Utilizing Social Media Platforms to Foster Entrepreneurial Communication among Start-up Communities

Fengjin Zhou

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Fengjin Zhou ✉

https://orcid.org/0009-0002-5032-6634

College of Teacher Education
Nanyang Institute of Technology, Henan 473004, China
College of Teacher Education
East China Normal University, Shanghai 200062, China
hnnyzfj@nyist.edu.cn

Abstract

Social media networks are an essential component for the enhancement of modern business environment. These networks provide entrepreneurs with a platform for their startups' development and scalability. However, little is known about the impact of social media used as a communication tool in identifying scalability among startups. Using dynamic capabilities theory, this study examines how specific characteristics, such as innovation and opportunity creation, affect the scalability of startups. The research aimed at a sample of owners or managers of Chinese startups. Purposive sampling approaches were used to choose participants, and data was gathered via a questionnaire and analyzed using SmartPLS 4.0 for PLS_SEM. The findings indicate that use of social media for customer relations and services is the strongest predictor of innovation, followed by social media marketing—the innovation toward the scalability of startups and the innovation toward opportunity creation. These results have significant practical implications for how social media affects entrepreneurship and may be utilized to improve entrepreneurs' capacity to uncover new possibilities and build relationships with customers, suppliers, workers, and partners.

Keywords

Social Media, Communication Tools, Innovation, Opportunity Creation, Scalability, Start-Ups and China.

1. Introduction

The fast expansion of China's economic environment has raised the necessity for start-ups to adopt strategies that will allow them to sustain a competitive edge in dynamic marketplaces. Start-ups have emerged as vital global economic development and innovation drivers, significantly satisfying market demands and providing employment opportunities (**Audretsch *et al.***, 2020). With its broad reach and interactive capabilities, social media has transformed communication and information distribution, providing unique potential for startups to boost operational efficiency and market presence. Despite the growing use of social media in corporate operations, it is still unclear how it influences the success of start-ups, particularly in developing economies like China (**Gupta *et al.***, 2024). Start-ups must also navigate an unpredictable and resource-constrained world in which their capacity to innovate and find opportunities is critical to their success. While social media is an effective tool for marketing, customer interaction, and information access, its potential as a dynamic capability to help startups develop and generate possibilities has yet to be completely explored (**Rizvanović *et al.***, 2023).

Social media has altered the business environment by giving start-ups cost-effective and focused tools for connecting with their audience, building brand awareness, and gaining (**Olivieri; Testa**, 2024). Platforms such as Instagram and TikTok have made it easier for start-ups to launch personalized campaigns, which are growing more popular among young people. Two-way communication via social media fosters trusts and community development, which startups need to create a brand identity (**Chen; Lee**, 2024). Many start-ups use different platforms to test new ideas and evaluate audience reactions via postings, surveys, and polls. This enables them to judge the concept's reality before committing substantially. Social media has also emerged as a vital tool for startups. So that they can efficiently manage customer relationships and offer services, building trust, loyalty, and brand awareness while improving user engagement, startups, who sometimes operate

with little resources, and can consider social media platforms as an alternative to conventional customer relationship management (CRM) tactics that enable direct and real-time connections with consumers (**Malinao**, 2024). In the current digital era, access to information is a critical success element for start-ups, and social media plays a significant role. To help the flow of information, startups may connect efficiently with consumers, investors, and other stakeholders using platforms like Facebook, LinkedIn, Twitter, and Instagram. However, effective techniques are necessary to address information trustworthiness and load issues. With the correct techniques, social media can be a tremendous engine for startups' development and scalability, assuring their success in dynamic marketplaces.

Despite the plethora of studies and accessibility of information though social media, there exists a gap in making social media as an effective tool for marketing, customer interaction, and information access. This gap is especially noticeable in China, where the corporate environment is shaped by distinct social, cultural, technical, and legal variables. To bridge this gap, the current study seeks to investigate how different components of social media, such as marketing, customer relations and services, and information access, contribute to the scalability of start-ups by fostering innovation and prospects for expansion. This study is based on the Dynamic Capabilities Theory, which highlights that firms may integrate, create, and reconfigure internal and external capabilities in a dynamically changing environment (**Muneeb *et al.***, 2023). This study also aims to examine how social media improves information availability and how it influences start-ups, particularly in the information distribution, decision-making, and strategic planning. This study also examined how social media platforms enable start-ups to efficiently spread information, which is a considerable benefit given the scarcity of resources in early-stage enterprises.

This study has several implications. First is that it broadens the applicability of the Dynamic Capabilities Theory by viewing social media use as a dynamic capability that promotes innovation and opportunity. Second, it contributes to the current literature by looking further into the influence of social media on start-ups, which is still a relatively unexplored field. Third, it delivers actionable lessons for entrepreneurs and policymakers, emphasizing the practical value of using social media to help startups grow. Finally, the results explain how start-ups might use social media to achieve long-term success, adding to a broader topic on digital transformation and entrepreneurship (**Griva *et al.***, 2023). For academics, this study offers new opportunities to research the relationship between social media and corporate growth. For practitioners, it underlines the strategic relevance of using social media in order to innovate and capitalize on marketing possibilities. It gives evidence-based recommendations for policymakers to foster a system of start-ups, particularly in a digital and resource-constrained context.

