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How Knowledge Spillover Entrepreneurship Influences the Adoption of Social Media and Customer Relationship Management

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ABSTRACT

Based on the knowledge-based view, this paper investigates how the strategic integration of knowledge spillover through entrepreneurial orientation (EO), adoption of social media (SM) and customer relationship management (CRM), and environmental turbulence collectively manage to enhance firm performance in developing economies. To test these assertions, we surveyed managers from 519 randomly selected firms in China, and data were analyzed using SmartPLS 4.0. The results reflect that knowledge spillover through EO significantly enhances firm performance. In contrast, knowledge spillover through adopting SM mediates the relationship between EO and firm performance, whereas environmental turbulence and CRM moderate the relationship between adopting SM and firm performance. These findings enrich knowledge management literature from theoretical and managerial perspectives.

1 | Introduction

Small and medium-sized enterprises (SMEs) are widely recognized as essential in accelerating the economic growth of any developing economy by creating employment opportunities, thus reducing poverty (Iqbal et al. 2021; Susanto et al. 2023). Similarly, in China, SMEs represent 90% of the businesses and contribute 60% to the GDP of the nation (Storm and Smith 2023). Further, in the contemporary business landscape defined by the rapid adoption of emerging technologies, the SME sector enables China to emerge as a superpower by fostering innovations (Borah, Iqbal, and Akhtar 2022; Zhang and Erturk 2022; Zhou et al. 2023).

Theoretically, the knowledge management research stream has recently emerged as a critical contributor to explaining the role

of SMEs in the uplifting economic growth of developing economies (Zhou, Uhlener, and Jungst 2023). It explains how SMEs can strengthen economic growth by fostering innovations and outperforming competitors (Cardoni et al. 2020; Patnaik et al. 2023), thus achieving competitive positioning. Coinciding with the development of the knowledge-based economy, the complexity of global change in knowledge management highlights the necessity of conducting collaborative research between different research streams. Consequently, in recent times, scholars have been keen to conduct research by linking multiple research streams to enhance the understanding of how knowledge accumulated via collaboration with both internal and external stakeholders of organizations and how such knowledge spillover allows organizations to achieve competitive positioning (e.g., Borah, Iqbal, and Akhtar 2022; Zhou, Uhlener, and Jungst 2023).

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Building on this premise, recent research highlights that knowledge has become a conduit for fostering entrepreneurial orientation (EO) within organizations for adopting incoming knowledge spillovers (Anwar, Tajeddini, and Ullah 2020; Ratten and Tajeddini 2017, 2019). As stated in the knowledge management literature, the knowledge spillover perspective of entrepreneurship incorporates the role of EO in the knowledge creation and commercialization process, mentioning the role of the knowledge filter as a catalyst for fostering EO (Fan et al.). Align with the knowledge spillover theory of entrepreneurship, Iqbal et al. (2021) stress the effectiveness of EO in inculcating innovations within SMEs, highlighting that EO facilitates successfully recognizing, capturing, storing, and disseminating knowledge in the organization in the most productive manner to achieve innovative and economic advantages amidst rapid technological progression. Although studies on knowledge management in organizations interlinked with the notion of EO (Qinqin et al. 2023), this integration has not been adequately researched in the SME context today.

In addition, adopting emerging digital technologies such as social media (SM), big data analytics, and the Internet of Things has further revolutionized the landscape of knowledge exploration and exploitation within organizations (Tajeddini et al. 2024). These novel digital technologies facilitate SMEs to be innovative and proactive in crafting their business strategies by promptly capturing market insights and disseminating them to relevant stakeholders despite the inherent resource constraints they have to face (Borah, Iqbal, and Akhtar 2022). More specifically, extant literature highlights that SM provides SMEs access to a broad spectrum of knowledge related to internal and external business environments that can be leveraged to create enhanced customer value. However, comparatively little research has investigated knowledge management channels within entrepreneurially oriented SMEs.

Moreover, SMEs have recognized the importance of customer relationship management (CRM) as an innovative approach that empower them to offer customized product and service portfolios to their customers (Darvishmotevali 2019). By doing so, CRM enables SMEs to maximize their value propositions to customers in the long run by capturing and managing customer knowledge (Crosby and Johnson 2001), ultimately leading to enhanced competitiveness (Kiani et al. 2022). Consequently, over time, CRM and knowledge management notions have gained wide attention in scholarly literature as both approaches allow organizations to focus on allocating resources to formulate business strategies to achieve competitive advantages.

Although most scholars studied the concepts of EO, SM adoption, and CRM capabilities as separate research streams (Fan et al.), we see a high synergistic effect potential in a confluence of these notions, as discussed above. These three research streams are conceptually interlinked at a broader level, focusing on knowledge management processes within organizations and how they influence the well-established EO–business performance relationship. Nevertheless, the empirical evidence on this topic is fragmented, and there is still an absence of comprehensive studies investigating the interconnections of these concepts from the knowledge management perspective.

Based on the knowledge-based view (Felin and Hesterly 2007), we integrate EO, SM adoption, and CRM at the organizational process level to address this research gap. We aim to explore the mechanisms through which knowledge accumulation and spillover through EO leverages SM adoption, CRM capabilities, and environmental turbulence to enhance the performance of SMEs in developing economies by answering the following research questions.

