How Does Digital Finance Affect Entrepreneurial Performance? Evidence from Chinese Enterprises

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Abstract

This article aimed to study (1) how digital finance serves as a catalyst for new ventures and small and micro-enterprises to identify entrepreneurial opportunities and how it alleviates financing constraints, providing solutions to overcome challenges related to the accessibility and affordability of finance for these businesses; (2) the impact of digital finance on improving entrepreneurial performance; and (3) the bridging role of identifying entrepreneurial opportunities and easing financing constraints through digital finance between digital finance and entrepreneurial success and how they mediate this relationship. The sample consisted of 1,197 entities. They were selected by conducting a questionnaire survey. The instrument for collecting data was the questionnaire survey. Data analysis was conducted using descriptive statistics and structural equation modeling for a thorough empirical analysis. The research results were found as follows: Digital finance acts as a positive force in identifying entrepreneurial opportunities and reducing financing constraints, which, in turn, favorably affects entrepreneurial performance. The identification of entrepreneurial opportunities and the easing of financing constraints not only bridge the gap between digital finance and entrepreneurial success but also mediate this relationship, emphasizing their pivotal roles. This article contributes to both academic and practical fields by deeply examining how digital finance can impact the process of identifying entrepreneurial opportunities and managing financing constraints, thereby enriching our understanding of how these aspects are interconnected with the overall performance of entrepreneurs. Through this study, we gain insights into the potential of digital finance in reshaping the entrepreneurship

landscape, offering a roadmap for future research and policy development aimed at fostering an environment conducive to entrepreneurial growth and innovation.

Keywords: Digital Finance; Entrepreneurial Performance; Entrepreneurial Opportunity Identification; Financing Constraints; Small and Micro Enterprises

Introduction

In recent years, China has emerged as a global leader in the development of digital finance, with has introduced both opportunities and systemic risks to the financial ecosystem (Zhang et al., 2023). By blending traditional finance mechanisms with digital technologies, digital finance has expanded in financial industry's profit avenues and transformed service delivery to previously underserved segments, particularly small customer groups. This transformation has enabled businesses to access novel financial services, thereby contributing significantly to the sector's growth (Gomber et al., 2017; Lin & Ma, 2022). The Chinese market, characterized by its diversity, features a mix of perfectly competitive and monopolistic competition markets (Dai & Guo, 2020). However, in such an environment, small-scale enterprises and those with lesser technological capabilities face challenges in improving their internal operations and seizing competitive opportunities. These entities often require scale expansion to further their development, yet they are hindered by the traditional finance sector's enduring problems of access and the high costs of financing, particularly affecting new ventures and small and micro-enterprises (Gray et al., 2019; Wang & Wang, 2023).

There is a noticeable gap in research focusing on leveraging digital finance to facilitate entrepreneurial opportunities for new ventures and small and micro-enterprises and to alleviate financing constraints (Liu et al., 2022; Yao & Yang, 2022). Digital platforms, known for their openness and self-growth features, significantly reduce the barriers to entry for entrepreneurship by lowering learning costs and easing access to resources (Wu et al., 2023). The platforms' open governance models support the formation of diverse and dynamic entrepreneurial teams (Cenamor et al., 2019), fostering a fertile ground for digital entrepreneurship. This new form of entrepreneurship harnesses the potential of big data analytics, social media, cloud computing, and intelligent manufacturing, effectively integrating opportunities from these domains (Hsieh & Wu, 2019). The role of digital technology in lowering entry barriers is further supported by the idea that entrepreneurial opportunity identification is a subjective process shaped by information availability, cognitive characteristics, and the judgment abilities of entrepreneurs, as well as

external conditions like market environment (Lundberg & Rehnfors, 2018; Kusa et al., 2021). Recognizing entrepreneurial opportunities, thereby, has been highlighted as a critical factor influencing the success of entrepreneurial teams (Chang & Chen, 2020), emphasizing the importance of deepened entrepreneurial cognition in the early stages of business development (Reuber et al., 2018).

