purpose of this research was to understand how and when rural entrepreneurs' social media use contributes to green knowledge acquisition, which in turn leads to the implementation of circular economy practices and promotes green activism. Using the dynamic capability view, we examined significant underlying mechanisms and a boundary condition on the association between rural entrepreneurs' social media, circular economy practices, and green activism. Data were collected employing a time-lagged approach; the results revealed a direct positive relationship among rural entrepreneurs' social media use, green activism, and circular economy practices. Additionally, the current research revealed that rural entrepreneurs' social media use positively influences circular economy practices and green activism through green knowledge activism. The study also revealed that rural entrepreneur political skill significantly moderated the effect of rural entrepreneurs' social media use on green knowledge acquisition.

6 Theoretical contributions

First, this research advances the literature on the antecedents of circular economy practices and green activism (Carberry et al., 2019; de Morias Lima et al., 2021; Usman et al., 2025) in rural communities. Existing literature has identified various drivers, including green empowerment, government legislation and policies, green strategic intent, green human resource management, and organizational learning (Barros et al., 2020; Carberry et al., 2019; de Morias Lima et al., 2021; Obeidat et al., 2023; Usman et al., 2025). However, the current research introduces rural entrepreneurs' social media use as a critical yet underexplored antecedent, demonstrating how it enables the implementation of circular economy principles and the promotion of green activism within the organisations and across rural communities.

Second, this study contributes to the literature on rural entrepreneurs' digital engagement by addressing a significant theoretical gap in the existing literature. While existing research has examined the use of social media by entrepreneurs in urban, resource-rich, and technologically advanced settings (Olanrewaju et al., 2020; Troise et al., 2022; Usman et al., 2025), and highlighted its role in reaching wider audiences, facilitating business operations, and identifying emerging opportunities (e.g., Son & Niehm, 2021), with limited attention to its strategic role in enabling environmental innovation, creating awareness and supporting sustainable actions for developing environmentally responsible communities. Our research advances this literature stream by demonstrating how rural entrepreneurs leverage digital tools not only for visibility or networking, but also as a powerful and affordable tool for fostering environmentally

responsible innovation, mobilising local stakeholders, and addressing key sustainability issues pertaining to rural communities.

Third, the current study introduces green knowledge acquisition as a key mediating mechanism that explains how rural entrepreneurs' social media use translates into circular economy practices and green activism. Prior research links green knowledge to competitive advantage and environmental outcomes (Arfi et al., 2018; Borah et al., 2023; Sahoo et al., 2023). Our findings focus on how acquiring green knowledge enables rural entrepreneurs to develop environmental capabilities, expertise, and skills to promote collective initiatives and implement sustainable practices and activities within the organisations and across rural communities.

Lastly, by incorporating rural entrepreneurs' political skill as a moderating variable, the current study adds an important individual-level dimension to the model. Political skill enhances the impact of an entrepreneur's use of social media on green knowledge acquisition and, in turn, on sustainable practices. This finding contributes to emerging literature on how individual capabilities (i.e., political skill) (Lu et al., 2024; Usman et al., 2024) enable rural entrepreneurs to better access, leverage, and translate digital resources into sustainable outcomes. To our knowledge, this is the first study to integrate political skill into the intersection of rural entrepreneurs' social media use, green knowledge, circular economy practices, and green activism in resource-constrained settings, highlighting how individual-level skills shape sustainable practices and efforts within organisations and across rural communities.

7 Practical implications

First, our research findings offer insights into how entrepreneurial firms can contribute to circular economy principles and green activism using social media. The findings suggest that entrepreneurs' social media use plays a key role in implementing circular economy practices (Mondal et al., 2023) and encouraging green activism (Knupfer et al., 2023), which contributes to the development of environmentally responsible and resilient rural communities. Therefore, rural-based firms aiming to address contemporary environmental and societal challenges must develop a proactive and thorough plan that involves creative, innovative, and eco-friendly solutions to environmental issues, ultimately contributing to sustainable goals (Steinerowski & Steinerowska-Streb, 2012). To achieve this, companies can offer training and workshops and develop online courses for entrepreneurs to guide them in using social media platforms effectively. Moreover, companies can provide resources such as mobile devices, laptops, and other smart tools to help rural entrepreneurs leverage social media platforms effectively and improve connectivity in rural areas (Morris & James, 2017). Importantly, social media tools should be designed with user-friendly interfaces that support regional languages to enhance reach and engagement, ultimately assisting rural entrepreneurs in achieving competitive advantages and environmental goals. Promoting the use of social media to help rural entrepreneurs exchange ideas, share experiences, and seek advice can foster a culture of collaboration and overall growth (Casey et al., 2022). Moreover, collaborations with stakeholders for co-creation initiatives can also help rural entrepreneurs tackle contemporary environmental challenges and contribute to a greener future (Mondal et al., 2023). In the past, Patagonia's effective use of social media to promote sustainability initiatives or local campaigns like "Plastic Free July" can serve as inspiration for rural entrepreneurs aiming to implement circular economy practices within organizations and across rural communities. Rural entrepreneurs can use social media to highlight the success stories of those who have successfully leveraged these tools, thus encouraging others to adopt similar practices. Promoting such activities on social media platforms can assist in effectively implementing circular principles and increasing awareness among individuals, ultimately making rural communities more environmentally responsible (Casey et al., 2022).