Q1. *Does knowledge accumulation and spillover through SM adoption mediate the EO–SME performance relationship?*

Q2. *Do knowledge accumulation and spillover through CRM and environmental turbulence moderate the SM adoption–SME performance?*

This study adds to the current body of knowledge management literature by merging entrepreneurship, technology management, and marketing research streams from theoretical and managerial perspectives. This research stands out as one of the few studies that utilize the knowledge-based view to elucidate the connection between EO, SM adoption, CRM, and SME performance, explicitly linking these concepts at the organizational process level as knowledge management processes. Second, in this study, we discover a significant positive mediating effect of knowledge spillover through SM adoption and a substantial moderating role of CRM and environmental turbulence on the relationship between SM adoption and SME performance. Third, this paper conducts empirical analysis to examine the association between EO, SM adoption, CRM, and firm performance from the knowledge-based view perspective in the context of SMEs in China, which has received less attention in prior literature (Williams, Du, and Zhang 2020).

The subsequent sections of this research paper are structured as follows: Firstly, it provides the theoretical foundation for the study, followed by the proposed conceptual framework and the set of hypotheses offered. Subsequently, the adopted methodology is discussed, and the study's principal findings are presented. Finally, we discuss the implications for theory and practice, the constraints of the study, and suggestions for future research directions.

2 | Theoretical Foundation and Hypotheses Development

2.1 | Knowledge-Based View

Drucker (1999) define knowledge as “the most important resource of the twenty-first century.” Determining what kind and how much knowledge a business firm requires achieving outstanding performance should be the prime focus of any knowledge management activity. The burgeoning interest in knowledge management in scholarly research has paved the way for different theoretical models related to knowledge management that attempt to capture the inherent qualities and the accumulation and spillover of knowledge within business firms. While these different theoretical models offer valuable insights into the nature of knowledge management processes within organizations, they are most firmly rooted in the knowledge-based view.

The foundation of the knowledge-based view can be traced back to the resource-based view of the firm (Grant 1996). The knowledge-based view purports that knowledge is the most important strategic resource for a business firm to achieve a sustained competitive advantage, distinct from the conventional Ricardian perspective. It has attracted a great deal of scholarly interest as it reflects that scholars have recognized the fundamental economic shift resulting from the change in the economy from conventional products to services, which are based on manipulating information and symbols instead of physical resources.

While knowledge management has often been researched on its own, recently, scholars have drawn more attention to the interconnectedness and complementarities between internal and external knowledge sourcing and the role of knowledge spillovers within organizations, emphasizing the potential of extending it into other research streams. Consequently, although the knowledge-based view initially emerged from the strategic management literature, today, some scholars have started applying it to different research domains such as knowledge management, entrepreneurship, technology management, and marketing (Helfat and Peteraf 2015). For instance, knowledge spillover perspectives of entrepreneurship presume that new knowledge is a critical source of innovation, economic dynamism, and growth. Gerbert et al. (2003) proposed a customer knowledge management model that describes the essential elements for successful knowledge management in customer-oriented organizational processes to deliver superior customer value.

However, there is a deficiency of empirical studies investigating the confluence of interrelated multiple research streams from the knowledge management perspective. Our study aims to address this research gap by presenting a well-grounded theoretical framework that establishes the connection between EO, SM adoption, CRM, and SME performance, explicitly linking these concepts at the organizational process level as knowledge management processes.

2.2 | Hypotheses Development

2.2.1 | EO, SM Adoption, and Business Performance

EO is defined as “accepting and dealing with environmental challenges that provoke entrepreneurial behavior and initiate flexibility and adaptability within firms” (Aftab et al. 2022; Martín-Rojas, Garrido-Moreno, and García-Morales 2023; Sturm, Hohenstein, and Hartmann 2023). EO is an umbrella term encompassing three modes of managerial behavior: innovativeness, proactiveness, and risk-taking (Covin and Slevin 1989). Innovativeness refers to the inclination to participate in inventive and exploratory activities by introducing fresh products/services and advancing technology through research and development (Tajeddini and Mueller 2019). Risk-taking involves daringly venturing into unfamiliar territory, borrowing extensively, and allocating substantial resources to ventures in challenging environments (Corrêa, Queiroz, and Shigaki 2021). Proactiveness is characterized by a forward-looking and opportunity-driven mindset, marked by the early introduction of novel products and services to outpace competitors and

taking proactive measures in anticipation of future market demand (Mason et al. 2015, 1651).

Following the knowledge spillover perspective of entrepreneurship, this paper conceptualizes effective knowledge management as vital for fostering EO within organizations for adopting incoming knowledge spillovers. Notably, the characteristics of EO (i.e., innovativeness, proactivity, and risk-taking) empower business firms to collaborate on knowledge with all stakeholders and access knowledge spillovers by adopting novel and innovative technologies such as SM. SM encompasses a collection of internet-based platforms built upon the principles and technological advancements of Web 2.0. These platforms enable organizations to accumulate and exchange knowledge with greater transparency and speed, reducing information asymmetry in conventional markets (Kaplan and Haenlein 2010; Gamage and Tajeddini 2022).