Despite the critical role of new ventures and small and micro-enterprises in China's economic progress (He et al., 2019). they continue to grapple with significant financing challenges. These challenges persist, notwithstanding governmental efforts to alleviate financing difficulties through policy and commercial bank incentives (Jin et al., 2022). The intricate relationship between these enterprises and financial institutions is further complicated by information asymmetry, especially during economic downturns, which weakens the risk resilience of these enterprises and prompts banks to impose stricter financing conditions (Lee et al., 2023; Dong et al., 2020). Consequently, the financing constraints for new ventures and small and micro-enterprises have intensified (Chen & Yoon, 2022), making the exploration of strategies to mitigate these constraints a priority for sustaining growth and innovation in China's evolving digital financial landscape.

In summary, while the evolution of digital finance is well charted, its specific impacts on small-scale and technologically nascent enterprises require deeper investigation. Secondly, the role of digital platforms in enhancing entrepreneurial opportunity identification remains underexplored, particularly in how it influences diverse and dynamic entrepreneurial team formation. Lastly, the literature reveals a substantial gap in strategies to alleviate the financing challenges faced by new ventures and small and micro-enterprises, a critical issue for sustaining economic growth and innovation. This study aims to address these gaps by providing a nuanced understanding of how digital finance can facilitate entrepreneurial opportunity identification and alleviate financing constraints, thereby contributing to the broader discourse on entrepreneurship and economic development in China.

Literature Review

Digital Finance and Entrepreneurial Performance

Digital finance, leveraging technologies such as big data, cloud computing, and blockchain, addresses the information asymmetry issues inherent in traditional finance, offering enterprises a broader range of financing options (Hasan et al., 2020). While traditional finance emphasizes

"hard information" based on collateral, mortgage, and guarantees, digital finance focuses on "soft information" such as transaction volume and cash flow (Xun et al., 2020). Through big data analysis, it calculates the risk coefficient of projects, effectively reducing pre-loan information asymmetry (Chen et al., 2021). Internet platforms utilize big data technology to collect enterprise transaction and social data, construct diverse data models, achieve dynamic tracking of loans, reduce moral hazards, and enhance the controllability of lending capital (Rana et al., 2020).

The development of digital finance provides new financing avenues for enterprises (Niemand et al., 2021), lowering costs, increasing efficiency, and positively impacting entrepreneurial performance (Kohtamäki et al., 2020). The rise of digital finance not only transforms the supply side of financing but also fosters the overall development of the national economy (Haudi et al., 2022). Based on these observations, this study proposes the following hypothesis:

H1: Digital finance positively influences the entrepreneurial performance of small and micro-enterprises in China.

Digital Finance and Entrepreneurial Opportunity Identification

Traditional financial services have limitations in supporting enterprise innovation and entrepreneurship, constraining societal entrepreneurial activities (Aghion et al., 2013). The rise of digital finance in China, driven by advancements in digital technology and a lenient regulatory environment, has provided new financing channels for enterprises (Yin et al., 2019). By deeply integrating digital technology and financial services, digital finance fills the funding and technical support needs inherent in entrepreneurship, possessing inherent advantages (Wang & Wang, 2023).

Entrepreneurs, utilizing digital finance technology and platforms, gain real-time market information, enabling more accurate identification of entrepreneurial opportunities (Aisaiti et al., 2019). The rapid development of digital finance propels the emergence of new business models and entrepreneurial opportunities, lowering market entry barriers (Gomber et al., 2017). The application of big data technology in digital finance provides entrepreneurs with precise credit risk assessments, addressing the issue of insufficient information during financing approvals for new ventures and small and micro-enterprises (Li, 2022). Emerging digital finance models such as peer-to-peer lending and supply chain finance help enterprises compensate for the lack of credit information, overcoming the entrepreneurial barriers posed by financial constraints (Aisaiti et al.,

2019; Aghion et al., 2013). Based on these observations, this study proposes the following hypothesis:

H2: Digital finance positively influences the entrepreneurial opportunity identification of small and micro-enterprises in China.

Entrepreneurial Opportunity Identification and Entrepreneurial Performance

A rational entrepreneurial opportunity identification model aids organizations in discovering new opportunities. Through continuous searching, evaluation, and development of relevant technologies and markets, the opportunity becomes more complete, the market clearer, uncertainty decreases, and entrepreneurial performance improves (Chen et al., 2019). There is a positive correlation between entrepreneurial opportunities and performance. Emphasizing the discovery of new target means, this relationship can be optimized through resource recombination to create more benefits (Ahmetoglu et al., 2011). Opportunities include introducing innovative products, services, or processes, and planning can reduce the risk of failure (Reuber et al., 2018).

