





# Dynamic firm performance: Entrepreneurship, knowledge, social media, customer relationship management, environment



## Authors:

Faiza Siddiqui<sup>1</sup>   
 Kong Yusheng<sup>1</sup>   
 Rafael Ravina-Ripoll<sup>2</sup>   
 Abdiaziz S. Aden<sup>3</sup> 

## Affiliations:

<sup>1</sup>School of Finance and Economics, Faculty of Finance and Economics, Jiangsu University, Zhenjiang, China

<sup>2</sup>Department of Business Organisation, Faculty of Economics and Business Studies, University of Cadiz, Cadiz, Spain

<sup>3</sup>College of Business and Economics, Faculty of Business and Economics, Jijiga University, Jijiga, Ethiopia

## Corresponding author:

Kong Yusheng,  
 yshkong@ujs.edu.cn

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**Purpose:** This article establishes a connection between entrepreneurial orientation (EO) and firm performance, exploring the mediating effects of knowledge-based capabilities (KBC), social media use capabilities (SMUCs) and customer relationship management capabilities (CRMCs), with moderation by environmental dynamism (ED). Utilising the resource-based view (RBV) framework and a mediation moderation model, the research empirically explores these connections.

**Design/methodology/approach:** Data were gathered via a survey from 900 listed firms in Ethiopia and China, spanning manufacturing and service industries. The questionnaire underwent translation into Chinese and Amharic from English. A quantitative approach, utilising convenience sampling for survey distribution, was employed. SPSS 24 software facilitated mediation analysis, revealing no concerns related to discriminant validity.

**Findings/results:** The findings affirm the positive impacts of EO on KBC, SMUC and CRMC in China, while only on SMUC in Ethiopia. In addition, a positive mediation of KBC, SMUC and CRMC between EO and firm performance. Additionally, ED moderated the link between SMUC, CRMC and firm performance.

**Practical implications:** Our study recommends that policymakers and managers should invest in training programmes and information technology, organising workshops to educate staff on the effective use of social media tools. This investment holds substantial potential for dynamically transforming business models, processes and customer trends.

**Originality/value:** This study adds to the current body of knowledge by exploring EO-firm performance correlation, incorporating the mediating effects of KBC, SMUC and CRMC while considering the moderating influence of ED.

**Keywords:** entrepreneurial orientation; firm performance; knowledge-based dynamic capacities; customer relationship management; social media use; environmental dynamism.

## Introduction

The significance of entrepreneurial orientation (hereafter called *EO*) for small- and medium-sized enterprises (SMEs) cannot be overstated (Akomea et al., 2023). Companies strive to minimise risks and actively pursue innovation to stay ahead of their competitors in the marketplace. Over the last 30 years, firms have explored EO for the last 30 years for innovative ideas and practices in social science (Cavusgil & Knight, 2015). Entrepreneurial orientation significantly contributes to boosting the enterprises' performance, enabling them to gain a competitive advantage, stimulate innovation, manage risks effectively, exploit market opportunities, adapt to change, motivate employees and achieve long-term sustainability (Alshahrani & Salam, 2023). Embracing EO significantly impacts the overall performance and success of SMEs in today's business landscape (Arabeche et al., 2022).

Research on the effect of EO on SME performance, especially in least developed and developing countries such as Ethiopia and China, has been explored to some extent. However, notable research gaps remain. There is a need for more research specifically in the context of EO, considering the unique cultural, economic and institutional factors at play (Liu & Wang, 2022; Liu & Xi, 2021). Moreover, least developed and developing countries, particularly Ethiopia and

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China, have distinctive business environments characterised by cultural norms, government policies and market conditions (Liu et al., 2022; Tang & Tang, 2012). This research gap presents an opportunity to delve deeper into how these contextual factors influence EO-performance correlations.

Prior research has noted the profound impact of entrepreneurial effects on knowledge-based capabilities (hereafter called *KBCs*), social media use capabilities (hereafter called *SMUCs*) and customer relationship management-based capabilities (hereafter called *CRMCs*) (Akomea et al., 2023; Chaudhuri et al., 2023; Foltean et al., 2019). Fostering an entrepreneurial mindset and cultivating a culture that encourages innovation, knowledge sharing, social media utilisation and customer centricity allow organisations to effectively harness these capabilities (Burchardt & Maisch, 2019). This approach enhances companies' competitive edge, facilitates adaptations to changing market dynamics and contributes to sustainable business performance in a digitally connected landscape (Monteiro et al., 2019; Santos-Vijande et al., 2022).

Entrepreneurial effects play a vital role in enhancing KBC within an organisation. Knowledge-based capabilities enables firms to identify emerging trends, technologies and market opportunities, ensuring competitiveness in dynamic environments. By fostering an entrepreneurial mindset, companies encourage knowledge acquisition, creation, sharing and application (DeCoito & Briona, 2023), leading to improved innovation, problem-solving and decision-making.

Moreover, entrepreneurial effects significantly impact SMUC, vital for effective marketing, communication and customer engagement (Qalati et al., 2022). Social media use capabilities allows firms to monitor real-time customer feedback, market trends and competitor activities, enabling informed strategic decisions. Entrepreneurs leveraging social media strategically enhance brand visibility, engage with their target audience, gather valuable customer insights and drive customer acquisition and retention (Foltean et al., 2019). Strategic social media use enables organisations to build strong online communities, foster brand advocacy and tap into new market opportunities (Denga & Rakshit, 2023; Mohamad, 2022; Wong, 2023).

Furthermore, entrepreneurial effects play a vital role in shaping CRMC, essential for building and nurturing customer relationships (Foltean et al., 2019; Kristinae et al., 2023; Ngo et al., 2022). Customer relationship management capabilities helps firms develop customer-centric strategies responsive to changing customer needs. Entrepreneurs prioritising customer centricity create a culture valuing customer interactions, feedback and satisfaction (Parniangtong, 2017; Sheth et al., 2020). Leveraging entrepreneurial effects enables organisations to implement effective customer relationship management strategies, enhancing

engagement, personalising experiences, optimising touchpoints and improving customer loyalty, resulting in higher customer lifetime value and business performance (Foltean et al., 2019).

These capabilities (KBC, SMUC and CRMC) play critical roles in driving firm performance. Leveraging knowledge effectively allows firms to innovate and differentiate themselves in the market (Chaithanapat et al., 2022). Social media platforms' utilisation enables firms to expand their reach, engage with customers and foster brand loyalty (Bruce et al., 2023; Pellegrino & Abe, 2023). Effective CRMCs help firms' nurture and retain customers, leading to increased customer satisfaction and long-term business success (Binsaheed et al., 2023; Gil-Gomez et al., 2020). Emphasising and continuously enhancing these capabilities can contribute to improved financial performance, increased market share and enhanced overall competitiveness for firms operating in today's dynamic business landscape.