2. Literature Review

2.1. Social Media Use for Marketing

Startups often experience a shortage of resources, making social media marketing (SMM) an advantageous avenue. So they can market items and services without spending much money. **Olivieri and Testa** (2024) noted that the participatory aspect of social media enables startups to break down conventional marketing boundaries and develop direct interactions with consumers. Furthermore, start-ups may react rapidly to customer input, ensuring their offers align with market expectations. **Trad and Dabbagh** (2020) observed that startups that use social media targeting campaigns had greater user engagement rates than conventional marketing strategies, which improves the relevancy of targeted content. This direct interaction boosts customer loyalty and enhances the reputation of start-ups as transparent and approachable (**Mathur**, 2024). The cheap cost of social media provides a significant advantage for start-ups, allowing them to launch meaningful campaigns with little financial input (**Vrontis *et al.***, 2023). Innovative platform analytics enable start-ups to analyze and optimize campaign results, ensuring that resources are employed efficiently (**Haouari; Haouari**, 2024). Startups may use targeted advertising to maximize their return on investment by tracking KPIs like conversion and click-through rate. Influencer marketing has increased the effect of social media marketing (SMM) for startups since micro-influencers provide more real engagement than conventional celebrity endorsements at a lesser cost (**Sharma; Singh**, 2022).

Furthermore, user-generated content initiatives encourage consumers to share their experiences, increasing brand legitimacy and lowering marketing expenditures (**Hochstein *et al.***, 2023). However, SMM does provide some obstacles. It is challenging for start-ups to carve out their niche due to the abundance of material on social media sites (**Henry *et al.***, 2024). Start-ups often struggle to hire specialist teams or create high-quality graphic material because of a lack of funding. The GDPR and other privacy restrictions limit the data accessible for targeted advertising, complicating campaign methods (**Bleier *et al.***, 2020). Furthermore, modifications to the platform's algorithms, such as those on Facebook and Instagram, diminish organic reach, requiring startups to depend on sponsored advertisements, which strains budgets.

In addition to marketing, social media is a tool for innovation, enabling start-ups to discover trends, collect insights, and co-create goods with consumers (**Re; Magnani**, 2022). In China, platforms like WeChat and Douyin have become essential for start-ups, offering integrated services like e-commerce and payment systems to make the customer journey smoother (**Huyue Zhang**, 2022). Douyin's short video content is very successful in driving engagement and conversions. Western platforms, such as Instagram and Facebook, are centered on community building and storytelling,

allowing startups to develop emotional ties via openness and authenticity (**Camacho; Barrios**, 2022). Emerging technologies, such as artificial intelligence (AI) and augmented reality (AR), provide new options for startups to scale their social media strategy. AI-powered analytics enable startups to forecast user behavior, while AR generates experiences that set them apart from competition (**Cerruti; Valeri**, 2022). Future study should look at how these technologies may be incorporated into SMM. So that start-ups may thrive in a competitive digital world. Social media marketing, although needing constant refining and innovation, is a vital tool for start-ups. Hence, they can deal with the resource crisis, foster innovation, and achieve scalability.

2.2. Social Media Use for Customer Relations and Services

Social media has also transformed customer service, enabling start-ups to react rapidly to queries and concerns, resulting in higher user satisfaction. Platforms such as Twitter and Facebook give real-time replies that assist start-ups in establishing their reputation and credibility (**Singhal; Kapur**, 2023). Active involvement, such as reacting to customer problems and giving discounts, boosts user pleasure and loyalty. Active social media participation has raised the anticipated value of customer service, resulting in improved user loyalty and positive word-of-mouth advertising (**Ryu; Park**, 2020). Regular interactions on these platforms boost the startup's exposure and trustworthiness, resulting in strong consumer perception and brand distinction. Startups that communicate openly on social media are often seen as more user-centric, which is critical for creating a market presence (**Sheth *et al.***, 2024). Transparency and open communication via social media interactions help to humanize start-ups, increasing user trust and loyalty (**Allal-Chérif *et al.***, 2024). Despite its advantages, start-ups struggle to use social media successfully. Startups cannot maintain prolonged engagement due to a lack of resources and competence in maintaining social media accounts and reacting promptly to customer inquiries (**Reuber; Fischer**, 2022).

Furthermore, poorly handled interactions may harm a startup's image since negative feedback travels rapidly. Continuous adjustment to the dynamic nature of social media is also a significant problem for startups, particularly those with little resources. In the early phases, start-ups may adapt interactions to customer preferences, create emotional bonds, and build brand loyalty using features such as targeted advertising and tailored content (**Rizvanović *et al.***, 2023). On the contrary, in current times, social media gives start-ups a considerable edge in maintaining customer connections and providing services. Start-ups may increase customer happiness and build long-term loyalty via real-time replies, tailored interactions, and proactive engagement. However, it is vital to overcome the shortage of resources and create innovative social media management approaches. So that these benefits can be fully realized and a competitive edge can be maintained in a changing market environment.