Pre-planning is more favorable for entrepreneurs than learning from mistakes, and recognizing the importance of a business plan is crucial (Theodoraki et al., 2018). Entrepreneurial opportunity identification enables entrepreneurs to better understand market demands. Matching these demands can increase sales and market share, thereby improving performance (Gray et al., 2019). There is a positive correlation between entrepreneurial intention and information exposure. The stronger the ability in entrepreneurial opportunity identification, the higher the performance (Monferrer et al., 2021). Based on these observations, this study proposes the following hypothesis:

H3: Entrepreneurial opportunity identification positively influences the entrepreneurial performance of small and micro-enterprises in China.

Mediating Role of Entrepreneurial Opportunity Identification

A rational entrepreneurial opportunity identification model encompasses the two levels of organizational ecology and evolutionary economics, with the primary question being why change is challenging (Sigfusson & Chetty, 2013). Investments by organizations in ecosystems lead to inertia, and efficient low-cost factors in evolutionary economics make businesses inclined toward daily affairs, forming inertia (Hannan & Freeman, 1984). Entrepreneurs with strong entrepreneurial opportunity identification abilities can overcome organizational inertia, actively seeking market opportunities, which is especially crucial for new ventures and small and micro-enterprises in the digital transformation (Gray et al., 2019).

Digital finance facilitates the entrepreneurial opportunity identification process by providing information and resource support (Fichman et al., 2014). Entrepreneurs, through digital finance platforms, acquire market data and information, enhancing the accuracy and quality of entrepreneurial opportunities and driving entrepreneurial performance (Luo et al., 2021). The development of digital finance technology provides entrepreneurs with new directions for innovation, strengthening the competitiveness of entrepreneurial enterprises in the market (Li, 2022). The openness and convenience of digital finance enhance the conduct of societal entrepreneurial activities, effectively compensating for the lack of information required during financing approvals (Aisaiti et al., 2019). This addresses the entrepreneurial barriers posed by financial constraints, allowing entrepreneurs to focus more on entrepreneurial opportunity identification. Based on these observations, this study proposes the following hypothesis:

H4: Entrepreneurial opportunity identification plays a mediating role between digital finance and entrepreneurial performance.

Digital Finance and Financing Constraints

New ventures and small and micro-enterprises, although relatively smaller in scale and weaker in funds, possess the advantages of rapid response and market seizing (Xu et al., 2020). They are influenced by macroeconomic regulation and industry cycles, facing challenges such as financing difficulties during events like the 2020 pandemic. Specialized financial services such as "micro-business loans" and government support promote financing, enhancing the survival rate of enterprises (Lin & Ma, 2022). The digital economy and digital finance reduce financing constraints for enterprises, improving financial and innovative efficiency (Liu et al., 2022). The promotion effect of digital finance on technological innovation is particularly significant, especially in high-tech industries and non-state-owned small and micro-enterprises (Zhang et al., 2023). In regions with high institutional environmental quality, digital finance has a more significant promoting effect on technological innovation (Chen & Yoon, 2022).

Digital finance enhances the convenience of financial services, reduces financing constraints, and promotes technological innovation for new ventures and small and micro-enterprises (Jin et al., 2022). Based on these observations, this study proposes the following hypothesis:

H5: Digital finance negatively influences the financing constraints of small and micro-enterprises in China.

Financing Constraints and Entrepreneurial Performance

Credit risk mainly includes insufficient pre-loan risk identification and a lack of post-loan monitoring (Liu et al., 2021). Information asymmetry causes commercial banks to struggle in accurately assessing enterprise risks before loan issuance, leading to inefficient loans to high-risk small and micro-enterprises (Amin et al., 2019). After the loan, banks may neglect supervising the use of funds by enterprises, resulting in losses and defaults, making subsequent financing more challenging. This exacerbates financing constraints for new ventures and small and micro-enterprises (Chen & Yoon, 2022).