Furthermore, rural entrepreneurs can use social media to educate employees and individuals about the benefits of circular economy practices, such as optimizing resources, recycling, reducing waste, and improving operational efficiency (Mondal et al., 2023). Social media can also be used to raise awareness about eco-friendly practices within the organization and beyond, among rural communities. By sharing videos, posts, blogs, and stories, entrepreneurs can create demand for sustainable and eco-friendly products (Usman et al., 2025), demonstrating their

positive impact on rural societies and improving the overall ecosystem. Through social media, rural entrepreneurs can empower employees and individuals to take collective action, such as recycling and waste management, which benefit businesses and rural communities (Mondal et al., 2023). They can also promote government programs and policies supporting recycling, which help build more resilient societies (Steinerowski & Steinerowska-Streb, 2012). Additionally, creating online communities focused on sharing resources not only helps businesses achieve environmental goals but also encourages individuals to minimize resource wastage in their daily lives (Khalid et al., 2025).

Importantly, our findings show that small and medium-sized rural firms must focus on acquiring, improving, and developing green knowledge, as this knowledge enables firms to make proactive and timely decisions. Green knowledge enables firms to gain a competitive advantage, implement circular principles, and advocate green activism (Usman et al., 2025). Management must encourage activities that allow firms to acquire environmental knowledge, which in turn improves business operations, processes, and practices, while fostering innovative solutions that align with environmental goals (Khalid et al., 2025). Green knowledge helps firms better understand market trends (Wang et al., 2020), the needs of rural communities, and environmental changes, thus driving circular economy practices and advocating for green activism. Additionally, green knowledge enables firms to predict environmental risks and understand consumer attitudes, empowering them to develop eco-friendly market solutions and promote environmental campaigns.

Our findings on the moderating role of rural entrepreneurs' political skills also have key managerial implications. Rural firms should take individual differences into account when focusing on the circular economy principles. Entrepreneurs with high political skills tend to acquire necessary resources and build relationships with key stakeholders, enabling them to capture market opportunities and respond to rapidly changing environmental needs (Lu et al., 2024). Such leaders can make a difference by establishing clear guidelines and empowering employees to implement circular economy principles and advocate for sustainable actions (Usman et al., 2024). Entrepreneurs with strong political skills are more likely to align circular economy practices with broader environmental goals, thereby benefiting rural societies. Therefore, rural-based firms should prioritize hiring entrepreneurs with high political skills, as they bring value to the firm and create a positive social impact within rural communities. Furthermore, these entrepreneurs would enable rural-based firms to develop comprehensive and effective strategies to address environmental challenges.

8 Conclusion

This study examined how rural entrepreneurs use social media to drive circular economy principles and advance green activism in settings with limited resources. Grounded in the dynamic capability view, the research highlighted social media as a strategic enabler of sensing, seizing, and reconfiguring capabilities that support environmentally responsible innovations and building resilient rural communities. Drawing on data from 307 rural entrepreneurs in Pakistan, the findings demonstrate that social media use significantly influences circular economy and green activism within the organisation and across rural communities, mediated by green knowledge acquisition and moderated by political skill.

Beyond these findings, this is the first study to identify rural entrepreneurs' social media use as a critical antecedent of circular economy practices and green activism, extending explanations beyond policy and institutional drivers. By integrating green knowledge acquisition as a mediating mechanism and political skill as a boundary condition, the current study extends the dynamic capability view into the rural entrepreneurship and sustainability domain.

Practically, the current research highlights that social media is an effective tool that can play a key role in mobilising communities and achieving sustainable outcomes. Managers and policymakers can provide rural entrepreneurs with training and resources to leverage social media for environmental initiatives. Finally, this study highlighted social media as both a business and sustainability enabler that offers insights into how digital platforms can drive bottom-up solutions to address environmental challenges with rural communities.

9 Limitations and future research directions

Our research has several limitations, even with the strength of this study design. First, it is impossible to make causal inferences despite our data-gathering strengths, which eliminate common procedure bias. As such, based on our robust causal inferences, researchers are strongly encouraged to employ longitudinal designs. Second, we collected data from rural communities in developing countries. Therefore, our study findings should be carefully generalized to other countries. Finally, this also provides a key research area for future studies about how the use of AI, big data capabilities, and online chatbots contribute to circular economy principles and green activism.

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Data availability The data that support the findings of this study are available from the corresponding author at any time upon reasonable request.

Declarations

Conflict of interest The authors declare no competing interests.

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