While some scholars have explored the direct EO-performance link, a research gap exists in understanding the specific mechanisms mediating this relationship. There is a need for more research that rigorously validates measurement scales for KBC, SMUC and CRMC in mediating the EO-performance connection (Foltean et al., 2019; Monteiro et al., 2019; Santos-Vijande et al., 2022). The development of reliable measurement tools is crucial for accurately assessing these capabilities and their mediating effects (Santos-Vijande et al., 2022).

Entrepreneurial orientation, KBC, SMUC and CRMC, along with their effects, may be affected by several contextual drivers, such as industry characteristics, cultural norms and institutional environments (Basco et al., 2020; Dayan et al., 2023). Investigating how these contextual factors moderate the mediating role of KBC, SMUC and CRMC would offer a detailed understanding of the relationship. Hence, environmental dynamism (ED) has been introduced as a moderator. The mediating effects of KBC, SMUC and CRMC may vary across different industries, making it essential to examine industry-specific nuances and the differential impact of capabilities on performance in various sectors for valuable insights for practitioners and policymakers.

Environmental dynamism necessitates firms to strategically align their capabilities with the external context (Forliano et al., 2022). The moderation effect of ED ensures that these capabilities (KBC, SMUC and CRMC) are finely tuned to the specific requirements of the dynamic environment. This moderation impact on the connection between KBC, SMUC and CRMC and the performance of firms is crucial for firms in dynamic environments (AIMulhim, 2023; Louro et al., 2019; Purwanti et al., 2022; Zhang & Zhu, 2021). Aligning these capabilities with the changing external conditions allows firms to adapt, gain a competitive edge, strategically allocate resources and enhance sustainability

and resilience (Do et al., 2022). Leveraging this moderation effect can enable firms to navigate and succeed effectively in dynamic business landscapes (Bashir et al., 2023).

Based on the aforementioned research gap in EO and distinct capabilities (i.e. KBC, SMUC and CRMC) within the context of firm performance in least developed and developing countries, the research objectives are:

1. To explore the EO-performance link.
2. To evaluate the mediation of KBC, SMUC and CRMC between EO and firm performance relationships.
3. To test the moderation of ED on the relationship between capabilities (i.e. KBC, SMUC and CRMC) and firm performance.

Following these objectives, the study hypotheses include the direct effect of EO on capabilities (i.e., KBC, SMUC and CRMC) and the direct effect of capabilities (i.e. KBC, SMUC and CRMC) on firm performance, in addition to the moderation hypotheses for the causal role of ED between capabilities (i.e. KBC, SMUC and CRMC) and firm performance.

## Literature review

### Theoretical underpinnings

Resource-based view (*hereafter called RBV*) theory, as proposed by Barney (1991), asserts that a company's competitive edge and exceptional achievements are mainly derived from its distinct and valuable capabilities and resources rather than external market conditions. It is widely used to indicate the importance of resources, whether tangible or intangible, in driving firm performance (Foltean et al., 2019). The RBV theory categorises resources as tangible or intangible assets owned, controlled or accessed by a firm, with tangible resources, including physical assets such as buildings and machinery, and intangible resources, encompassing intellectual property, brand reputation, knowledge and organisational culture (Crescimanno et al., 2023).

In contrast, capabilities pertain to the organisation's capacity to deploy and utilise its resources effectively to create value, drawing essential distinctions between resources and capabilities (Rodriguez et al., 2016). Capabilities as stated by Amit and Schoemaker (1993) encompass the approach through which an organisation utilises its resources and operational procedures to achieve a particular result. For example, entrepreneurs' expertise or unique use of social media platforms to reach customers are considered capabilities (Borah et al., 2022). Social media, defined 'as the capability of firms and lying in intangible assets useful for recognising, assessing and implementing novel opportunities, align with RBV assumption of intangible resources' (Borah et al., 2022, p. 2). Rodriguez et al. (2016) argue that the utilisation of social media tools can serve as a pivotal resource, enhancing firm performance through different capabilities.

RBV theory holds significance in both least developed and developing countries, particularly concerning EO (Ferreira & Coelho, 2020). Nonetheless, a gap exists in understanding how EO influences firm performance, mediated by KBC, SMUC and CRMC, and moderated by ED. These variables have the potential to enhance firm performance (Khattak & Ullah, 2021; Ullah et al., 2021). Teece et al. (1997) extended the RBV theory by introducing dynamic capabilities, highlighting that firms not only performed better with resourcefulness but also experienced expanded growth rates through acquiring new skills and capabilities. Moreover, there is growing curiosity in applying the RBV theory to address intricate management challenges in today's unpredictable business landscapes (Do et al., 2022).

### Hypotheses development

#### Effect of entrepreneurial orientation on knowledge-based capabilities

In the contemporary and cutthroat corporate landscape of the present day, organisations increasingly recognise the crucial role of both EO and KBC in achieving sustainable competitive advantage. The term 'EO' denotes the strategic direction of an organisation, which is distinguished by its inclination towards innovativeness, willingness to take risks, proactive attitude and competitive assertiveness. In contrast, KBC encompasses the collective knowledge, skills and resources, enabling organisations to efficiently obtain, generate, disseminate and implement information for the purpose of promoting novelty and enhancing overall performance. Arthurs and Busenitz (2006) differentiated the two, stating that entrepreneurial capabilities involve seizing new opportunities through nonroutine activities, while dynamic capabilities involve identifying upcoming significant opportunities and integrating them into routine organisational activities. These domains are complementary rather than interchangeable (Hashim et al., 2018; Teece et al., 1997).

The concept of entrepreneurial management closely integrates with dynamic capability, involving the ability to recognise and exploit prospects, coordinate resources and foster innovative ventures for a competitive edge (Teece et al., 1997). In a fast-varying business landscape, the link between EO and KBC is significant for organisations seeking to thrive and innovate (Chien & Tsai, 2021).