2.3. Social Media Use for Information Accessibility

Tajpour *et al.* (2023) underline that startups use social media to disseminate updates on their goods, services, and business advancements, reaching a larger audience than conventional media. Start-ups may use social media to analyze market trends, consumer feedback, and competition (**Zhang *et al.***, 2022). This real-time interchange enables startups to remain nimble and sensitive to market developments, a critical capability for growth and survival. Furthermore, social media platforms facilitate knowledge sharing and networking. **Diriker *et al.*** (2023) underline that open innovation is flourishing. When businesses use external expertise to enhance internal operations, startups may benefit from networks like LinkedIn and Twitter, which allow them to connect with industry experts and possible partners, boosting innovation and strategic collaboration (**Olivieri; Testa**, 2024). Such contacts give start-ups market and operational data, allowing them to optimize their business strategy.

Social media gives unique access to consumer data, enabling startups to obtain real-time feedback and adapt their tactics appropriately. Hennig-Thurau et al. According to **Olivieri and Testa** (2024), monitoring internet debates may help start-ups uncover market gaps and alter their products. Informal market research tools, such as surveys, polls, and user-generated content, are available on platforms such as Instagram and Facebook and are inexpensive alternatives to established research techniques (**Sykora *et al.***, 2022). Using social media allows startups to learn about investor preferences and financing prospects. **Block *et al.*** (2021b) contend that monitoring prospective investors' social profiles gives useful information for focused financing attempts. Social media platforms like Kickstarter and Indiegogo democratize financing by enabling start-ups to communicate directly with a larger audience, circumventing established investment channels (**Block *et al.***, 2021a). Social media's real-time capabilities enable start-ups to monitor user requirements, industry trends, and rival actions, therefore informing strategic decision-making. Startups may access a tremendous quantity of usable data using tools like Twitter Analytics and LinkedIn Links (**Singhal; Kapur**, 2023). This data-driven strategy facilitates rapid reactions to market situations and enhances strategic planning. Furthermore, social media serves as a networking platform for start-ups.

Entrepreneurs can improve their company models by sharing ideas and expertise with their mentors, peers, and colleagues. **Do *et al.*** (2022) found that such networks assist in boosting innovation and resilience. While social media offers several advantages, start-ups have hurdles in verifying the reliability and usefulness of information. The open nature of

social media may expose firms to false information, biased material, and information overload. **Spiekermann *et al.*** (2022) emphasize the perils of untrustworthy data and the significance of information verification and filtering for startups. Effective use of analytics tools may help start-ups reduce these risks by identifying meaningful insights from a large amount of online information (**Zamani *et al.***, 2024). Social media has transformed how startups acquire information by offering low-cost tools for real-time interactions, market research, and strategic decision-making. Start-ups may improve their innovation capabilities and competitive advantage by using networking and knowledge-sharing platforms.

2.4. Innovation in Start-ups

Startups engage in various forms of innovation, including product, process, and business model innovation. Innovation in start-ups provides competitive advantage, market distinctiveness, and scalability. It entails creating, accepting, and implementing innovative ideas, procedures, products, or business models that help start-ups succeed in the face of uncertainty and a lack of resources (**Pricopoaia *et al.***, 2024). Startups use innovation for product creation and process efficiency, customer relationship techniques, and building a forward-thinking company culture. Product innovation often makes use of technology, while process innovation focuses on improving internal processes, it does not aim to address consumer issues or develop new markets to enhance scalability and operating efficiency (**Khan *et al.***, 2021). A business attitude defined by creativity, adaptability, and a willingness to question conventions is also a key driver of innovation in start-ups, promoting discovering unmet needs and creating new solutions (**Corvello *et al.***, 2023). Contrary to popular belief, a lack of resources fosters innovation because it drives startups to adopt innovative bootstrapping tactics, such as cutting costs and increasing efficiency using new technology (**Chammassian; Sabatier**, 2020). Furthermore, external variables such as market dynamics, rivalry, and shifting consumer expectations drive the need for ongoing innovation. Accordingly, start-ups may remain relevant and competitive (**Paoloni; Modaffari**, 2022).

Despite its importance, various barriers to innovation in start-ups exist. Limited financial resources, a lack of competent employees, and legal constraints may impede research and development activities, thereby impeding the innovation of start-ups (**Ferrucci *et al.***, 2021). Innovation's high degree of uncertainty and risk exacerbates these issues, necessitating a supportive company culture and robust risk management measures. Business model innovation also entails reconsidering value creation, delivery, and acquisition, with startups frequently experimenting with revenue models like subscription services and platform-based ecosystems (**Böttcher *et al.***, 2022). These breakthroughs enable start-ups to develop first-come, first-serve advantages, particularly in technology-driven industries, encouraging massive growth.

