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ARTICLE

CEOs' Poverty Experience and Corporate Digitalization

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Abstract
This study delves into the intricate relationship between chief executive officers' (CEOs') experiences of poverty and the digital transformation of their firms. Employing comprehensive data collection on CEOs' birthplaces and leveraging advanced text analytics to quantify digitalization, our analysis encompasses a wide array of listed companies in China. The findings reveal that CEOs' impoverished experiences exert a detrimental influence on their firms' digital transformation efforts, primarily due to a lack of motivation and social resources necessary for such initiatives. However, this adverse effect can be ameliorated when CEOs gain access to substantial social resources in later life. Our conclusions are robust, supported by rigorous testing, and underscore not only the impact of CEOs' early-life poverty on corporate digitalization but also the potential for overcoming these challenges through the acquisition of external social resources and connections in adulthood. This study contributes significantly to existing literature and offers practical implications for enhancing corporate digital transformation strategies.

摘要
本研究深入探讨了首席执行官（CEO）的个人贫困经历如何影响企业的数字化转型。我们全面收集了 CEO 的出生地信息，并采用前沿的文本分析技术来量化数字化程度，我们的分析涵盖了中国众多上市公司。研究结果表明， CEO 的贫困经历对其企业的数字化转型努力产生了不利影响，这主要归因于缺乏此类举措所需的动机和社会资源。然而，当 CEO 在后来的生活中获得大量社会资源时，这种不利影响可以得到缓解。我们的研究结果是稳健的，并得到了严格的检验支持。我们的研究不仅强调了 CEO 早年贫困经历对企业数字化的影响，还指出了通过成年后获取外部社会资源和联系来克服这些挑战的可能性。本研究对现有文献做出了重要贡献，并为加强企业数字化转型战略提供了实践启示。

Keywords: digital transformation; poverty experience; social resources
关键词: 数字化转型; 贫困经历; 社会资源

Introduction

The digital economy has emerged as a transformative force, reshaping the global economic and societal landscape. Corporate digital transformation involves a strategic process wherein businesses leverage a combination of digital technologies to initiate substantial organizational changes and enhance overall operational efficiency. The pivotal role of CEOs in seizing the opportunities presented by digital transformation cannot be overlooked. In a knowledge-based economy, human capital wields significant influence over corporate decision-making. As a crucial component of human capital, CEOs' ability to create and utilize intangible assets constitutes a core competency for organizations. Human factors are integral to corporate practices and are closely linked to behavioral decisions related to financing (Cronqvist, Hakhija, & Yongker, 2012; Jiang & Huang, 2013; Malmendier, Tate, & Yan, 2011), investment (Dittmar & Duchin, 2016), and social responsibility (Xu & Li, 2016). The accumulation of human capital among firm executives is profoundly influenced by their developmental environment.

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An individual's upbringing shapes their personality and decision-making style (Dittmar & Duchin, 2016). Notably, childhood adversity can impose both psychological hardships and a scarcity of social resources on impoverished CEOs. These early adversities persist in the subconscious and exert a profound impact on behavior in adulthood.

Regarding the inner beliefs and psychological impact of adversity on CEOs, early poverty experiences significantly shape their perspectives on wealth and risk tolerance. Initially, some literature found that these CEOs may exhibit a strong desire for wealth and status, driven by the scarcity they experienced in their formative years (Dittmar & Duchin, 2016; Ditzen, Schmidt, Strauss, Nater, Ehlert, & Heinrichs, 2008; Gephart & Campbell, 2015). Once they achieve certain milestones, they tend to amplify the potential consequences of high-risk projects, harboring an intense fear of losing their hard-earned wealth and status, and thus, inadvertently reliving their childhood poverty (Denrell & March, 2001). Additionally, CEOs with poverty backgrounds might be content with moderate success, exhibiting a lack of motivation to take further risks, which can stifle their ambition (Mehta et al., 2013). Conversely, other literature also demonstrated that the experience of poverty cultivates unique cognitive styles and behavioral patterns in individuals. It fosters creative and flexible thinking, strong adaptability, and enhanced problem-solving abilities, all of which are invaluable in the context of digital transformation (Kimberly & Evanisko, 1981; Kraus, Cote, & Keltner, 2010; Nelson & Phelps, 1966; Stephens, Markus, & Phillips, 2014). Furthermore, the adversity of poverty often ignites a powerful desire to alter one's circumstances. Senior executives tend to infuse their personal experiences, preferences, and inclinations into their decision-making and leadership behaviors (Bertrand & Scholar, 2003; Boeker, 1997).