Managers acquire valuable knowledge, generate new knowledge and store it for effective knowledge management, applying it to adapt strategies, address challenges and enhance operational efficiency (Wang et al., 2007). Some studies support the positive effects of EO on the knowledge acquisition, application and sharing of knowledge management (Chien & Tsai, 2021; Farooq & Viji, 2020; Madhoushi et al., 2011), while others observed the influence of KBC on EO (Liu & Lee, 2015; Monteiro et al., 2017). However, scant evidence exists for the proposed relationship

in least developed and developing countries. Thus, this study postulates the following hypothesis:

**H1:** KBC is significantly influenced by EO.

### **Effect of knowledge-based capabilities on firm performance**

Entrepreneurial orientation and KBC are intertwined factors influencing firm performance (Chien & Tsai, 2021). Knowledge networks enable firms to share risk and profit by utilising the expertise, information and knowledge of various stakeholders. Failure to leverage the knowledge of all stakeholders can hinder a company's EO (Engelen et al., 2014). Similarly, dynamic capabilities pertain to the firm's aptitude to assimilate, construct and reorganise internal and external competencies to adapt to fluctuating milieu (Teecce et al., 1997). Eisenhardt and Martin (2000) have enhanced this notion by refining it as the processes of 'product development, strategic decision-making and alliances'. From an entrepreneurial perspective, Zahra et al. (2006) describe dynamic capabilities as the resources and routines firms use to fulfil the vision and make decisions, engaging in activities like knowledge development, retention and utilisation to perceive and adapt to change. By harnessing internal and external knowledge, enterprises aim to enhance performance (Li, 2022).

Numerous studies have shown a positive effect of KBC on performance. For instance, Chien and Tsai (2021) empirically establish a significant correlation between KBC and store performance in Taiwan, while Robertson et al. (2023) find that a higher level of knowledge management activities leads to improved firm performance across 129 countries. Similarly, Li (2022) observes a positive association between KBC and firm performance in the Chinese context. However, the proposed relationship still needs empirical evidence in the context of the least developed and developing countries. In this regard, we postulate the following hypothesis:

**H2:** Firm performance is significantly influenced by KBC.

### **Effect of entrepreneurial orientation on social media use capabilities**

Social media use capabilities, defined as features, functionalities and tools offered by social media platforms enabling users to accomplish specific objectives, represents technological resources that empower diverse activities on these platforms. From an entrepreneurial perspective, it is argued that EO encourages SMEs to be innovative and open to experimentation (Sahaym et al., 2021). This mindset can manifest in SME social media activities, fostering creative approaches to engaging with the target audience. Small- and medium-sized enterprises with higher EO levels are more likely to explore new social media platforms, experiment with diverse content formats and adopt emerging trends in their strategies (RaedHanandeh et al., 2021). Companies actively pursuing innovation, proactively engaging in market activities and being willing to take risks when entering new markets have a higher probability of

understanding the market landscape. They can effectively leverage knowledge, expertise and available resources (e.g. marketing capabilities) to enter new markets, navigate unpredictable conditions and achieve exceptional performance levels (Jin et al., 2018). Entrepreneurial firms, by fostering innovation, proactive engagement, risk-taking, adaptability, customer orientation and strategic resource allocation, can leverage social media platforms to drive customer engagement, brand awareness and business success (Fang et al., 2022; Susanto et al., 2023). Previously, (Susanto et al., 2023; Zahara et al., 2023) confirmed a positive effect of EO on SMUC and calls future studies to empirically test the proposed relationship. Therefore, we postulate the following hypothesis:

**H3:** SMUC is significantly influenced by EO.

### **Effect of small- and medium-sized enterprises on firm performance**

Grounded on the RBV literature, organisational capabilities are essential in determining business performance and attaining a competitive advantage, particularly at the interfirm level, where technology, marketing and operations are crucial factors (Tajvidi & Karami, 2021). In the marketing domain, the existing literature highlights the pivotal role of SMUC in driving company performance (Braojos et al., 2019). It is defined as 'the firm's purposeful use and leverage of platforms like Facebook, Twitter, and corporate blogs for business activities' (Benitez et al., 2018); SMUC is considered 'immobile, inimitable, and non-substitutable' (Tajvidi & Karami, 2021). It is argued that firms with robust capabilities can achieve a long-term competitive edge and superior results (Foltean et al., 2019).

Numerous studies underscore the significance of social media in strategic marketing customer relations management and overall business performance (Bhimani et al., 2019; Hanafizadeh et al., 2021). Tajvidi and Karami (2021) emphasised the importance of marketing capabilities, specifically online and branding, in the hospitality industry of the United Kingdom. Similarly, Qalati et al. (2022) provided evidence of its positive impacts on SME performance in developing countries, especially Pakistan, calling for future empirical research to test the proposed relationship. Thus, we postulate the following hypothesis:

**H4:** Firm performance is significantly influenced by SMUC.

### **Effect of Entrepreneurial orientation on customer relationship management capabilities**

Customer relationship management capabilities is a firm's ability to effectively manage and nurture relationships with its customers, involving various strategies, processes and technologies for understanding customer needs, delivering personalised experiences and fostering long-term customer loyalty (Foltean et al., 2019). Entrepreneurial SMEs with a customer-centric orientation prioritise understanding customer needs, preferences and feedback, influencing CRMC through the adoption of customer-centric strategies and practices (Manishimwe et al., 2022). An innovation-oriented

approach can further enhance CRMC by driving the adoption of new technologies, tools and practices for improved customer interactions (Kristinae et al., 2023). In summary, EO can significantly impact CRMC by fostering a customer-centric approach, promoting proactive engagement, driving innovation, enabling adaptability and facilitating relationship building. Leveraging these effects allows firms to enhance CRMC, improve customer satisfaction and ultimately achieve superior performance in managing customer relationships. Based on these arguments, we posit the following hypothesis:

**H5:** CRMC is significantly influenced by EO.

### Effect of customer relationship management capabilities on firm performance

The impact of incorporating and utilising novel technologies in customer relationship management processes on company performance has gained increasing attention these days (Forliano et al., 2022). Prior studies have shown that CRMC helps build and nurture strong relationships with customers, increasing loyalty and reducing churn by consistently meeting customer expectations and delivering exceptional experiences (Akgün et al., 2014). These capabilities play a critical role in customer retention, as satisfied and loyal customers are more likely to stay with the company over the long term (Setiawati et al., 2019). Furthermore, strong CRMC enables firms to identify opportunities for cross-selling and upselling, leading to higher revenue per customer.