SM enables business firms to create, capture, and disseminate market insights by interacting with customers and other vital stakeholders. Consequently, they support firms in collecting and applying market intelligence by modifying their existing product/service portfolios and introducing new products/services (Susanto et al. 2023). Within this research, we thus define SM adoption as the ability of an SME to use SM to explore novel insights (market intelligence exploration) and to implement these new ideas (market intelligence exploitation).

As the literature emphasized, the three core traits of EO facilitate SM adoption within a business firm (Fang et al. 2022; Susanto et al. 2023). For instance, an entrepreneurially oriented business firm tends to be more proactive and innovative by adopting SM technologies, exploring new user-generated content, and exploiting or even cocreating market intelligence (Secundo, Del Vecchio, and Mele 2021). Further, SM adoption requires a willingness from the management to take risks primarily because adopting SM platforms are highly dynamic, increasing complexity and uncertainty among firms that employ them (Troise et al. 2022; Gamage et al. 2022). As such, knowledge accumulation and spillover through EO are likely to make SMEs more amenable to adopting SM to explore and exploit novel market intelligence. Hence, we assume,

Hypothesis 1. *Knowledge spillover through EO has a significant impact on SM adoption.*

Although the EO–business performance link is one of the well-established notions in strategic management literature, the findings are not always consistent and sometimes inconclusive (Rauch et al. 2009; Soares and Perin 2020). For instance, most studies (e.g., Aftab et al. 2022; Sturm, Hohenstein, and Hartmann 2023) show a positive correlation between EO and business performance. However, as the literature reveals, a negative or insignificant relationship has also been detected in highly uncertain and turbulent economic environments (Frank, Kessler, and Fink 2010; Soares and Perin 2020). Moreover, some scholars (e.g., Ferreira, Coelho, and Moutinho 2020; Parkman, Holloway, and Sebastiao 2012; Saunila 2020) have identified a curvilinear association between EO and business performance by identifying potential mediating factors. Consequently, several other scholars (e.g., Fang et al. 2022; Susanto et al. 2023)

have suggested conducting further research on the EO–business performance relationship in different research settings to identify why such controversies occur in the findings.

However, most prior studies examining the EO–business performance relationship have not approached EO from the knowledge management perspective. Further, scant scholarly attention is being paid to examining this relationship in the SME context, primarily from the knowledge spillover perspective of entrepreneurship (Fang et al. 2022; Foltean, Trif, and Tuleu 2019). Consequently, we intend to fill this gap in the extant literature by presenting the following hypothesis:

Hypothesis 2. *Knowledge spillover through EO has a significant effect on the performance of SMEs.*

Market intelligence obtained through SM may be particularly advantageous for SMEs to enhance their business performance, which usually has inherent resource constraints to continuously monitor and capture the changing market dynamics (Borah, Iqbal, and Akhtar 2022; Mehta and Tajeddini 2016). For example, utilizing SM allows SMEs to collaborate with customers and essential stakeholders during the value-creation process. Consequently, this enables SMEs to develop fresh business models, introduce novel products/services, and adapt to existing products/services that effectively cater to the latent needs of customers (Fang et al. 2022; Tajeddini, Gamage, et al. 2024; Tajeddini, Housain, et al. 2024). Further, SM allows business firms to rapidly share information about new products/services and their commercialization process, enhancing business performance (Fang et al. 2022; Foltean, Trif, and Tuleu 2019). Thus, adopting SM becomes a conduit for incoming knowledge spillovers in SMEs to enhance their performances. Based on these arguments, we propose the following hypothesis:

Hypothesis 3. *Knowledge spillover through SM adoption has a significant influence on the performance of SMEs.*

2.2.2 | Mediating Effect of SM

As discussed above, SM, as a conduit for incoming knowledge spillovers, allows a business firm to capture rich market insights without spatial and temporal boundaries (Sigala and Chalkiti 2015). The tipping point of adopting SM is that knowledge spillovers can be achieved with low-value integration and immediate verbal and nonverbal exchange between the firms and their stakeholders (Susanto et al. 2023), thus accelerating the magnitude of entrepreneurial activities. Nevertheless, when examining the impact of adopting SM on the relationship between EO and performance, prior research has identified two distinct effects. Firstly, there is a direct influence of EO on the adoption of SM. Secondly, SM affects the performance of SMEs. However, only a few researchers have emphasized the significant role of SM as an intervening variable within the relationships mentioned above, specifically from the knowledge management perspective within the context of SMEs (Fan et al. 2021; Olanrewaju et al. 2020).

In our study, we rely on the knowledge spillover perspective of entrepreneurship to forecast the potential intervening role of SM

adoption in the connection between EO and the business performance of SMEs. Drawing from the principles of the knowledge spillover perspective of entrepreneurship, we propose that adopting SM has the potential to act as a mediator in the effect of EO on performance at the organizational process level. This is attributed to the ability of SM platforms to facilitate the accumulation and broad spillover of market intelligence. Furthermore, if SM is not effectively adopted, EO may not improve the SMEs' performance simply because the success of EO depends on how effectively employees and managers respond to incoming knowledge spillovers (Sahaym, Datta, and Brooks 2021; Tajeddini and Trueman 2008). The above arguments led us to develop the following hypothesis.