Regarding the impact of external conditions on the development of human capital, poverty fundamentally indicates a scarcity of resources in the CEOs' formative environments (Banerjee & Duflo, 2011). This resource limitation, particularly concerning social resources, can impede executives from engaging in high-risk innovative activities, such as digital transformation. Growing up in impoverished conditions necessitates that executives endure the hardship of scarce social resources to survive. Consequently, CEOs from such backgrounds often struggle to secure capital for innovative activities, leading to a pronounced tendency toward 'thriftiness' and a higher propensity for savings in corporate decision-making. Malmendier et al. (2011) found that individuals who experienced the Great Famine tend to be more cautious and less inclined to invest in risky assets. Similarly, Donaldson (1990) discovered that during economic recessions, senior executives generally exhibit risk aversion, adopt conservative corporate financial policies, avoid external debt financing, and maintain low leverage ratios. Faced with the scarcity of material resources and social resources, CEOs who have experienced poverty are more risk-sensitive and lack the necessary resilience to withstand the potential losses from R&D failures. Their aversion to exploring risky projects also stems from limited access to high-end technology and cutting-edge information, further hindering corporate innovation investments. Additionally, the scarcity of social resources would hold CEOs back from networking and gaining support for digitalization. The heterogeneity of individual social networks, the relative social position of network members, and the strength of relationships between individuals and network members determine the quantity and quality of social resources that individuals possess (Lin, 2002). The concerns about poverty are not only about money but also related to social resources. CEOs who grew up in poverty lack social network connections to help obtain government and business resources and also need to overcome the negative reputation associated with poverty.

The digitalization drive is precipitating fundamental changes in production methodologies, societal lifestyles, and governance. Consequently, CEOs must consider several critical perspectives when making decisions about implementing digitalization. Successful corporate digital transformation hinges on the collaborative support of both managers and digital technology talents (Qi & Xiao, 2020). Unlike traditional corporate decision-making in production and operations, digital transformation emphasizes the application of digital technology in actual business operations, fostering business model innovation and organizational change (Fitzgerald, Kruschwitz, Bonnet, & Welch, 2014; Hanelt, Bohnsack, Marz, & Marante, 2021). The vision and personality of CEOs significantly influence the direction and the level of digitalization. However, since CEOs' experiences may negatively impact the digitalization

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level, it is crucial to identify strategies for mitigating this potential adverse effect to ensure the company's digital development. This entails leveraging the unique strengths of digital technology talents, fostering a culture of innovation, and ensuring robust support systems and resources are in place to facilitate the digital transformation process.

Previous research on corporate digital transformation has predominantly centered on macro-level factors, such as institutional landscapes, policy backing, and industry environments (Verhoef et al., 2021; Wu, Chang, & Ren, 2021). In contrast, our article focuses on the role of CEOs' poverty experiences, contributing to the literature in two significant ways: first, by exploring how the characteristics of CEOs' experiences impact corporate decision-making; second, by examining internal factors that influence corporate digital transformation. This dual focus enhances our understanding of the nuanced ways in which human capital's personal histories and internal corporate dynamics shape digital transformation efforts.

Firstly, while much of the research on the influence of executive team characteristics on digital decision-making in corporations has focused on standard traits such as gender, age, education, and early upbringing (Gephart & Campbell, 2015; Wu & Treiman, 2004), existing literature has not deeply explored the mechanisms through which these characteristics affect digital transformation. Most studies still stay at the level of theoretical analysis. Moreover, previous research has overlooked the impact of changes in acquired experience. The subsequent acquisition of social connections by CEOs plays a crucial role in the successful implementation of innovative activities. When CEOs are equipped with adequate social resources, their experiences of poverty can cultivate an enhanced ability to adjust strategies, seize opportunities, and promote the sustainable development of enterprises in the rapidly evolving landscape of digital transformation.

Secondly, factors influencing corporate digital transformation include the organization's willingness to take risks (Dremel, Herterich, & Wulf, 2017; Kane, Palmer, & Phillips, 2015) and the characteristics of the executive team (Zhang & Chen, 2021). However, there exists a gap in the literature regarding the specific external and intrinsic impacts of CEOs' experiences. Previous studies have primarily focused on CEOs' inner beliefs and mental impacts, drawing from imprint theory and upper echelons theory (Hambrick & Mason, 1984; Zhang & Chen, 2021). They have largely ignored the external conditions, particularly the scarcity of social resources, which limit the effectiveness of executives' decisions on digitalization. This oversight restricts people's understanding of how poverty, as an external condition, affects the practical implementation of digital transformation initiatives.

Our academic innovation lies in exploring the impact of acquired experiences of CEOs, such as elite education, political connections, and investments in social ties on digital innovation. We aim to analyze the differential impact of poverty experiences before and after CEOs gain access to social resources. By gaining social ties, CEOs from impoverished backgrounds can access cutting-edge technology and resources necessary for digitalization, providing a material foundation for senior executives to infuse their own experiences, preferences, and tendencies into their decision-making and leadership behavior (Boeker, 1997). Once facilitated with social resources, CEOs' prior poverty experiences can uniquely drive digital innovation. These experiences shape their distinct thinking and behavioral patterns and stimulate a strong desire to change the status quo. This dual influence – poverty shaping initial risk aversion and subsequent social resource acquisition enabling strategic agility – offers a nuanced understanding of how personal histories and acquired experiences interplay to influence corporate digital transformation.