Chinese commercial banks primarily expand their asset base as a major profit strategy, but information asymmetry leads to agency problems, increasing financing costs and structural differences, intensifying enterprise financing constraints (Khan et al., 2018). Banks tend to establish long-term relationships with high-quality loan clients, achieving long-term profit maximization by reducing interest rates and other means (Huy et al., 2021). Based on these observations, this study proposes the following hypothesis:

H6: Financing constraints negatively influence the entrepreneurial performance of small and micro-enterprises in China.

Mediating Role of Financing Constraints

Financing constraints refer to the limitations that enterprises face during financing, stemming from information asymmetry and agency problems (Khan et al., 2018). New ventures and small and micro-enterprises are affected due to inadequate financial systems and information, and traditional financial support is limited (Li, 2022). Digital finance, through convenient loan methods, streamlined processes, and the development of offline business chains, reduces information asymmetry, thus lowering financing constraints (Acharya & Xu, 2017). Developed financial systems and the increased level of financial development in China can alleviate enterprise financing constraints, with digital finance driving innovation and entrepreneurship, thereby mitigating financing constraints (Hubbard & Petersen, 2020).

Enterprises alleviate financing constraints through internal cash flows, and digital finance provides fast and low-cost financing, reducing the degree of financing constraints (Zhang et al., 2019). Financial deepening promotes research and development innovation in high-tech enterprises, reducing financing constraints and enhancing enterprise performance (Nikolov et al., 2021). Based on these observations, this study proposes the following hypothesis:

H7: Financing constraints play a mediating role between digital finance and entrepreneurial performance.

Research Model

Based on the aforementioned research hypotheses, this paper proposes the research model illustrated in Figure 1.
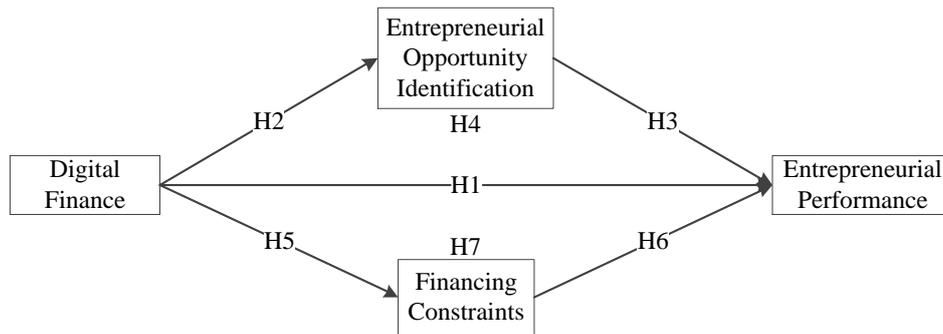

Figure 1. Research Model

Methodology

Research Design

Startups and small and micro-enterprises hold a significant position in the Chinese economy, collectively accounting for over one-third of the national economic output. Specifically, they constitute over 98% of industrial enterprises, contribute to more than two-thirds of industrial employment, represent over one-third of industrial economic output, contribute to over one-third of industrial profits, and account for more than one-fifth of industrial technological innovation. As of the end of 2021, the total registered market entities nationwide exceeded 154 million, including 48.42 million enterprises and 103 million individual businesses. Notably, 99% of enterprises fall under the category of small and micro-enterprises with an annual turnover of less than 20 million RMB. In recent years, China has intensified its support for startups, with over 90% of new businesses established during the 14th Five-Year Plan period (2021-2025), totaling nearly 37 million businesses, benefiting from financial and fiscal policies.

This study employed a stratified random sampling method. According to the official records from the National Small and Medium-sized Enterprise Development Fund's affiliated enterprise credit reporting agency (Tianyancha), in terms of regional distribution, 46.5% of startups and small and micro-enterprises are concentrated in the East China region, followed by 14.6% in the South

China region, 10.8% in the North China region, and the lowest percentage, 4.3%, in the Northwest region. Particularly, the East China region, including Shanghai, Jiangsu, Zhejiang, Anhui, Fujian, and Shandong, provides a conducive economic environment for the development of startups and small and micro-enterprises, with vibrant individual economies and rapid growth rates. Therefore, this study primarily investigates startups and small and micro-enterprises in the East China region, focusing on Shanghai, Jiangsu, Zhejiang, Anhui, Fujian, and Shandong.