Hypothesis 4. *The relationship between EO–the performance of SMEs is mediated by knowledge spillover through SM adoption.*

2.2.3 | Moderating Effects of CRM and Environmental Turbulence

CRM is a crucial marketing procedure that influences the performance and long-term viability of a business organization (Guerola-Navarro et al. 2022). As a strategic approach, this process aims to improve business performance by establishing, nurturing, and sustaining mutually beneficial relationships with both prospective and valuable customers. It integrates relationship marketing and information technology perspectives to achieve these objectives (Payne and Frow 2005). Expanding upon this notion, previous studies have conceptualized CRM capabilities as the “capacity of an organization to efficiently utilize relational resources” (Vorhies, Orr, and Bush 2011, 739). Existing literature on SM–firm performance link state that the relationship between these concepts will likely be strengthened by different dynamic capabilities owned by business firms (Foltean, Trif, and Tuleu 2019). Since the essence of this study revolves around knowledge management processes within SMEs, based on prior literature, CRM capabilities, and environmental turbulence are considered potential moderators that intervene in the knowledge spillover through SM adoption–performance of SMEs relationship.

Although some scholars have viewed SM as chaotic and resulting in excessive information overload (Marchand, Hennig-Thurau, and Flemming 2021), the adoption of SM holds the power to revolutionize markets and business landscapes by facilitating market intelligence accumulation and broad spillover. Further, it can even give rise to new business models, ultimately boosting firm performance (Fang et al. 2022; Foltean, Trif, and Tuleu 2019). Recent marketing literature emphasized that coupling CRM capabilities with effective SM adoption has opened avenues for market intelligence accumulation and broad spillover (Gamage, Gnanapala, and Ashill 2023). Additionally, CRM capabilities can moderate the SM adoption–performance link by enabling SMEs to integrate and analyze customer knowledge, target marketing efforts, provide better customer service, build relationships, and track performance metrics. Integrating CRM and SM can potentially enhance customer engagement and satisfaction, improving business performance (Foltean, Trif, and Tuleu 2019). Nevertheless, it is crucial to acknowledge

that the interplay between CRM capabilities, SM adoption, and performance can be intricate and contingent on the specific context. While CRM capabilities can influence SM adoption and performance, they may also positively affect how they are implemented and utilized (Qalati et al. 2022). Thus, from the knowledge-based view, it can be argued that CRM capabilities strengthen the negative SM adoption and SME performance relationship by creating novel ways of reaching and collaborating with customers, thus facilitating effective customer knowledge management (Figure 1). Consequently, we expect the following:

Hypothesis 5. *CRM moderate the knowledge spillover through SM adoption–performance relationship such that CRM capabilities strengthen the negative knowledge spillover through SM adoption–performance of SME relationships.*

Environment turbulence refers to the dynamic and unpredictable nature of the external environment in which an organization operates (Hina et al. 2021). According to Dost et al. (2019, 1248), it is “often considered as discrete, prominent and unpredictable events in the environment such as significant technological changes, dramatic changes in economic, climate, boycotts by environmentalists, and so on.” It encompasses various factors and forces that create instability, uncertainty, and rapid changes, impacting the business landscape. Frequent shifts, disruptions, fluctuations in market conditions, technological advancements, competitive dynamics, consumer behavior, and changes in regulatory frameworks characterize environment turbulence.

Previous research has categorized environment turbulence into two main forms: market turbulence and technological turbulence (Hina et al. 2021; Turulja and Bajgoric 2019). Market turbulence refers to the extent of changes in customer preferences and behaviors. On the other hand, technological turbulence pertains to the speed of changes associated with products, processes, and technologies within an industry or business environment in which an organization operates. Environment turbulence is widely recognized as a crucial characteristic of the modern business landscape. Previously, Tsai and Yang (2014) and Turulja and Bajgoric (2019) observed that market and technological changes in the external environment may generate constraints and opportunities for the firm.

In the context of SMEs adopting SM, it has been argued that the rapid pace of technological advancements in SM platforms

and related technologies can lead to frequent changes and updates in incoming knowledge spillovers (Yulianto 2021). Additionally, SM use has become increasingly important for firms to connect with customers, promote products or services, and enhance brand visibility. However, the impact of SM use on firm performance can vary depending on the level of environment turbulence (Hartono and Sheng 2016). Thus, Rajala and Hautala-Kankaanpää (2023) argued that in a highly turbulent environment, firms that effectively leverage SM platforms to adapt to changing market conditions, monitor customer feedback, and quickly respond to emerging trends are more likely to outperform their competitors. The dynamic nature of the environment necessitates a proactive and agile approach to SM adoption, and firms that successfully navigate the turbulence can achieve superior performance. Thus, the contingency theory perspective proposes that a company should undertake actions that align with its specific environmental circumstances to achieve success (Battilana and Casciaro 2012; Li et al. 2017). We propose that:

Hypothesis 6. *Environment turbulence moderates the knowledge spillover through SM adoption–performance relationship such that environment turbulence strengthens the positive knowledge spillover through SM adoption–performance of SME relationship.*