Furthermore, start-ups' absorptive capacity, or ability to adopt and use external information, is critical in removing obstacles to innovation. External networks and ecosystems are critical in encouraging innovation by supplying start-ups with resources, expertise, and market possibilities (**Magliocca *et al.***, 2023). Collaboration networks, collaborations, and mentoring programs help to speed the process of value co-creation and innovation by improving the capabilities of startups. Startup ecosystems, such as incubators and accelerators, promote future innovation by offering coaching, money, and infrastructure, dramatically increasing startup efficiency and innovation success (**Kulkov *et al.***, 2021). Innovation is critical to startup development and long-term viability, enabling market access, customer acquisition, and value creation (**Joel; Oguanobi**, 2024). While there are constraints such as a lack of resources and legislative limits, startups may overcome these by encouraging creativity, using external networks, and embracing open innovation approaches. With proper strategies and assistance, innovation may serve as a potent driver for start-ups' development and scalability, assuring their competitive position in a dynamic market context.

2.5. The creation of opportunities for Startups

Opportunity creation is a critical idea in company growth that defines how entrepreneurs actively find, create, and use possibilities rather than passively observing them (**Zahra *et al.***, 2022). This constructive approach contradicts standard opportunity perception theories and emphasizes entrepreneurs' need to invent and adapt to dynamic and unpredictable circumstances. According to **Reypens *et al.*** (2021), entrepreneurs generate possibilities by experimenting and reallocating previously unavailable resources, demonstrating their active involvement in changing market dynamics. Creating possibilities is critical for start-ups to survive and grow in a world of limited resources and dynamic market circumstances (**Ferrucci *et al.***, 2021). The potential of startups to generate opportunities is consistent with the Lean Startup Methodology, which stresses hypothesis testing, feedback analysis, and business model optimization. Co-creation with consumers, in which start-ups build goods based on user feedback, is a critical strategy for shaping demand and improving value propositions.

Furthermore, the geographical environment has a significant impact on the creation of possibilities. Strong business ecosystems in developed nations such as North America and Europe offer finance, mentorship, and networking, increasing opportunity creation (**Guerrero *et al.***, 2021). In contrast, entrepreneurs in emerging economies such as China, India, and Brazil often address local issues and develop low-cost solutions by leveraging limited resources via essential innovation. Cultural considerations can impact the creation of possibilities. While individual cultures, like the United States, encourage self-reliance and initiative, collectivist countries like East Asia sometimes depend on social networks to assist entrepreneurs. **Miković *et al.*** (2020) emphasize the importance of social Capital because it is necessary to have access to resources and the creation of possibilities.

Furthermore, technology, such as digital platforms and artificial intelligence, serves as a tool and catalyst for creating possibilities, enabling start-ups to recognize trends and build novel solutions. For example, social media enables startups to connect with a lower-income population, opening new potential for focused marketing and product development. Despite its promise, the creation of opportunities is difficult, particularly in resource-constrained situations. Limited financial resources, a lack of a network, and regulatory impediments might hinder starting attempts (**Guerrero *et al.***, 2021). Start-ups in developing nations may encounter extra constraints, such as a lack of infrastructure and corruption, but these issues also provide opportunities to solve inefficient market processes and make a difference via innovation. According to the study, opportunity creation is associated with startup success, demonstrating a positive association between opportunity creation and performance, particularly market growth and scalability.

As a consequence, the creation of opportunities is a critical component of corporate growth, particularly for start-ups operating in a dynamic market. Entrepreneurs may proactively create opportunities that drive development and distinction by utilizing creativity, technology, and networks (**Williams *et al.***, 2021). Regional and cultural settings are essential in generating possibilities, but problems remain, particularly in resource-limited regions. Finally, the capacity to generate possibilities is vital to a startup's success, making it an important consideration for entrepreneurs and academics.

2.6. Scalability in Start-ups

Scalability is critical for start-ups since it symbolizes their capacity to grow successfully without incurring extra expenditures (**Lange *et al.***, 2023). Start-ups with scalable business models can handle rapid demand development while being profitable and operationally effective. The design of business models, the use of technology, operational efficiency, cost management, and the flexibility of structures to adapt are some factors that impact model scalability. Lower asset models, such as SaaS (software as a service), are naturally more scalable, while firms with more significant investment requirements, such as manufacturing, are less so. Automation and artificial intelligence (AI) allow start-ups to streamline operations and forecast demand growth at a reduced cost (**Kulkov**, 2023). Effective cost structures and adaptable organizational designs further enhance the scalability of start-ups. However, substantial obstacles exist, including a lack of resources, market instability, and cost management. Scalability is encouraged by mature company ecosystems and financial sources in industrialized nations such as North America and Europe, but start-ups in developing markets such as China and India often use inventive, local techniques to address these issues. Sectorial disparities also affect scalability, with technology-based start-ups having a better potential for scalability than conventional companies (**Coviello *et al.***, 2024). Successful scalability needs startups to adopt Lean practices, form strategic alliances, invest in scalable technology, and maintain a customer-centric approach. Scalability ultimately affects how well a business can function in a competitive and dynamic market, making it an important aspect of long-term development.