A total of 1,875 survey questionnaires were distributed, with 1,288 collected, resulting in a response rate of 68.69%. After excluding invalid questionnaires with consistent or patterned responses, 1,197 valid questionnaires were obtained, achieving an effective response rate of 92.93%. Kline (2023) suggests that smaller samples may lead to estimation issues and biases, especially in complex models. For SEM employing maximum likelihood estimation methods, the ideal sample size should be at least 200. Larger samples, such as 300 or more, can enhance the accuracy of estimates and sensitivity to model misfit. Therefore, the number of survey samples in this study meets the requirements for sample size in structural equation modeling.

The surveyed startups and small and micro-enterprises are mainly concentrated in the range of 11–200 employees, with 18.9% having 11–20 employees, 18.4% having 21–50 employees, 18.4% having 51–100 employees, and 32.4% having 101–200 employees. In terms of industry distribution, they are predominantly in other industries (9.9%), transportation (9.5%), manufacturing (8.8%), home appliance repair (8.5%), business consulting (8.5%), education services (8.4%), and scientific and technical services (8.2%). The majority have been established within the last five years, reflecting a distribution pattern consistent from 2018 to 2022. The distribution of registered capital is relatively even across different ranges.

Measurement

In this study, we selected and adapted several measurement scales from existing literature reviews to assess the concepts in our proposed model. These scales have been utilized and validated in previous research. The final questionnaire covers aspects such as digital finance, entrepreneurial performance, entrepreneurial opportunity identification, and financing constraints. To measure digital finance, we employed a scale with three items proposed by Aisaiti et al. (2019). To assess entrepreneurial performance, we used a scale with eight items from Cooper and Artz (1995). For evaluating entrepreneurial opportunity identification, an eight-item scale from Ahmetoglu et al. (2011) was employed. To measure financing constraints, an eight-item scale from

Fazzari et al. (1988) was used. To collect responses, a seven-point Likert scale was employed, where 1 indicates "strongly disagree" and 7 indicates "strongly agree".

Research Results

Common Method Variance

Common method bias is a common issue in survey research in the fields of management and psychology. It can arise from factors such as consistent data sources or raters, similar measurement environments, and questionnaire measurement designs. In this study, the use of a single questionnaire to collect and analyze data from the same group of participants introduces the possibility of common method variance, posing a potential threat to internal validity (Podsakoff et al., 2003). To address this concern, a single-factor model was employed to test the severity of the threat posed by common method bias. Validation factor analysis conducted using Mplus software revealed that the fit of the single-factor model to the data (χ^2/df=31.925, CFI=0.293, TLI=0.269, RMSEA=0.161, SRMR=0.177) was significantly worse than that of the measurement model to the data (χ^2/df= 1.556, CFI=0.988, TLI=0.987, RMSEA=0.022, SRMR=0.018). This suggests that the threat of common method bias in the data collected for this study is not severe (Podsakoff et al., 2003).

Correlation Analysis

Correlation analysis is an important method used to examine the correlation and degree of association between variables. In this study, to further elucidate the causal relationships between variables, the Pearson correlation analysis method was employed to analyze the relationships among various variables. Table 1 presents the results of this analysis. A moderate positive correlation exists between digital finance and entrepreneurial opportunity identification (r=.391), indicating that an increase in digital finance is associated with enhanced ability among entrepreneurs to identify opportunities. There is also a moderate negative correlation between digital finance and financing constraints (r=-.420), suggesting that improvements in digital finance could lead to a reduction in the financing constraints faced by entrepreneurs. Furthermore, a moderate positive correlation is observed between digital finance and entrepreneurial performance (r=.384), implying that advancements in digital finance may foster an improvement in entrepreneurial performance. A strong negative correlation is found between entrepreneurial opportunity identification and financing constraints (r=-.509), indicating that entrepreneurs who are better at identifying opportunities may face fewer financing constraints. Moreover, there is a

moderate to strong positive correlation between entrepreneurial opportunity identification and entrepreneurial performance (r=.452), suggesting that superior opportunity identification skills could lead to better entrepreneurial performance. Lastly, a moderate to strong negative correlation exists between financing constraints and entrepreneurial performance (r=−.460), implying that a reduction in financing constraints could be beneficial for enhancing entrepreneurial performance.