3 | Methodology

3.1 | Data Collection and Sampling

Data were drawn from a web-based questionnaire survey targeted at a random sample of 519 SMEs in Beijing in the north of China. The respondents were owners and top-level managers of the SMEs, as they are well aware of firms’ performances and make decisions about adopting and implementing emerging technologies. The survey was created using a star survey. A direct link was disseminated to all participants through emails and WeChat. Since the variability of the service firms cannot be measured, considerable sample size was regarded as per the suggestion of Memon, Umrani, and Pathan (2017) to generalize the results. To maximize the response rate, the respondents were contacted with two follow-up emails on the 2nd and 4th week after distributing the survey link. Further, a follow-up telephone call was also given a few days before expiring the survey link to

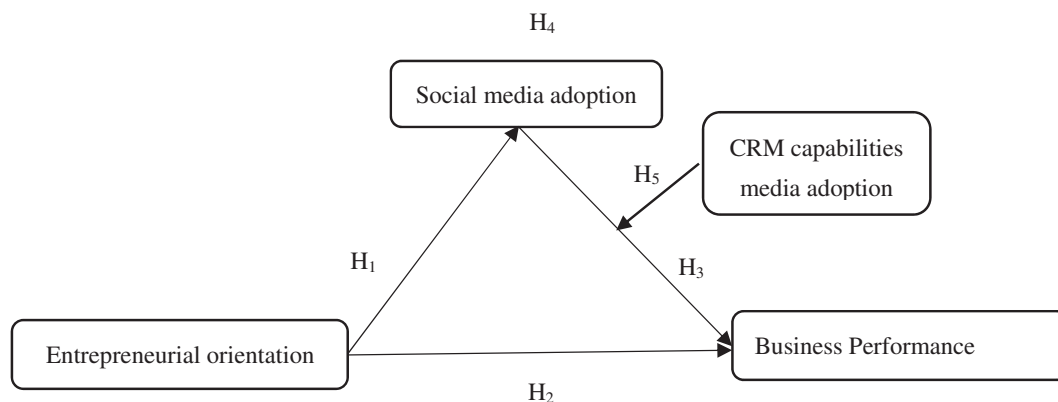


FIGURE 1 | Hypothesized model.

encourage them to participate in this study. Consequently, 519 valid responses were received.

Nearly two-thirds, 333 (64.2%), were males, and 186 (35.8%) were females. Of them, 19.8%, 56.3%, and 23.9% were aged between 18 and 25, 26 and 35, and over 35 years, respectively. Regarding education, 311 (59.9%) had master's and 208 (40.1%) had bachelor's and other degrees. Most of them, 359 (69.2%), were managers, and 160 (30.8%) were owners. Of 519 SMEs, 51.8%, 17.9%, 13.9%, and 16.4% had 1–5, 6–50, 51–100, and 51–250 employees, respectively.

3.2 | Measures

This study utilized established and validated measurement scales from previous research, employing five-point Likert scales ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). To measure EO, eight items were adopted from Dutot and Bergeron (2016). To evaluate respondents' perceptions about SM adoption, five items from Parveen, Jaafar, and Ainin (2016) and Toker et al. (2016). The CRM capabilities were assessed using five items adapted from Orr, Bush, and Vorhies (2011). ET was measured using five statements from Turulja and Bajgoric (2019). The performance of SMEs was evaluated using seven statements adopted from Ainin et al. (2015).

4 | Results

4.1 | Common Method Bias (CMB)

To assess CMB, this research employed a single informant self-reported data collection procedure. We employed a full collinearity approach using the partial least square structural equation modeling proposed by (Hair et al. 2019; Kock 2015). According to Kock and Lynn (2012), employing a complete collinearity approach offers a more comprehensive evaluation method for both lateral collinearity and vertical collinearity. In particular, the variance inflation factor (VIF) has been used to detect the CMB. Table 1 expresses that inner VIF values were retained below 3.33, the acceptable threshold. Hence, we conclude that the present study data is free from the potential threat of CMB.

In this study, we opted for partial least squares structural equation modeling (PLS-SEM) due to its ability to simultaneously analyze both the structural and measurement models, resulting in more accurate findings (Hair et al. 2019). Besides, it is less strict in terms of the data validity and sample size (Qalati et al. 2022). Additionally, it is the most widely used approach when the objective is to test the hypotheses and a complex model. Furthermore, it has been determined that PLS-SEM is the most suitable approach when the research objective involves prediction and theory development (Dash and Paul 2021). As Hair, Ringle, and Sarstedt (2011) suggested, this study followed a two-step approach to evaluate the proposed framework. First, the measurement model was assessed, and then the structural model was examined. Table 1 represents that individual item was assessed using factor loadings, and all the values were retained over the 0.7 required threshold. The Cronbach's alpha (CA) was utilized to evaluate the measurement scales' reliability.

Table 1 shows that the CA of all constructs was observed over the 0.7 required threshold. Besides, we also used composite reliability (CR) to evaluate the internal consistency of the variables and their values retained over the 0.7 required threshold (Hair et al. 2019). Moreover, we used the average variance extraction (AVE) to assess the convergent validity, which requires it to be over 0.5 (Fornell and Larcker 1981).