2.7. Research Framework and Hypotheses

The suggested study paradigm, Dynamic Capabilities Theory (DCT), emphasizes an organization's capacity to adapt, integrate, and restructure its capabilities. So that they can deal with the dynamic and rapidly changing environment (**Murschetz *et al.***, 2020). Concerning startups, social media exhibits essential dynamic capabilities for marketing, e.g., customer relationship products and services and information access that aids startups in understanding possibilities, acquiring resources, and transforming their operations. To preserve a competitive edge. Using social media for marketing enables startups to identify industry trends, acquire user feedback, and adapt their strategy to shifting demand (**Rizvanović *et al.***, 2023). This is consistent with DCT's sensing capability, as startups use real-time data from social media platforms to improve their products, services, and processes.

Similarly, using social media simplifies the process of ongoing customer interaction and feedback for customer relationships and services, allowing start-ups to scale customer-centric products and obtain insights into the relationship's context. This demonstrates the promise of Sizing, in which startups optimize their offers depending on customer involvement to create new forms of innovation. The function of social media in information access is crucial in helping startups access varied market knowledge, competitor activities, and industry advances, hence improving organizational learning and knowledge integration (**Zhang; Zhu**, 2021). It promotes the advancement of DCT sensing and transformation since start-ups use this information to innovate successfully. Innovation is a critical dynamic capability that allows start-ups to transform resources and insights into tangible possibilities. This process integrates internal capabilities with external needs, creating new business prospects while enhancing DCT's transformational nature (**Sherani *et al.***, 2025). The creation of opportunities, in turn, helps start-ups to successfully discover and exploit growth potential, guaranteeing that there is room to grow without succumbing to the demands of over-resourcing without scalability. It highlights the scalability potential inherent in dynamic capabilities, in which flexibility and adaptation are important in promoting sustainable growth. Startups may successfully innovate, generate opportunities, and scale their operations by using social media as a dynamic capability, demonstrating how DCT can assist in comprehending startups' dynamic tactics in a competitive context. Thus, the proposed hypotheses are the following:

H1: Social Media use for marketing has a positive and significant influence on the innovation of startups.
H2: Social Media use for customer relations and service has a positive and significant influence on the innovation of startups.

H3: Social Media use for information accessibility has a positive and significant influence on the innovation of startups.
H4: Innovation has a positive and significant influence on creating opportunities in startups.
H5: The opportunity creation has a positive and significant influence on the scalability of the startups.

Figure 1 illustrates the conceptual framework of the current study, showing the inter-relationship of various communication tools proving as tools of scalability of startups.

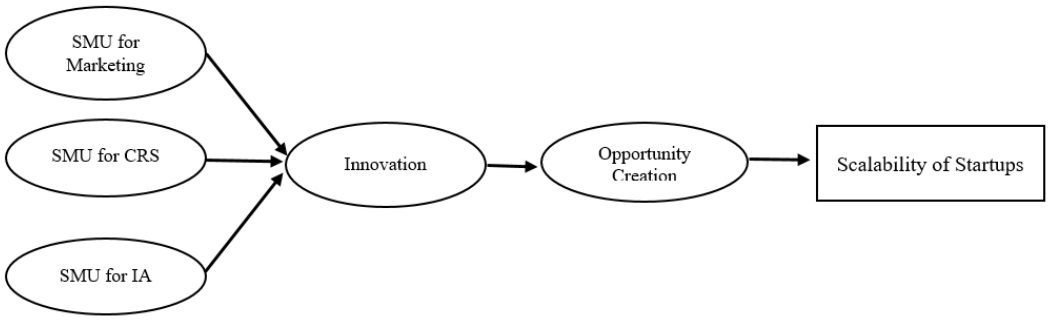

Figure 1: Conceptual Framework: Communication Tools as Scalability.
Note: SMU: Social Media Use; CRS: Customer Relations and Service; IA: Information Accessibility.

3. Methodology

3.1. Participants

To answer the study's research questions, data was gathered from the owners or managers of Chinese startups that were launched between 2021 and the present. Chinese startups were chosen as its population had the fastest growth rate and are recognized as innovative in the startup market. Given these considerations, we considered product- and service-based Chinese startups in this study. The managers and entrepreneurs of these startups were the respondents to the questionnaire. The primary rationale for selecting startups was that numerous studies have been performed on ventures, small and medium-sized businesses, and major corporations, but relatively few have focused on startups. As a result, this research was conducted with startup owners, entrepreneurs, or managers. The study's target audience comprised Chinese entrepreneurs and managers of startups, with a specific focus on those who launched their companies after 2021. The inclusion criteria for participants included: participants must have Chinese nationality; they must have a degree relevant to their start-ups; they should be proficient in English; their Start-ups should be no older than four years; and they must actively engage with social media sites for commercial goals.