In addition to customer retention benefits, CRMC facilitates seamless information sharing and collaboration among different teams within a company, such as sales, marketing and customer service. This collaboration improves operational efficiency, reduces duplication of efforts and ensures a consistent customer experience across touchpoints (Ali et al., 2019). Moreover, CRMC provides companies with valuable customer data and insights. In addition, data-driven decision-making based on CRM insights leads to more effective and targeted business strategies, resulting in improved overall performance (Libai et al., 2020). While CRMC is recognised as a blueprint for attracting potential customers and restoring a position in the marketplace, it remains relatively unexplored in the least developed and developing economies. Hence, we postulate the following hypothesis:

**H6:** Firm performance is significantly influenced by CRMC.

### Moderation effect of environmental dynamism

Environmental dynamism, encompassing volatility, uncertainty and rapid change in the external business environment, captures the fluctuation and evaluation of factors like technological advancements, market trends, regulatory changes, competitive forces and customer preferences over time (Wamba et al., 2020). Managers rely on cognitive frameworks to predict future changes and explore opportunities in response to dynamic environments (Rauch et al., 2009). This significance prompts the application of its moderation effect on KBC, SMUC and CRMC.

Knowledge-based capabilities is particularly crucial in the service industry, enhancing firm performance in dynamic environments by investing resources effectively (AlMulhim, 2023; Eloranta & Turunen, 2015). Matching firm resources with the dynamic environment requires teamwork and individual coordination, especially in information technology and innovation (Cetindamar et al., 2009). In highly dynamic environments, KBC becomes even more essential, enabling firms to adapt, innovate and capitalise on emerging opportunities. Strong KBCs empower firms to monitor the dynamic environment, acquire new information and respond to market shifts, leading to improved performance (Mikalef et al., 2021; Yuan et al., 2021).

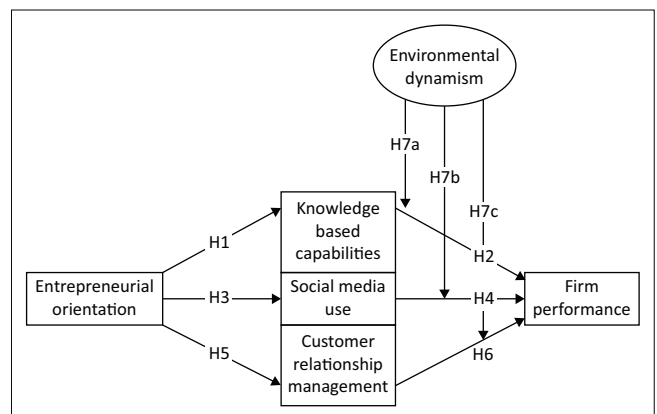
Social media has emerged as a vital tool for understanding customer demands and competing in a dynamic environment (Fang et al., 2022; Foltean et al., 2019). Firms leveraging social media effectively stay agile, monitor customer sentiment and adjust strategies accordingly, resulting in improved firm performance compared to those not adapting their social media strategies (Zhang & Zhu, 2021). In a dynamic business environment, CRM practices' effectiveness may be influenced by ED, given its cross-functional phenomenon in building and sustaining long-term relationships with potential customers (Zeynep Ata & Toker, 2012). Further, Figure 1 illustrates the proposed framework of this research.

**H7:** ED positively moderates (a) KBC, (b) SMUC, and (c) CRMC and firm performance.

## Methodology

### Research context

To meet the needs of the target audience, the questionnaire was initially written in English and then translated into Chinese and Amharic using a reverse translation process as suggested by Brislin (1970). A team of experts reviewed and adjusted the translation in the context of Chinese and Amharic, aligning them with the original questionnaire for precision. A pilot test, involving a few firms from each country, was conducted to assess the reliability of the variables. This process emphasised the importance of a robust model for examining firm performance segmentation



H, hypothesis.

**FIGURE 1:** Proposed model.

and positioning strategies, especially in least developed and developing countries.

## Sample and data collection

A questionnaire survey was conducted to collect data from firms in least developed and developing countries, specifically Ethiopia and China. The Likert-style scale, ranging from 1 to 5, was used for responses. The research targeted firms that have existed for at least five years. Questionnaires were distributed via email to 1100 firms, but 200 responses were excluded because of misunderstanding the scale and providing identical responses to every question (Rigtering et al., 2017). The final data set for analysis comprised 900 valid and uncorrelated responses, suitable for quantitative data analysis. The study included both male and female respondents from Ethiopia (male: 192, female: 222) and China (male: 213, female: 273) across the service and manufacturing sectors, aiming to identify firm performance antecedents.

## Measures

The study employs an EO scale with seven items, adapted from Sahaym et al. (2021). For the firm performance, the research adopts a scale from Murphy et al. (1996), identifying three dimensions – efficiency, growth and profit – consisting of seven items (Ferreira & Coelho, 2020). Knowledge-based capabilities is measured through a seven-item scale proposed by Chien and Tsai (2021). Social media use capabilities are assessed using an eight-item scale developed by Foltean et al. (2019) and Freixanet et al. (2020). customer relationship management capabilities are evaluated with a nine-item scale developed by Wang and Feng (2012). Lastly, ED is measured through five items adapted from Yuan et al. (2021).

## Data analysis and software

We applied explanatory factor analysis (EFA), confirmatory factor analysis (CFA) and correlation using SPSS 24.0 and AMOS 24.0 to test the hypothesis related to variables, mediation and moderation effect. This methodology is chosen considering the use of composites for variables and a potentially small sample size (Henseler et al., 2016; Sarstedt et al., 2016). Initially, the model underwent testing to confirm the construct's validity, followed by the examination of the model fit summary.

## Results

### Exploratory factor analysis

After preliminary data analysis in SPSS 24.0, EFA was run employing the principal axis factoring method (Fabrigar et al., 1999; Hair et al., 1998). The EFA results explain that three items of EO in Ethiopia (E04, E05 and E06) and two items in China (EO1 and EO2), three items of KBCs in Ethiopia (KBC2, KBC4 and KBC6), three items of social media use in Ethiopia (SMUC6, SMUC7 and SMUC8) and one item

in China (SMUC1), six items of customer relationship management in Ethiopia (CRMC2, CRMC3, CRMC4, CRMC5, CRMC6 and CRMC9), one item of EDs in Ethiopia (ED1), one item in China (ED1) and one item of FP in China (FP1) were removed because they could not meet the threshold criteria (Hair et al., 1998). The Kaiser-Meyer-Olkin (KMO) values were greater than 0.70 ( $KMO_{Ethiopia} = 0.882$  and  $KMO_{China} = 0.965$ ), and Bartlett's tests of sphericity were significant. Table 1 provides the details of the results.

### Confirmatory factor analysis

Next, we run the CFA in Amos 24.0 to determine the reliability and convergent validities. The results reveal that the average variance extracted (AVE) for every variable surpasses the 0.50 minimum threshold except  $EO_{China}$ . The detail of results convergent validity is mentioned in Table 2.