According to the findings presented in Table 2, the square root of the AVE for each construct demonstrates a higher value than the correlations between the constructs and other constructs in the model. This outcome supports the assertion of discriminant validity (Fornell and Larcker 1981). As shown in Table 2, the discriminant validity of the constructs was supported since the lowest level of AVE is 0.80, and the highest correlation between latent constructs is 0.73.

We used blindfolding and bootstrapping approaches to evaluate the path relationships and estimate the proposed model's power, referring to R^2 and Q^2 values. The R^2 and Stone-Geisser's Q^2 values were found as 0.741 and 0.650, respectively. The R^2 (0.741) infers that a 74.1% change in the performance of SMEs occurred due to EO, SM adoption, CRM, and ET. Our study R^2 values 0.453 (SM adoption), and 0.741 (performance of SMEs) has moderate and substantial explanatory power (Hair et al. 2019), whereas $Q^2 > 0$ is believed to have predictive relevance and rated 0.35, 0.15, and 0.02 as large, medium, and weak (Chin 1998). Accordingly, the calculated R^2 and Q^2 values confirm the adequate predictive relevance of the structural model. According to the recommendations by Hair et al. (2019), the standardized root mean square residual (SRMR) is a reliable method for assessing the goodness of fit. A value of zero indicates a perfect fit, while a value below 0.08 is considered a favorable fit. In this study, the SRMR value is 0.038, significantly lower than the acceptable threshold of 0.08, indicating a good fit (see Table 3).

This research accepted all of the hypotheses at the 5% significance level ($p < 0.05$). The findings presented in Table 3 indicate that both H1 and H2 are supported. This is evident from the significant impact of EO on SM adoption ($\beta = 0.673$, $p < 0.001$) and the performance of SMEs ($\beta = 0.213$, $p < 0.001$). Furthermore, a noteworthy correlation is observed between SM and the performance of SMEs ($\beta = 0.243$, $p < 0.001$), leading to the acceptance of H3. Additionally, it was discovered that SM serves as a significant mediator in the association between EO and the performance of small and medium enterprises (SMEs) ($\beta = 0.164$, $p < 0.002$). Therefore, H4 is confirmed, indicating that the adoption of SM acts as a mediator between EO and firm performance. Regarding the moderating effects of CRM capabilities and ET on the relationship between SM adoption and performance, compelling evidence suggests that CRM capabilities negatively influence the above relationship ($\beta = -0.119$, $p < 0.001$), thus supporting H5. Conversely, in support of H6, it is evident that as ET increases within a firm, the relationship between SM adoption and performance also improves ($\beta = 0.197$, $p < 0.001$).

The interaction patterns are depicted in Figures 2 and 3. These figures showcase the predicted values of performance for SMEs, represented by vertical lines. The horizontal lines represent the levels of CRM capabilities and ET, distinguishing between low and high values. Figure 1 demonstrates that the slope is more

TABLE 1 | Assessment of measurement model.

Construct	Items	Loading	CA	CR	AVE	Inner VIF
Entrepreneurial orientation (EO)	1	0.864	0.958	0.961	0.786	2.158
	2	0.898				
	3	0.908				
	4	0.885				
	5	0.873				
	6	0.883				
	7	0.902				
	8	0.879				
Social media adoption	1	0.920	0.945	0.946	0.821	2.435
	2	0.931				
	3	0.925				
	4	0.868				
	5	0.885				
Customer relationship management (CRM) capabilities	1	0.882	0.938	0.939	0.801	2.108
	2	0.878				
	3	0.923				
	4	0.895				
	5	0.896				
Environmental turbulence	1	0.805	0.882	0.886	0.679	1.538
	2	0.793				
	3	0.824				
	4	0.835				
	5	0.861				
Performance of SMEs	1	0.850	0.943	0.944	0.746	
	2	0.899				
	3	0.867				
	4	0.863				
	5	0.867				
	6	0.872				
	7	0.828				

TABLE 2 | Discriminant validity.

Constructs	1	2	3	4	5
1. Customer relationship management (CRM) capabilities	0.895				
2. Entrepreneurial orientation (EO)	0.619	0.886			
3. Performance of SMEs	0.752	0.664	0.864		
4. Environmental turbulence	0.489	0.505	0.643	0.824	
5. Social media adoption	0.817	0.673	0.764	0.484	0.906

Note: Sample size = 519. The lower triangle of the matrix contains the correlation values, while the diagonal elements in bold represent the square root of the average variance extracted.

TABLE 3 | Assessment of structural model.

		β	SD	t-value	Decision	f^2
Hypothesis 1	EO → social media adoption	0.673	0.031	20.989***	Accepted	0.829
Hypothesis 2	EO → performance	0.213	0.044	4.835***	Accepted	0.081
Hypothesis 3	Social media adoption → performance	0.243	0.078	3.119**	Accepted	0.027
Hypothesis 4	Entrepreneurial orientation → social media adoption → performance	0.164	0.052	3.119**	Accepted	
Hypothesis 5	CRM capabilities × social media adoption → performance	-0.119	0.046	2.559**	Accepted	0.020
Hypothesis 6	Environmental turbulence × social media adoption → performance	0.197	0.033	5.935***	Accepted	0.138

Note: R^2 (social media adoption) = 0.453 and R^2 (performance of SMEs) = 0.741. Q^2 (social media adoption) = 0.451 and Q^2 (performance of SMEs) = 0.650. SRMR = 0.038. ** $p < 0.01$. *** $p < 0.001$.