3.2. Data Collection and Sampling Procedure

Position sampling technique was used to choose entrepreneurs who had launched start-ups in China during the last one to three years and have a degree linked to their company concept. Several company entrepreneurs were first contacted at their respective sites to compile a list of prospective samples to participate in this study. Through preliminary screening according to the inclusion criteria, 849 startup entrepreneurs were identified. Subsequently, the questionnaire was disseminated online via several media, including QQ, WeChat, and email. The questionnaire included reversal questions to uphold data quality and reduce common method bias. Upon dispatching the questionnaire, a specific reply period was designated. The respondents were assured of confidentially throughout the procedure. Furthermore, each respondent was explained the goals and objectives of this research to enhance awareness of its importance. A total of 413 finalized questionnaires were received, out of which we excluded individuals who failed to reply appropriately to questions. Additionally, a few responses were eliminated that exhibited inconsistency, namely those in which all items or sub-questions were uniformly marked. After these eliminations, the final sample size was 392 respondents, constituting an adequate sample for analysis.

3.3. Measures

This research aims to analyze the impact of various social media communication tools on the scalability of startup enterprises. Antecedent variables have improved scalability, including Social Media Utilization for Marketing, Customer Relations and Services, and Information Accessibility. The mediating variables were Innovation in Startups and Opportunity Creation, with Startup Scalability as the dependent variable. The definitions of these variables and their assessment items were derived from prior research projects. All variables were assessed using a 7-point Likert scale, guaranteeing consistency and dependability. The scale of **Troise *et al.*** (2022) is adapted for social media use for marketing, customer relations and services and information accessibility and innovation. All the constructs used three items, except the customer relations and services, which used five items. The **Park *et al.*** (2017) work is used to measure the opportunity creation with six items, and **Hanifzadeh *et al.*** (2024) work is used for the adaptability of startups with six items. Thus, the total items were 23 in the final version of the questionnaire.

3.4. Data Analysis

A quantitative, cross-sectional study approach was adopted to analyze data, allowing to fully grasp the relationship between variables (**Maier *et al.***, 2023). The partial least square structural equation modeling was employed to analyze the data. The PLS-SEM is one of the dominant techniques in social science research that provides accurate results (**Sarstedt *et al.***, 2014). **Ghasemy *et al.*** (2020) argue that PLS-SEM is one of the leading data analysis techniques in startup settings. The current study examined data into two categories: measurement and structural model suggested (**Hair *et al.***, 2019). The measurement model consisted of factor loadings, composite reliability, and convergent and discriminant validity. At the same time, the structural model consisted of hypothesis testing through a bootstrapping technique of direct and mediation relationships in the hypothesized model.

4. Results and Findings

4.1. Common Method Bias

Common method bias (CMB) is a crucial issue in the primary data that hampers the study results (**Legate *et al.***, 2023). Prior literature indicates two ways to deal with CMB issues: i) qualitative and ii) quantitative. The current study adopted both to eradicate the CMB problem from the data set. For instance, this study first sent a mail to all prospective respondents of the study highlighting the study's aim and scope and assuring the anonymity and security of gathered information (**Akram *et al.***, 2022). In addition, this study employed multiple wave techniques to mitigate straight-line response (**Hoang; Perkmann**, 2023). Likewise, Harman's one-factor test was executed to assess whether a single factor explains variance around 50%. The most significant single factor emerged, explaining (35.92%) variance; hence, no CMB issue was found in this study.

4.2. Measurement Model

Table 1 exhibits the results of the measurement model. Outer item loadings were examined through the factor loadings. It shows that all factor loadings exceed the threshold value of 0.70 (**Hair *et al.***, 2017). Furthermore, internal consistency was assessed through the composite reliability (CR). The results show that all six factors contain a CR value greater than 0.70 (**Hair; Alamer**, 2022). Similarly, convergent validity was measured through average variance extracted (AVE). It shows that all factors have an AVE value greater than 0.50, thus establishing the convergent validity. Moreover, the "value inflation factor" (VIF) technique also ensured multicollinearity. All factors in the hypothesized model unfold value less than 0.30 (**Sabol *et al.***, 2023).

Table 1: Outer loadings, Composite Reliability (CR), and AVE.

Constructs and Items	Outer Loadings	CR	AVE
SMU for Marketing			
Advertise and promote product and services	0.856	0.888	0.725
Create brand visibility	0.850		
Conduct marketing research	0.849		
SMU for Customer Relations and Service (CRS)			
Develop customer relations	0.718	0.875	0.702
Communicate with customers	0.855		
Receive customer feedback on product/services	0.927		
SMU for Information Accessibility (IA)			
Search for general information	0.731	0.896	0.635
Search for competitor information	0.726		
Search for customer information	0.778		
Search for work-related information	0.877		
Search for knowledge from contacts/customers	0.861		
Innovation			
Frequently tries out new ideas	0.825	0.869	0.688
Is often the first to do marketing for new products and services	0.835		
Encourages and stimulates technological, product/service-market and administrative innovation	0.828		
Opportunity Creation			
I am attracted by the idea of breaking away from routine activity	0.771	0.905	0.615
I like to discover new ways of doing things	0.765		
I prefer to find new uses for existing products	0.762		
I am a source of innovative ideas	0.806		
I collect information on totally new products	0.811		
I search for product information involving experimentation and high-risk	0.789		
Scalability of Startups			
The current structure will be responsive to this production volume if the volume triples next year.	0.831	0.919	0.656
The current processes will be responsive to this production volume if the volume triples next year.	0.873		
The company will respond to this production volume if the demand triples next year.	0.887		
The company will not incur unreasonable costs if the demand triples next year.	0.851		
Reevaluating our company's processes for the sudden increase in production will not Cause much cost.	0.728		
Our company can redesign its structures to take advantage of 3 to 4 times more demand at little cost.	0.668		

Table 2 shows the discriminant validity results assessed through the HTMT ratio (**Ringle *et al.***, 2014). It demonstrates that all HTMT values are less than 0.90 (**Ringle *et al.***, 2014). This established that all latent constructs were distinct.