Generally, if the Pearson correlation coefficient between variables is greater than 0.8 or less than −0.8, this may indicate a problem of collinearity (Dormann et al., 2013). In Table 1, none of the correlation coefficients are greater than 0.8 or less than −0.8, thus indicating that there is no issue of collinearity.

Table 1. Correlations between constructs

Variables	DF	EOI	FC	EP
DF	1			
EOI	.391**	1		
FC	−.420**	−.509**	1	
EP	.384**	.452**	−.460**	1

Note: **$p<0.01$; Note: DF (Digital Finance), EP (Entrepreneurial Performance), EOI (Entrepreneurial Opportunity Identification), FC (Financing Constraints)

Structural Model

This study employed the CBSEM (Covariance–Based Structural Equation Modeling) method for hypothesis testing, utilizing MPLUS 8.3 as the tool. The evaluation criteria, based on the recommendations by Hair et al. (1998), include $\chi^2/df \leq 3$; TLI ≥ 0.90; CFI ≥ 0.90; RMSEA ≤ 0.08; SRMR ≤ 0.08, indicating a good fit between the data and the measurement model.

The research established an intermediary model, as shown in Figure 2, with digital finance as the independent variable, entrepreneurial performance as the dependent variable, and enterprise financing constraints and entrepreneurial opportunity identification as mediators. The fit indices for the model, χ = 1683.805, χ^2/df = 2.426, CFI = 0.979, TLI = 0.977, RMSEA = 0.035, SRMR = 0.068, met the evaluation criteria suggested by Hair et al. (1998), indicating a good fit for the hypothesized model. The model presents three R^2 values: 0.213, 0.244, and 0.354, the model demonstrates a modest level of explanatory power. While these values indicate that the model can account for a certain proportion of variance in the dependent variables, they also highlight substantial room for improvement in terms of predictive accuracy. The R^2 values suggest

that a significant portion of the variance in the dependent variables remains unexplained by the current model. This implies that there are other influential factors or variables that have not been included in the model. To enhance the model's explanatory power, future research should consider including additional variables that are theoretically and empirically justified as relevant predictors of the dependent variables. Employing more sophisticated statistical or machine learning techniques might help in capturing the complexity of the data better. Techniques such as random forests, gradient boosting machines, or structural equation modeling could offer more nuanced understandings and predictions.

Regression coefficients indicate that digital finance positively predicts entrepreneurial performance (β = 0.188, t = 5.057, p < 0.001, CI = [0.115, 0.261]), supporting Hypothesis 1. Digital finance positively predicts entrepreneurial opportunity identification (β = 0.461, t = 15.267, p < 0.001, CI = [0.401, 0.520]), supporting Hypothesis 2. Entrepreneurial opportunity identification positively predicts entrepreneurial performance (β = 0.261, t = 7.529, p < 0.001, CI = [0.194, 0.330]), supporting Hypothesis 3. Digital finance negatively predicts enterprise financing constraints (β = –0.494, t = –18.009, p < 0.001, CI = [–0.548, –0.441]), supporting Hypothesis 5. Enterprise financing constraints negatively predict entrepreneurial performance (β = –0.273, t = –7.871, p < 0.001, CI = [–0.340, –0.204]), supporting Hypothesis 6.
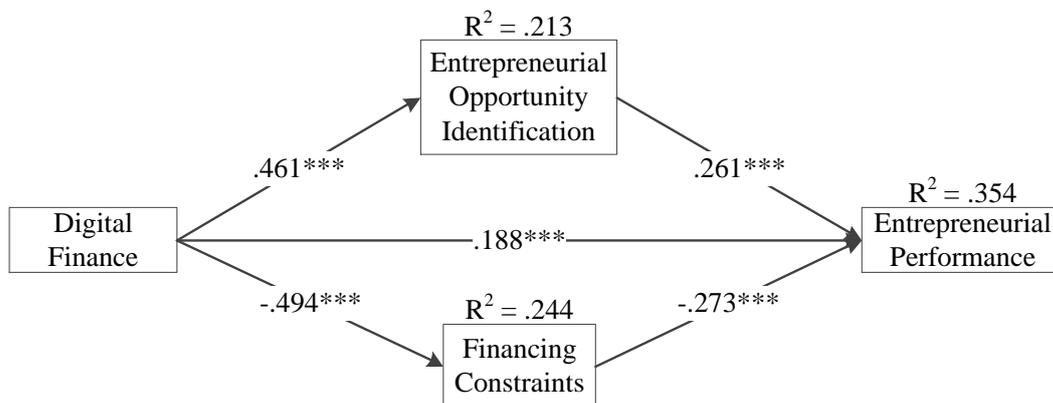