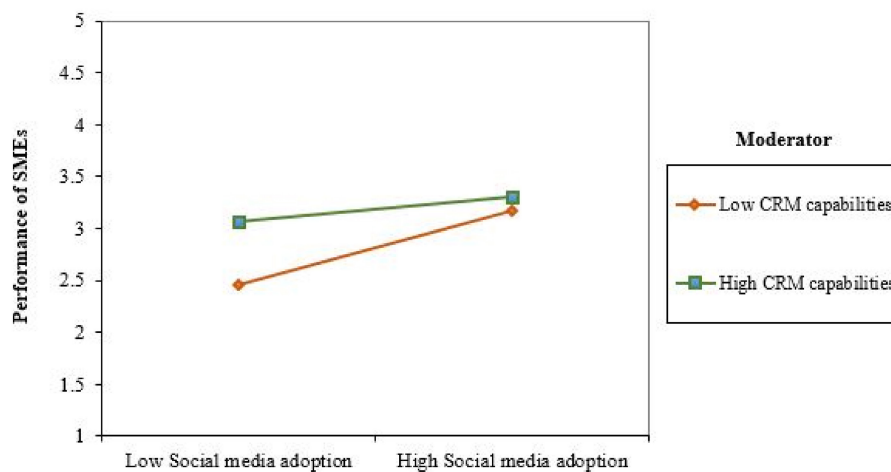


FIGURE 2 | Moderation effect of CRM capabilities. [Colour figure can be viewed at wileyonlinelibrary.com]

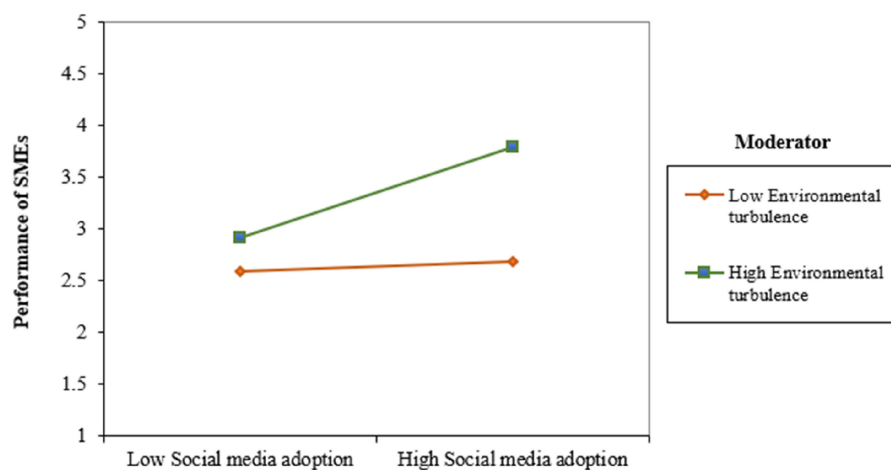


FIGURE 3 | Moderation effect of environmental turbulence. [Colour figure can be viewed at wileyonlinelibrary.com]

pronounced for low CRM capabilities compared to high CRM capabilities. This observation suggests that CRM capabilities weaken the association between SM adoption and performance. The findings confirm a negative moderating effect of CRM

capabilities on the relationship between SM adoption and performance, supporting H4. Figure 2 illustrates the interaction plot of SM and ET on performance. The steeper slope for the high ET level than the low ET level suggests that ET strengthens

the SM–performance relationship. The results confirm a positive moderating effect of ET on the relationship between SM and performance. Therefore, H5 is supported. The empirical findings and depicted plots are consistent with our predictions. Overall, these results support our hypotheses.

5 | Discussion and Conclusions

5.1 | Empirical Results

This study empirically examined the influence of knowledge spillover through EO on the performance of SMEs in emerging economies. Specifically, we investigated the mechanisms through which knowledge spillover through EO operates, including SM adoption, CRM, and ET, to enhance SME performance.

Our research findings contribute to the existing knowledge regarding the link between EO and business performance, particularly in the context of SMEs operating in China. It revealed the vital role of SM adoption, CRM, and ET in enhancing the business performance of entrepreneurially oriented SMEs. In particular, our study reveals compelling evidence supporting the mediating role of SM in the relationship between EO and business performance. Additionally, we observe that CRM capabilities and ET act as moderators in this relationship. The findings of this study align with previous research conducted by Borah, Iqbal, and Akhtar (2022), Fang et al. (2022), and Nguyen, Nguyen, and Do (2022). These studies also emphasize the mediating role of SM adoption and usage in the relationship between EO and business performance among SMEs. Similar to the emphasis made by Fang et al. (2022), our study's findings also support the notion that SM contributes to improved management of firm-customer interactions, strengthening CRM capabilities, and ultimately enhancing firm performance. However, this paper takes a step ahead as most of these studies lack a theoretical perspective explaining how SM adoption contributes to the said relationship.