Table 2: Discriminant Validity.

	Innovation	Opportunity Creation	SMU for CRS	SMU for IA	SMU (MKT)	Scalability
Innovation						
Opportunity Creation	0.470					
SMU for CRS	0.428	0.673				
SMU for IA	0.234	0.315	0.333			
SMU (MKT)	0.281	0.498	0.383	0.180		
Scalability	0.205	0.654	0.595	0.161	0.531	

4.3. Structural Model

The bootstrapping technique (subsample=5000) was utilized for hypothesis testing. Table 3 reveals that all empirical results have been substantiated. H1 demonstrates that SMU for marketing positively influences innovation (β = 0.108, p = 0.031). H2 reveals the positive and significant impact of SMU on customer relations and services on innovation (β = 0.311, p = 0.000). Moreover, H3 highlights that SMU for information accessibility positively and significantly correlates with innovation (β = 0.125, p = 0.011). The findings of H4 corroborate the significant and positive impact of innovation on opportunity creation (β = 0.392, p = 0.000). In addition, H5 exhibits a significant and positive relationship between opportunity creation and the scalability of startups (β = 0.583, p = 0.000).

Table 3: Direct Structural Paths.

		Coefficient	SD	T Values	P values
H1	SMU for Marketing -> Innovation	0.108	0.050	2.157	0.031
H2	SMU for Customer Relations and Services -> Innovation	0.311	0.055	5.634	0.000
H3	SMU for Information Accessibility -> Innovation	0.125	0.049	2.558	0.011
H4	Innovation -> Opportunity Creation	0.392	0.053	7.446	0.000
H5	Opportunity Creation -> Scalability of Startups	0.583	0.049	11.902	0.000

Furthermore, the specific indirect results are presented, although they are un-hypothesized. All the specific direct effects are positively significant, except the social media use for marketing is not significant for the two paths, as shown in Table 4.

Table 4: Specific indirect effects

	Coefficient	STDEV	T Values	P values
• SMU for Marketing -> Innovation -> Opportunity Creation	0.042	0.022	1.956	0.051
• SMU for Marketing -> Innovation -> Opportunity Creation -> Scalability of Startups	0.025	0.013	1.840	0.066
• SMU for Customer Relations and Services -> Innovation -> Opportunity Creation -> Scalability of Startups	0.071	0.020	3.548	0.000
• SMU for Customer Relations and Services -> Innovation -> Opportunity Creation	0.122	0.032	3.867	0.000
• SMU for Information Accessibility -> Innovation -> Opportunity Creation -> Scalability of Startups	0.029	0.012	2.362	0.018
• SMU for Information Accessibility -> Innovation -> Opportunity Creation	0.049	0.020	2.415	0.016
• Innovation -> Opportunity Creation -> Scalability of Startups	0.229	0.038	6.040	0.000

4.4. Coefficient of Determination and Effect Size

"Coefficient of determination" (R^2) measures the "variation in the endogenous latent construct explained by all exogenous constructs included in the hypothesized model" (**Shmueli; Koppius**, 2011). It ranges from substantial (0.75), moderate (0.50), and low (0.25) respectively in Table 5. The R^2 for the current study is considered to be low, as shown in Table 5 (innovation=0.171, opportunity creation=0.154, scalability of startup=0.34) as it illustrates that 17% for innovation and 15.4% for opportunity creation and 34% for scalability of startups variations respectively due to the exogenous variables included in the hypothesized model which is well acceptable in the startups settings (**Akram *et al.***, 2022).

Table 5: Coefficient of Determination.

	R-square	R-square adjusted
Innovation	0.171	0.164
Opportunity Creation	0.154	0.152
Scalability of Startups	0.340	0.338

Similarly, f^2 represents the significance of the effect size of each predictor (**Hair *et al.***, 2019). Likewise, Table 6 also depicts the effect size (f^2) for all exogenous constructs in the hypothesized model. All latent constructs show small to large f^2 depicting ranges from 0.002 to 0.452 for all exogenous constructs. All the constructs achieved the minimum threshold.