Likewise, we checked the discriminant validity in CFA of firm performance, KBC, EO, ED, SMUC and CRMC. Based on the master validity tool by Gaskin et al. (2019), we have applied a new technique to determine the discriminant validity. Our results show that there is no warning for master discriminant validity and results fit the data: the minimum discrepancy per degree of freedom ( $CMIN/[df] = 3.154$ , comparative fit index [CFI] = 0.911, increment fit index [IFI] = 0.911, Tucker Lewis Index [TLI] = 0.902, goodness-of-fit index (GFI) = 0.831, standardised root mean residual (SRMR) = 0.064, root mean square error of approximation (RMSEA) = 0.049 and PClose = 0.781). In the AVE, all variables are above the acceptable limit, and only the EO construct value is below the minimum benchmark in China. Table 2 and Table 3 provide the details of the results.

### Correlation analysis

The intercorrelation, mean and standard deviation of variables are studied in Table 4. The results show that KBC negatively correlated with EO ( $r_{Ethiopia} = -0.050$ ). The results for social media use are positively related to EO and negatively related to KBC ( $r_{Ethiopia} = 0.586, -0.035$ ). Similarly, the results of CRMC positively correlated with EO, KBC and SMUC ( $r_{Ethiopia} = 0.029, 0.134, 0.008$ ). And results for ED positively related with EO, SMUC and CRMC and negatively correlated with KBC ( $r_{Ethiopia} = 0.046, 0.125, 0.041, -0.009$ ). Finally, the results of firm performance positively related with EO, KBC, SMUC, CRMC and ED ( $r_{Ethiopia} = 0.455, 0.008, 0.537, 0.043$  and  $0.0168$ ). Moreover, the result of KBC positively correlated with EO ( $r_{China} = 0.644$ ), and SMUC positively related with EO and KBC ( $r_{China} = 0.429, 0.614$ ). Similarly, the result for CRMC positively related to EO, KBC and SMUC ( $r_{China} = 0.665, 0.728$  and  $0.632$ ). The results further reveal that ED is positively related to EO, KBC, SMUC and CRMC ( $r_{China} = 0.514, 0.473, 0.500$  and  $0.544$ ). Finally, the results of firm performance positively related to EO, KBC, SMUC, CRMC and ED ( $r_{China} = 0.449, 0.574, 0.591, 0.521$  and  $0.469$ ). The detail of the results is mentioned in Table 4.

**TABLE 1:** Factor loading of the six-factor model.

Items	Factor loading		Cronbach's alpha		Cumulative percentage of variance (%)	
	Ethiopia	China	Ethiopia	China	Ethiopia	China
<b>EO</b>			0.92	0.86	18.32	16.22
EO1	0.77	-	-	-	-	-
EO2	0.76	-	-	-	-	-
EO3	0.83	0.60	-	-	-	-
EO4	-	0.64	-	-	-	-
EO5	-	0.72	-	-	-	-
EO6	-	0.66	-	-	-	-
EO7	0.84	0.72	-	-	-	-
<b>KBCs</b>			0.90	0.94	31.26	29.66
KBC1	0.71	0.69	-	-	-	-
KBC2	-	0.64	-	-	-	-
KBC3	0.81	0.77	-	-	-	-
KBC4	-	0.72	-	-	-	-
KBC5	0.83	0.75	-	-	-	-
KBC6	-	0.75	-	-	-	-
KBC7	0.77	0.75	-	-	-	-
<b>SMUCs</b>			0.90	0.92	43.11	42.96
SM_Use1	0.75	-	-	-	-	-
SM_Use2	0.79	0.75	-	-	-	-
SM_Use3	0.80	0.71	-	-	-	-
SM_Use4	0.66	0.73	-	-	-	-
SM_Use5	0.64	0.71	-	-	-	-
SM_Use6	-	0.72	-	-	-	-
SM_Use7	-	0.67	-	-	-	-
SM_Use8	-	0.63	-	-	-	-
<b>CRMC</b>			0.76	0.94	54.74	55.70
CRMC1	0.66	0.61	-	-	-	-
CRMC2	-	0.69	-	-	-	-
CRMC3	-	0.69	-	-	-	-
CRMC4	-	0.70	-	-	-	-
CRMC5	-	0.78	-	-	-	-
CRMC6	-	0.76	-	-	-	-
CRMC7	0.72	0.73	-	-	-	-
CRMC8	0.68	0.73	-	-	-	-
CRMC9	-	0.65	-	-	-	-
<b>ED</b>			0.84	0.80	65.09	63.55
ED1	-	-	-	-	-	-
ED2	0.64	0.73	-	-	-	-
ED3	0.77	0.70	-	-	-	-
ED4	0.66	0.17	-	-	-	-
ED5	0.68	0.70	-	-	-	-
<b>FP</b>			0.92	0.93	72.66	69.60
FP1	0.64	-	-	-	-	-
FP2	0.74	0.71	-	-	-	-
FP3	0.73	0.74	-	-	-	-
FP4	0.71	0.74	-	-	-	-
FP5	0.72	0.78	-	-	-	-
FP6	0.70	0.74	-	-	-	-
FP7	0.63	0.76	-	-	-	-

Note: KMO measure of sampling adequacy = 0.882, Bartlett's test of sphericity = 7498.687:  $p < 0.001$  (Ethiopia); KMO measure of sampling adequacy = 0.965, Bartlett's test of sphericity = 14347.450:  $p < 0.001$  (China).

KMO, Kaiser-Meyer-Olkin; EO, Entrepreneurial orientation; KBCs, Knowledge-based capabilities; SMUCs, Social media use capabilities; CRMC, Consumer relationship management capabilities; ED, Environmental dynamism; FP, Firm performance.

## Structural equation modelling

Next, we performed the SEM with the maximum likelihood method to test the proposed hypothesis. Table 5 shows the results in detail of Ethiopia and China. Hypothesis 1 proposes that EO positively impacts KBC in Ethiopia and China context. The result reveals this view that it is only significant in China and contrary results in Ethiopia context ( $\beta_{\text{Ethiopia}} = -0.043, t = 0.370, \beta_{\text{China}} = 0.797, t = 14.340^{***}$ ).

Similarly, H2 proposes that EO has a substantial influence on SMUC in both economies. This view is supported by our results in both countries that SMUC has a great influence on EO ( $\beta_{\text{Ethiopia}} = 0.909, t = 13.332^{***}, \beta_{\text{China}} = 0.795, t = 12.901^{***}$ ). SMUC positively impacts EO and enhances the firm performance. Likewise, the H3 states that EO has a significant impact on CRMC in both countries. The results suggest that this view is supported in China and insignificant in Ethiopia

( $\beta_{Ethiopia} = 0.025, t = 0.652, \beta_{China} = 0.948, t = 14.776^{***}$ ). CRMC is important in China but does not play a vital role in Ethiopia.