Figure 2 Results of structural model

The Bootstrap method, a commonly used and robust approach in academic research (Mooney et al., 1993), was employed in this study. The mediation effects proposed in this research were tested through 5000 repetitions of random sampling, calculating a 95% confidence interval. If the confidence interval does not include zero, the mediation effect is considered

significant, supporting the hypothesis of mediation. Conversely, if it includes zero, the mediation effect is considered non-significant, not supporting the hypothesis of mediation.

Indirect effects, obtained by multiplying the results of two or more path regressions, were subjected to bootstrap sampling for verification of the presence of mediation effects. As shown in Table 2, entrepreneurial opportunity identification exhibits a significant mediating effect between digital finance and entrepreneurial performance, with an effect value of 0.120, $t = 6.713$, $p < 0.05$, CI = [0.088, 0.158], supporting Hypothesis 4. Enterprise financing constraints also demonstrate a significant mediating effect between digital finance and entrepreneurial performance, with an effect value of 0.135, $t = 7.566$, $p < 0.05$, CI = [0.102, 0.171], supporting Hypothesis 7.

Table 2 Indirect effect analysis

Type of Effect	Standardized Coefficient	S.E.	t	p	Boots LLCI	Boots ULCI
Total Effect	0.444	0.034	13.129	0.000	0.375	0.510
Total Indirect Effect	0.255	0.022	11.444	0.000	0.212	0.299
DF→EOI→EP	0.120	0.018	6.713	0.000	0.088	0.158
DF→FC→EP	0.135	0.018	7.566	0.000	0.102	0.171
Direct Effect	0.188	0.037	5.057	0.000	0.115	0.261

Note: DF (Digital Finance), EP (Entrepreneurial Performance), EOI (Entrepreneurial Opportunity Identification), FC (Financing Constraints)

Discussions

This research confirms digital finance's positive impact on entrepreneurial performance, particularly by mitigating informational asymmetry and providing SMEs with varied and accessible financing options in China's evolving digital economy. Additionally, it enhances entrepreneurial opportunity identification, allowing entrepreneurs to leverage real-time data for seizing opportunities crucial for growth in a dynamic market. The study also illustrates the mediating roles of opportunity identification and financing constraints, showing that digital finance not only facilitates access to capital but also improves the informational environment and reduces barriers to finance, thus bolstering SMEs' performance and innovation capacity.

Theoretical Implications

The relationship between digital finance and entrepreneurial performance is a current focal point in economic research (Kohtamäki et al., 2020). Through empirical analysis, this paper proposes a mechanism demonstrating the positive impact of digital finance on entrepreneurial performance and unveils key contributing factors. Firstly, digital finance provides entrepreneurs with more convenient financing options and payment methods, thereby reducing the difficulties and costs associated with financing (Niemand et al., 2021). Secondly, the application of digital financial technology lowers operational costs for businesses, including payments, cross-border transactions, and labor costs, consequently enhancing profitability (Rana et al., 2020). Simultaneously, digital financial tools play a constructive role in entrepreneurial opportunity identification (Aisaiti et al., 2019), by offering more effective communication, risk management, and financing channels, thereby reducing entrepreneurial risks and improving success rates. The positive impact of entrepreneurial opportunity identification on entrepreneurial performance lies in providing entrepreneurs with superior business opportunity choices, enabling startups to stand out in fierce market competition (Ahmetoglu et al., 2011).

The innovative aspect of this paper lies in uncovering the mediating role of entrepreneurial opportunity identification in the relationship between digital finance and entrepreneurial performance. Digital finance, through digitization, provides market information and data analysis, assisting entrepreneurs in better understanding market demand and facilitating improved identification of entrepreneurial opportunities (Luo et al., 2021). Furthermore, digital finance, through resource integration and promoting collaborative development, enhances overall efficiency and innovation capabilities of entrepreneurial enterprises, indirectly leading to improved entrepreneurial performance (Gray et al., 2019).