Table 6: Effect Size

	Innovation	Opportunity Creation	SMU for CRs	SMU for IA	SMU (MKT)	Scalability
Innovation		0.18				
Opportunity Creation						0.451
SMU for CRS	0.10					
SMU for IA	0.02					
SMU (Mkt)	0.01					
Scalability						

5. Discussion

The study's findings shed light on the relationship between the use of social media and the development of startups. The positive and substantial influence on creating innovation opportunities (coefficient = 0.392, p = 0.000) demonstrates that innovation is a key driver for identifying new business prospects, as documented in earlier studies (**Muninger *et al.***, 2022). Innovation enables start-ups to adapt and uncover new market demands, generating possibilities that drive their development. This finding is consistent with the Dynamic Capabilities Theory, which states that the capacity to innovate allows businesses to capitalize on new possibilities. Teese (2007). The substantial positive link between opportunity creation and start-up scalability (coefficient = 0.583, p = 0.000) demonstrates how critical it is for start-ups to identify and capitalize on new chances. **Coviello *et al.*** (2024) supported the work by saying that recognizing opportunities is crucial for a startup's scalability. Furthermore, according to **Breit and Volkmann** (2024), start-ups' capacity to navigate possibilities is related to their ability to prosper in a dynamic environment. As a result, start-ups that excel in seizing opportunities are more likely to achieve scalability.

The study also found out that using social media for customer relations and services (SMU for CRS) considerably (Coefficient = 0.311; p = 0.000) boosts innovation (**Troise *et al.***, 2022). This finding is consistent with **Perez-Vega *et al.*** (2021) study, which found that social media enables businesses to interact with customers, solicit input, and use that feedback to generate new ideas. By keeping active customer relationships, startups are better equipped to develop and adapt to customer wants, which is critical to long-term success. Similarly, **Zhang *et al.*** (2020) proposed that social media platforms give a wealth of user information that enables businesses to develop and remain competitive.

The relationship between the use of social media to get information and innovation is modest, yet it is significant. This finding is congruent with the study of **Pakura and Rudeloff** (2023), who noted that social media enhances the flow of information, which is critical for startups to keep current on market trends and rival activity. Access to relevant information helps the decision-making process and encourages innovation, albeit the influence may be less noticeable than other social media-related aspects like marketing or customer relationships. The use of social media for marketing (SMU for Marketing) positively influences innovation (coefficient = 0.108, p = 0.031). This outcome underscores the notion that social media marketing is more than product promotion. However, collecting user input and generating ideas that may drive innovation is equally important. **Rizvanović *et al.*** (2023) observed that start-ups may use social media marketing to communicate with consumers, learn about their preferences, and produce novel goods or services that fulfill market demands.

The data also demonstrate how social media use indirectly influences scalability via innovation and the creation of possibilities. SMU for CRS, in particular, fosters innovation, which leads to the creation of possibilities. (Coefficient = 0.103; p = 0.000). This is an indirect impact of a study by **Olivieri and Testa** (2024), which concluded that user participation on social media is essential in encouraging innovation and discovering market possibilities. This path demonstrates how start-ups may use customer interactions to innovate and uncover growth-oriented business prospects. Furthermore, the path from innovation to opportunity creation and ultimately to scalability (coefficient = 0.229, p = 0.000) supports the notion that innovation and opportunity identification are critical in encouraging scalability. According to **Böttcher *et al.*** (2022), innovation permits start-ups to identify new possibilities necessary to scale their operations. This mediating impact demonstrates the importance of innovation for start-ups in creating the possibilities needed for long-term success. The indirect path from SMU for information accessibility to innovation, then opportunity creation, and ultimately startups (coefficient = 0.027, p = 0.014) highlights the importance of access to information via social media in fueling the rise of startups. Similarly, **Henry *et al.*** (2024) argue that start-ups with access to essential information via social media are more likely to innovate and generate chances, leading to increased scalability. Although the influence is minimal compared to other channels, it significantly contributes to the development process of start-ups.

6. Conclusion, Limitations and Future Directions

This study' made evident that the crucial function of social media in assisting startups to innovate, generate possibilities, and boost scalability. This study examines the direct and indirect effects of social media use, demonstrating how digital tools might influence the development of new firms. Future studies might look into the contextual aspects that create these interactions, especially across diverse business ecosystems, to better understand the advantages of sustainable growth via social media for start-ups. Despite the utility of the study’s findings, certain limitations were observed. First, this study was cross-sectional research, which might be improved in the future by gathering longitudinal data. Second, the study may be strengthened by including qualitative research. Third, the current study employed pre-sensational antecedent variables to assess the scalability of Chinese start-ups. In future, this may be improved by enhancing scalability. Fourth, this study used the analysis approach, which may be addressed using alternate analytic techniques to supplement the research. Finally, the research discussed several mediation mechanisms, including appraisal and opportunity creation. The index path may be postulated and explored in the future, along with numerous mediation and moderation studies.

6.1. Fund Projects

Henan Provincial Department of Education's 2022 Special Integration Characteristic Demonstration Course "Comprehensive Training in Preschool Education Major"; The 2024 Henan Province Higher Education Teaching Reform

Research and Practice Project "A Study on the Causes and Solutions of the 'Slow Employment' Phenomenon Among College Graduates from the Perspective of Field Theory" (Project No.: 2024SJGLX1106).

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