Furthermore, as suggested KBC impacts positively and enhances the firm performance. However, the results are contrary to these hypotheses. Knowledge-based capabilities is nonsignificant in Ethiopia and significant in China; thus H4 is significant in China and insignificant in Ethiopia ( $\beta_{Ethiopia} = 0.061, t_{Ethiopia} = 0.234, \beta_{China} = 0.331, t_{China} = 5.253^{***}$ ). The H5 states that SMUC, social skill competency, social media sales intensity, demand articulation and community characteristics positively impact firm performance in both countries. The results are supported by this view ( $\beta_{Ethiopia} = 0.466, t_{Ethiopia} = 11.117^{***}, \beta_{China} = 0.388, t_{China} = 7.244^{***}$ ). Finally, H6 states that CRMC has a statistically substantial influence impact on firm performance in the context of Ethiopia and China. The results reveal that CRMC has no impact on firm performance in both countries ( $\beta_{Ethiopia} = (0.003), t_{Ethiopia} = 0.551, \beta_{China} = 0.061, t_{China} = 1.058$ ) (see Table 5).

### Mediation analysis

We have used SPSS 24.0 to test the mediation effect of KBC, SMUC and CRMC as mediators in Ethiopia and China. The mediation role plays a monumental in the analysis of cross-country data. Therefore, the mediation was determined through the bootstrapping approach as proposed by Kenny (2013). The results show that KBC's direct and indirect effects are significant. In indirect effect, it is negatively significant in Ethiopia and positively significant in China ( $\beta_{Ethiopia\ direct} = 0.318, SE_{Ethiopia} = 0.039, t_{Ethiopia} = 9.901^{***}$ ), ( $\beta_{Ethiopia\ indirect} = 0.001, Boot\ SE_{Ethiopia} = 0.003, CI_{Ethiopia} = -0.012, 0.002, \beta_{China\ direct} = 0.130, SE_{China} = 0.046, t_{China} = 2.802^{***}, \beta_{China\ indirect} = 0.301, Boot\ SE_{China} = 0.044, CI_{China} = 0.220, 0.393$ ). Thus, the results support the mediation in direct and indirect effects, suggesting partial mediation. In addition,

SMUC significantly mediates the EO-firm performance relationship in Ethiopia and China ( $\beta_{Ethiopia\ direct} = 0.150, SE_{Ethiopia\ direct} = 0.047, t_{Ethiopia\ direct} = 3.182^{***}, \beta_{Ethiopia\ indirect} = 0.230, Boot\ SE_{Ethiopia\ indirect} = 0.039, CI_{Ethiopia} = 0.158, 0.312$ ), ( $\beta_{China\ direct} = 0.114, SE_{China\ direct} = 0.046, t_{China\ direct} = 2.50^{***}, \beta_{China\ indirect} = 0.317, Boot\ SE_{China\ indirect} = 0.043, CI_{China} = 0.240, 0.408$ ).

The results reveal that social media use direct and indirect is significant in both countries; thus it mediates partially. Finally, CRMC mediates the EO-firm performance relationship in Ethiopia and China. The findings suggest that it is significant directly and indirectly in both countries ( $\beta_{Ethiopia\ direct} = 0.380, SE_{Ethiopia\ direct} = 0.038, t_{Ethiopia\ direct} = 9.881^{***}, \beta_{Ethiopia\ indirect} = 0.000, Boot\ SE_{Ethiopia\ indirect} = 0.002, CI_{Ethiopia} = -0.005, 0.005$ ), ( $\beta_{China\ direct} = 0.177, SE_{China\ direct} = 0.049, t_{China\ direct} = 3.583^{***}, \beta_{China\ indirect} = 0.255, Boot\ SE_{China\ indirect} = 0.044, CI_{China} = 0.173, 0.346$ ). The mediation has an effect on firm performance in both countries. The detail of the result is mentioned in Table 6.

TABLE 3: Discriminant validity.

Factor	FP	SMUC	EO	KBC	ED	CRMC
<b>Ethiopia</b>						
FP	-	-	-	-	-	-
SMUC	0.573	-	-	-	-	-
EO	0.476	0.711	-	-	-	-
KBC	0.002	0.086	0.058	-	-	-
ED	0.183	0.165	0.027	0.017	-	-
CRMC	0.001	0.068	0.003	0.148	0.043	-
<b>China</b>						
CRMC	-	-	-	-	-	-
KBC	0.774	-	-	-	-	-
SMUC	0.675	0.659	-	-	-	-
FP	0.555	0.615	0.638	-	-	-
EO	0.763	0.691	0.705	0.488	-	-
ED	0.626	0.548	0.582	0.545	0.651	-

FP, firm performance; SMUC, social media use capabilities; KBC, knowledge-based capabilities; ED, environmental dynamism; CRMC, customer relationship management capabilities; EO, entrepreneurial orientation.

TABLE 2: Reliability and convergent validities.

Factors	CR	AVE	MSV	MaxR(H)	FP	SMUC	EO	KBC	ED	CRMC
<b>Ethiopia</b>										
FP	0.923	0.633	0.280	0.925	0.796	-	-	-	-	-
SMUC	0.900	0.65	0.442	0.940	0.529***	0.806	-	-	-	-
EO	0.915	0.731	0.442	0.928	0.470***	0.664***	0.855	-	-	-
KBC	0.906	0.708	0.021	0.916	0.006	-0.070	-0.060	0.841	-	-
ED	0.847	0.581	0.027	0.859	0.165**	0.163**	0.035	-0.020	0.762	-
CRMC	0.762	0.518	0.021	0.768	0.006	0.074	0.000	0.144*	0.046	0.719
<b>China</b>										
CRMC	0.945	0.656	0.594	0.948	0.810	-	-	-	-	-
KBC	0.938	0.684	0.594	0.940	0.771***	0.827	-	-	-	-
SMUC	0.923	0.633	0.453	0.925	0.673***	0.655***	0.796	-	-	-
FP	0.930	0.688	0.407	0.931	0.557***	0.608***	0.638***	0.830	-	-
EO	0.784	0.453	0.526	0.844	0.725***	0.673***	0.663***	0.468***	0.673	-
ED	0.796	0.566	0.384	0.802	0.620***	0.543***	0.579***	0.544***	0.600***	0.8

Note: The AVE for EO is less than 0.50; Thresholds are 0.850 for strict and 0.900 for liberal discriminant validity.