Further, in line with the existing marketing and innovation management literature, this research outcome adds to evidence from SMEs operating in an emerging economy that innovation and CRM capabilities lead to firm performance (Borah, Iqbal, and Akhtar 2022; Fan et al. 2021; Fang et al. 2022). To improve their business performance, SMEs should consider embracing innovative technologies, such as SM platforms, which can effectively enhance CRM and foster a culture of innovation.

5.2 | Theoretical Contributions

This study makes a valuable contribution to the current body of knowledge management literature by merging it with entrepreneurship, technology management, and marketing research streams in many ways. This research is among the limited number of studies that utilize the knowledge-based view to elucidate the relationship between EO and the performance of SMEs, with a specific emphasis on the adoption of SM and CRM as knowledge management processes at organizational level. The literature expresses that limited studies have been produced

on understanding how knowledge management processes enable SMEs to enhance their competitiveness and performance from a theoretical perspective (Abu-Rumman et al. 2021; Fan et al. 2021). By addressing this void, this paper conceptualized EO, SM adoption, and CRM from knowledge management perspective. More specifically, in this study, we empirically proved how adoption of SM and CRM work in conjunction with EO, in improving business performance from the knowledge management perspective.

The second contribution of the present study resides in identifying knowledge spillover through SM adoption as a mediator in the relationship between EO and business performance in the context of SMEs. Third, identifying the CRM and environmental turbulence as moderators of the said relationship in the SME context is another novel implication of the present paper. By uncovering that, this paper extends the “practice” perspective of SM adoption and CRM within SMEs by conceptualizing those as knowledge management processes from a theoretical perspective (Foltean, Trif, and Tuleu 2019).

Finally, although studies focusing on SMEs are advancing at a greater rate in the developed economies context (Beynon, Jones, and Pickernell 2021; Kusa, Duda, and Suder 2021), only a few attempts have been made to examine the relationship between EO, technology deployment, ET, and the business performance of SMEs in the emerging economies context (Fang et al. 2022). Further, the studies conducted in the emerging economies context mainly focused on examining the direct relationship between EO and business performance and have come from China (Liu and Wang 2022; Zhai et al. 2018), South Korea (Kim and Hur 2022), Thailand (Vaitoonkiat and Charoensukmongkol 2020), and a few from India (Chatterjee et al. 2022; Gupta and Batra 2015). Yet, studies focusing on investigating the interplay between EO, technology deployment, ET, and the business performance of SMEs in China from the knowledge management perspective are comparatively rare (Borah, Iqbal, and Akhtar 2022; Fang et al. 2022; Qalati et al. 2021). Hence, this paper offers novel insights into the dynamics involved in the linkage between EO, technology deployment, innovation capabilities, and the business performance of SMEs operating in the emerging economies context, explicitly referring to SMEs in China.

5.3 | Managerial Implications

The findings of this paper reveal the importance of improving the DCs (i.e., SM adoption, ET, and CRM capabilities) in enhancing the performance of SMEs. As the findings emphasized, SM adoption is instrumental in improving CRM capabilities and ET within SMEs, which will contribute to increased business performance. This is because SM enables SMEs to foster relationships with customers and key stakeholders to collaborate and cocreate value despite the inherent resource constraints (Borah, Iqbal, and Akhtar 2022), which contributes to the growth of market share, sales, and profitability in the long run. Therefore, to avoid the risk of being left behind by innovative organizations adopting SM, managers and owners of SMEs should view effective SM adoption as a strategic priority for enhancing performance.

Since effective technology deployment is inherently risky, only SMEs with an entrepreneurially oriented can exploit its true potential to enhance the firm performance (Fang et al. 2022). Consequently, as the findings indicate, managers and owners of SMEs need an entrepreneurial mindset to be competitive in modern markets. However, most SMEs in emerging economies still view SM as a panacea. Instead, as the findings reveal, they should be entrepreneurially oriented and develop strategic flexibilities in their resource allocation and coordination in effective SM adoption to stimulate CRM and ET, which may help them escape the resource trap.

5.4 | Limitations

The present study has many drawbacks that provide exciting avenues for further studies. First, this study is conducted from an emerging country perspective, primarily focusing on SMEs located in China. However, the adoption and implementation of emerging technologies are not uniform in all emerging economies, so testing the proposed relationships in different research settings would be exciting research to pursue. Second, in this research, since we have collected data from a single source, it could introduce bias in the key findings. Upcoming studies should adopt the multi-informant approach by collecting data from multiple respondents from an SME to rectify the differences in their insights. Third, we employed unidimensional constructs to measure the key constructs used in this study, limiting their scope. However, future studies can use multidimensional constructs to measure the key constructs such as EO, environmental turbulence, and firm performance to better understand those concepts in rich detail in the SME context. Fourth, we explored the effect of SM adoption by considering all the SM technologies (i.e., social networks, blogs, and wikis) together. Since each SM technology platform offers different benefits and has distinctive facets, upcoming scholars can focus on each platform and explore whether the proposed relationships hold. Further, such investigations may provide more robust knowledge regarding how each SM platform influences the performance of SMEs.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

Data will be provided upon the request.

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