However, the paper also reveals the impact of digital finance on corporate financing constraints, indicating that digital finance is not universally advantageous for all enterprises. Due to the issue of information asymmetry in new and small-medium enterprises, digital financial services face challenges in resolving financing constraints (Liu et al., 2022). These services may encounter problems of insufficient and inaccurate information, resulting in biased credit assessments for enterprises and limiting the ability of new and small-medium enterprises to obtain sufficient financing support (Amin et al., 2019).

Practical Implications

The positive impact of digital finance on entrepreneurial performance is evident in several aspects. Firstly, digital finance provides more convenient financing options and payment methods (Hasan et al., 2020), reducing the difficulty and cost of financing for entrepreneurs. This enables entrepreneurs to quickly raise funds, meet operational and developmental needs, accelerate the entrepreneurial process, and enhance entrepreneurial performance (Lin & Ma, 2022). Secondly, the application of digital financial technology reduces the operational costs of businesses (Niemand et al., 2021), including payment costs, cross-border transaction costs, and labor costs. This allows entrepreneurs to operate their businesses more efficiently, increase profitability, and consequently improve entrepreneurial performance.

Entrepreneurial opportunity identification, as a positive outcome of digital finance, also has a tangible impact on entrepreneurial performance. Digital finance, by providing more effective communication, risk management, and financing channels, helps entrepreneurs identify and seize business opportunities more effectively. This reduces entrepreneurial risks, improves success rates, and drives the enhancement of entrepreneurial performance (Li, 2022). Entrepreneurs, through digital financial tools, gain access to substantial market information and data analysis, aiding in better understanding market demand and trends. This improves the ability to identify business opportunities and supports the selection of business models with greater market potential and sustainability.

However, the negative impact of digital finance on corporate financing constraints is also a practical concern. Due to their small scale and lower information disclosure levels, new and small-medium enterprises face significant financing uncertainties (Jin et al., 2022). The limitations of digital financial services in addressing this issue arise from the dependence on comprehensive information, making it challenging for these enterprises to obtain sufficient financing amounts (Aghion et al., 2013). Additionally, the requirements of the credit assessment system in digital finance platforms increase the difficulty for new and small-medium enterprises to obtain financing, possibly leading to higher service fees and an increase in corporate financing costs.

The negative impact of corporate financing constraints on entrepreneurial performance is primarily reflected in the restriction of capital flow (Chen & Yoon, 2022). Difficulty in obtaining financing hinders new and small-medium enterprises from expanding their operations and innovating, affecting their competitiveness and innovation capabilities. Financing challenges lead to a conservative business strategy, reducing the pace of innovation, resulting in a gradual loss of

competitive advantage in the market competition, ultimately leading to a decline in entrepreneurial performance. This makes it difficult for enterprises to fully leverage market opportunities, meet market demands, and affects their profitability (Huy et al., 2021).

In the relationship between digital finance and entrepreneurial performance, corporate financing constraints play a mediating role. Financing constraints restrict the flow of funds in enterprises, making it challenging for them to obtain sufficient funds for innovation and business expansion. This directly impacts entrepreneurial performance, causing enterprises to gradually lose their competitive advantage in the market competition (Hubbard & Petersen, 2020). Digital finance, by addressing corporate financing constraints, can provide more financial support for enterprises, promote innovation and business expansion, and consequently improve entrepreneurial performance (Nikolov et al., 2021). However, ineffective resolution of financing constraints by digital finance can lead enterprises into a financial shortage dilemma, reducing their competitiveness and impacting the improvement of entrepreneurial performance.

Conclusion

This study investigates how digital finance influences entrepreneurial performance in new and small–medium enterprises (SMEs), highlighting the positive effects of easing financing access and reducing costs, with entrepreneurial opportunity identification acting as a key mediator. It offers insights into leveraging digital finance for strategic benefits while noting its limitations in addressing financing constraints. Providing both theoretical and practical implications, the research suggests pathways for advancing digital finance use and fostering entrepreneurial innovation in a concise manner.

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