CR, composite reliability; AVE, average variance extracted; MSV, maximum shared variance; MaxR(H), maximum reliability; FP, firm performance; SMUC, social media use capabilities; KBC, knowledge-based capabilities; ED, environmental dynamism; CRMC, customer relationship management capabilities; EO, entrepreneurial orientation.

\*,  $p < 0.050$ ; \*\*,  $p < 0.010$ ; \*\*\*,  $p < 0.001$ .



**TABLE 4:** Mean, standard deviations and correlations among the variables.

Variables	Mean	SD	EO	KBC	SMUC	CRMC	ED	FP
<b>Ethiopia</b>								
EO	4.038	0.853	1.000	-	-	-	-	-
KBC	4.091	0.551	(0.050)	1.000	-	-	-	-
SMUC	4.125	0.826	0.586	(0.035)	1.000	--	-	-
CRMC	4.227	0.700	0.029	0.134	0.008	1.000	-	-
ED	3.989	0.837	0.046	(0.009)	0.125	0.041	1.000	-
FP	3.979	0.748	0.455	0.008	0.537	0.043	0.168	1.000
<b>China</b>								
EO	3.767	1.200	1.000	-	-	-	-	-
KBC	4.155	0.907	0.644	1.000	-	-	-	-
SMUC	4.043	1.254	0.641	0.614	1.000	-	-	-
CRMC	3.981	1.114	0.665	0.728	0.632	1.000	-	-
ED	3.835	1.155	0.514	0.473	0.500	0.544	1.000	-
FP	4.174	0.962	0.449	0.574	0.591	0.521	0.469	1.000

Note:  $p < 0.01$ .

EO, Entrepreneur orientation; KBC, knowledge-based capabilities; SMUC, social media use capabilities; CRMC, customer relationship management capabilities; ED, environmental dynamic; FP, firm performance; SD, standard deviation.

**TABLE 5:** Results of multigroup analysis of Ethiopia and China. Structural equation modelling.

Hypothesis	Proposed relationship	Standardised beta		t-value	
		Ethiopia	China	Ethiopia	China
H1	EO --> KBC	-0.043	0.797	0.370	14.340*
H2	KBC --> firm performance	0.063	0.331	0.234	5.253*
H3	EO --> SMUC	0.909	0.795	13.332*	12.901*
H4	SMUC --> firm performance	0.466	0.388	11.117*	7.244*
H5	EO --> CRMC	0.025	0.948	0.652	14.776*
H6	CRMC --> firm performance	-0.030	0.061	0.551	1.058

Note: Hypothesis is significant at level 1%.

CRMC, customer relationship management capabilities; EO; entrepreneurial orientation; KBC, knowledge-based capabilities; SMUC, social media use capabilities.

\*  $p < 0.001$ .

**TABLE 6:** Regression for testing of mediation of knowledge-based capabilities, social media use capabilities and customer relationship management capabilities.

Factors	Direct effect			Indirect effect			
	$\beta$	SE	t-value	$\beta$	Boot SE	Boot LLCI	Boot ULCI
<b>Ethiopia</b>							
KBC	0.318	0.039	9.901*	-0.001	0.003	-0.012	0.002
SMUC	0.150	0.047	3.182*	0.230	0.039	0.158	0.312
CRMC	0.380	0.038	9.881*	0.000	0.002	-0.005	0.005
<b>China</b>							
KBC	0.130	0.046	2.802*	0.301	0.044	0.220	0.393
SMUC	0.114	0.046	2.50*	0.317	0.043	0.240	0.408
CRMC	0.177	0.049	3.583*	0.255	0.044	0.173	0.346

Note: Significant at level 1%.

KBC, KBC, knowledge-based capabilities, SMUC, social media use capabilities, CRMC, customer relationship management capabilities; SE, standard error; LLCI, lower limit of confidence interval; ULCI, upper limit of confidence interval.

\*  $p < 0.001$ .

## Moderation analysis

Next, we run the moderation mediation of ED. We tested the moderation by using the process of Hayes and Preacher (2014) method. Hypothesis 7a states that ED would moderate the strength of the mediator relationship between KBC on firm performance such that the impact would be stronger with high ED than with low ED in both countries. Our results suggest that it is significant in Ethiopia and China ( $\beta_{\text{Ethiopia}} = 0.127$ ,  $SE = 0.072$ ,  $t\text{-value} = 1.756$ ,  $\beta_{\text{China}} = -0.067$ ,  $SE = 0.033$ ,  $t\text{-value} = -1.996$ ). It is pointed out that the moderation effect of ED is not significant to enhance the firm performance in both countries. Then, Hypothesis 7b states that ED would moderate the strength of the mediator relationship between SMUC

on firm performance in Ethiopia and China ( $\beta_{\text{Ethiopia}} = 0.168$ ,  $SE = 0.044$ ,  $t = 3.852^{***}$ ,  $\beta_{\text{China}} = -0.0576$ ,  $SE = 0.0288$ ,  $t = 2.002^{***}$ ). Hypothesis 7c links that ED would moderate the strength of the mediator relationship between CRMC on firm performance in Ethiopia and China ( $\beta_{\text{Ethiopia}} = -0.021$ ,  $SE = 0.063$ ,  $t\text{-value} = -0.332$ ,  $\beta_{\text{China}} = -0.0735$ ,  $SE = 0.0322$ ,  $t\text{-value} = -2.281^{***}$ ). The detail of the results is mentioned in Table 7.

## Discussion and conclusion

The study's findings revealed that EO positively influences KBC in China but exhibits a negative and insignificant impact in Ethiopia. This discrepancy suggests that EO plays

**TABLE 7:** Regression for testing of moderation of environment dynamism.

Predictor	Ethiopia			China		
	Coefficient	SE	t-value	Coefficient	SE	t-value
Interaction of ED > KBC and FP	0.127	0.072	1.756	0.067	0.033	1.996
Interaction of ED > SMUC and FP	0.168	0.044	3.852*	0.058	0.029	2.002*
Interaction of ED > CRMC and FP	0.021	0.063	0.332	0.074	0.032	2.281*

Note: Significant at level 1%.

ED, environmental dynamism; SMUC, social media use capabilities; CRMC, customer relationship management capabilities; FP, firm performance; SE, standard error.

\*  $p < 0.001$ .

an essential role in enhancing employees' knowledge and efficiency, fostering innovation and encouraging problem-solving initiatives, aligning with previous studies (Chien & Tsai, 2021; Farooq & Vij, 2020; Madhoushi et al., 2011).

The study also emphasised a significant influence of KBC on business performance, indicating that when employees absorb new knowledge facilitated by EO, it leads to improved efficiency, problem-solving and overall firm performance. These results align with previous research highlighting the positive effects of KBC on firm performance (Chien & Tsai, 2021; Li, 2022; Robertson et al., 2023).

Furthermore, the study found that EO positively impacts the SMUC, emphasising the importance of providing freedom and top management support for innovation activities. This positive influence of EO on SMUC aligns with the study by Fang et al. (2022), Susanto et al. (2023) and Zahara et al. (2023). Additionally, the research highlighted the positive impact of SMUC on business performance, emphasising the social media role in reducing marketing costs, improving customer satisfaction and increasing customer numbers, aligning with previous studies (Qalati et al., 2022; Tajvidi & Karami, 2021).

Moreover, the study revealed a positive influence of CRMC, indicating that supporting innovation activities enables firms to maintain relationships with customers effectively. This finding aligns with that of Kristinae et al. (2023). However, the study did not support the influence of CRMC on firm performance, contrasting with prior works (Ali et al., 2019; Libai et al., 2020).

Furthermore, the research underscored the partial mediation of KBC, SMUC and CRMC between EO and firm performance relationships, suggesting that these mediators reduce the magnitude of the EO's direct impact. This finding aligns with the work of Fang et al. (2022) and Qalati et al. (2022). Additionally, they study highlighted the moderating role of ED, indicating its positive influence on the relationship between SMUC and firm performance in Ethiopia and between SMUC, CRMC and firm performance in China, consistent with previous research (AlMulhim, 2023; Eloranta & Turunen, 2015).

## Theoretical implications

This article has offered several theoretical and practical contributions. Theoretically, this research replicates the prior

research dealing with the direct correlations between the EO, KBC, SMUC, CRMC and business outcomes and aids existing research by exploring the proposed relationship in different contexts. Therefore, we believe to have addressed the call of Do et al. (2022), Kristinae et al. (2023) and Qalati et al. (2022) regarding the necessity to explore the effect of EO on different factors using the RBV theory and entrepreneurship perspective. In addition, the study aids the current body of knowledge by exploring the direct effect of KBC, SMUC and CRMC on firm performance followed by the call made by AlMulhim (2023), Borah et al. (2022), Chaithanapat et al. (2022), Foltean et al. (2019), Manishimwe et al. (2022), Qalati et al. (2022) and Susanto et al. (2023) to comprehensively understand the factors enhancing business outcomes.

The study also addresses the previous studies' calls to examine the mediating role of the KBC (Lim & Kim, 2020), SMUC (Qalati et al., 2022) and CRMC (Foltean et al., 2019) in different contexts. As a result, we evidenced the mediators KBC, SMUC and CRMC partially mediated the EO-firm performance relationship. Finally, previously several scholars have explored the direct and moderation effects of ED on different relationships. Grounded on the RBV theory, we address the call made by AlMulhim (2023) and Forliano et al. (2022) to explore the moderation of ED in the context of SMUC-firm performance.

## Practical implications

This study underscores the practical significance of EO in least developed countries, specifically highlighting its role in enhancing employee knowledge, SMUC, CRMC and overall firm performance. The findings emphasise that, particularly in the context of Ethiopia and China, EO indirectly contributes to positive firm performance outcomes. For policymakers and managers in least developed countries, this insight underscores the importance of investing in training programmes, information technology and workshops aimed at empowering staff with the knowledge and skills necessary for the effective use of social media tools. Recognising the substantial impacts of such initiatives, organisations can dynamically adapt their business models, processes and customer engagement strategies to align with evolving trends.

Furthermore, the notable moderation effect of ED carries practical implications for practitioners operating in the least developed regions. Given the inherent uncertainties and dynamic changes in the environment, firms are advised to proactively adopt emerging technologies introduced to the market. Understanding that ED can either strengthen or weaken the KBC, SMUC and CRMC impacts on business performance, organisations in least developed economies should strategically embrace technological advancements. This strategic adoption aligns with the volatile nature of the business landscape in these regions, providing organisations with the flexibility needed to navigate environmental uncertainties effectively.

## Limitation and future research

This research, while contributing significantly to our understanding of EO and SMUC, has certain limitations that pave the way for future research. Firstly, the use of first-order composites for the EO and SMUC might oversimplify the complex nature of these constructs. To address this limitation, future scholars are encouraged to conduct a more nuanced analysis by exploring the separate dimensions of each construct. Investigating the individual facets of EO and SMUC could unveil specific elements that play distinct roles in influencing firm performance, providing a more comprehensive and detailed perspective on the relationship under consideration. This approach could contribute to a deeper understanding of the mechanisms through which EO and SMUC impact organisation outcomes.

Secondly, the study did not delve into the direct effects of EO on firm performance and the reciprocal relationships between SMUC and EO. Future research could explore the direct impact of SMUC on both EO and firm performance, as well as investigate the potential mediating role of EO in the relationship between SMUC and firm performance. By addressing these gaps, researchers can gain a more holistic understanding of how social media usage influences EO and, consequently, firm performance.

Another noteworthy limitation lies in the use of cross-sectional data, which may restrict the ability to draw causal inferences and generalise findings over time. To address this drawback, upcoming studies could employ longitudinal data, allowing for a more dynamic examination of the relationships between EO, SMUC and business performance. This longitudinal approach would offer insights into the temporal dynamics of these constructs and contribute to a more robust understanding of the long-term effects of EO and social media usage in the least developed and developing economies. Furthermore, it would enable researchers to identify potential changes and adaptations in these relationships over time.

Additionally, the study's broad data collection across multiple sectors, while providing results on a large scale, might mask sector-specific nuances. Upcoming studies could focus on a specific sector to uncover industry-specific patterns and variations in the relationships under investigation. Recognising that different sectors operate with distinct standards and challenges, a sector-specific analysis could offer more tailored insights and recommendations for organisations within specific industries.

Lastly, while the study considered ED as a moderator for certain relationships, there is potential for further exploration. Future research could investigate the moderating role of ED on the links between EO and its components (EO-KBC, EO-SMUC, EO-CRMC), as well as its impact on the correlation between SMUC and performance. By expanding the scope of ED as a moderator, researchers can gain a more comprehensive understanding of how external factors influence the relationships between key

organisational variables, providing valuable insights for both theory and practice.

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The authors declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

### Authors' contributions

F.S., K.Y., R.R.-R. and A.S.A. have made a substantial, direct and intellectual contribution to the work and approved it for publication.

### Ethical considerations

Ethical clearance to conduct this study was obtained from the Jiangsu University Ethical Committee of School of Finance and Economics.

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### Data availability

Data will be made available upon reasonable request from F.S., K.Y., R.R.-R. and A.S.A.

### Disclaimer

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