Building upon the aforementioned points, this study seeks to investigate how CEOs who have experienced poverty make digital transformation decisions, addressing gaps in the existing literature regarding the role of 'human' factors in digital transformation. The findings illustrate that firms' digital transformation can be hindered by CEOs' poverty experiences, as these experiences often result in a remarkable scarcity of social resources, significantly limiting the firm's capacity for innovation. However, access to social resources can empower CEOs who have encountered poverty to elevate their firm's adoption of digital technologies. Social resources build a bridge by strengthening resource allocation capabilities and enhancing financing opportunities for CEOs with poverty backgrounds.

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This support enables companies to allocate more resources toward digital technologies, thus overcoming the constraints imposed by the CEOs' earlier impoverished experiences.

The marginal contributions of this article can be summarized in several aspects. Firstly, this research delves into the relationship between the early-life experiences of executives and corporate decisions, shedding light on the economic implications of executives' characteristics. Previous studies have mainly examined CEOs' childhood experiences of economic depression (Malmendier & Nagel, 2011) and disasters (Bernile, Bhagwat, & Rau, 2017). Our article contributes to this body of literature by exploring the impact of an important characteristic: CEOs' poverty experiences. These experiences have primarily been examined for their influence on common prosperity, corporate social responsibility, and overall firm profitability (e.g., Xu & Li, 2016). However, there has been limited exploration of how these experiences shape corporate digital innovation and strategic decision-making. More importantly, our article not only investigates how the impoverished origins of CEOs influence their early character formation (Malmendier & Nagel, 2011) but also examines whether corporate decision-making differs during the acquisitional period. This period allows CEOs to overcome the disadvantages of their impoverished backgrounds by obtaining external social resources through acquired education, upbringing, and the expansion of social connections (Benmelech & Frydman, 2015). This dual focus provides a comprehensive understanding of how human capital's early poverty experiences and subsequent social resource acquisition collectively influence corporate digital transformation.

Secondly, this study broadens the scope of research by exploring the impact of social ties or social resources on the outcomes of digital initiatives. Research in social science has consistently shown that social capital discourages opportunistic behaviors, encourages cooperation, facilitates economic transactions, and produces positive economic outcomes (Buonanno, Montolio, & Vanin, 2009; Fukuyama, 1995; Putnam, 1993). Our article contributes to this body of research by examining social capital's role within the corporate setting (e.g., Jha & Chen, 2015). Specifically, a greater accumulation of social resources in later life experiences provides executives with more opportunities to interact with industry resources (Gawer & Cusumano, 2008), thereby mitigating the detrimental effects of CEOs' poverty experiences and fostering digital transformation (Qi & Xiao, 2020). We also contribute to the literature on the sources of dynamic change in imprint theory from the perspectives of the learning effect (Marquis & Tilcsik, 2013) and the additive effect of managerial experience (Mathias, Williams, & Smith, 2015). In the process of social learning, managers are continually exposed to new information, which can enhance or weaken the influence of imprint. Additionally, subsequent experiences can be built upon earlier life experiences, with experiences from different periods affecting the cognitive basis, experiential skills, and knowledge systems of human capital. By acquiring social resources in adulthood, managers can enhance their strategic vision and professional skills, thereby altering the impact of poverty experiences on their behavioral decisions.

Lastly, this study extends the exploration of factors influencing digital transformation, providing valuable empirical insights to facilitate digital transformation efforts. Existing research has largely overlooked how executive characteristics and their acquisition of social resources can impact changes in corporate digital innovation. Through the lens of social resources, this article investigates the success factors of digital transformation, offering decision support for companies seeking to enhance executive governance during significant transitional phases. On one hand, drawing from theoretical frameworks established in prior studies (e.g., Bertrand & Scholar, 2003), this article specifically examines digital transformation as a strategic choice with distinct contemporary relevance, emphasizing that CEOs' personal backgrounds play a decisive role in enterprise development. On the other hand, referencing relevant studies (e.g., Tang, Gao, Zhao, & Ding, 2022), this research provides new evidence on how human capital's personal attributes influence corporate behavior at different development stages. This dual focus enriches discussions on the intersection of executive traits and organizational outcomes, reinforcing the contributions of this study in understanding the nuanced impacts of executive characteristics on digital transformation and corporate innovation.

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Theoretical Background and Hypotheses

Despite its tremendous value to firms, digital transformation is challenging to manage due to significant uncertainties and information asymmetry (Dremel et al., 2017). Obstacles such as a lack of long-term financing resources, the unpredictability of risks associated with innovation, and the difficulty in retaining digital talents impede the digital transformation process. As a comprehensive reform, digital transformation leads to fundamental changes in a firm's organizational structure. Therefore, it requires executives to effectively utilize strategies to integrate it into the firm's culture, leadership, and strategic vision, thereby creating new business models (Kane et al., 2015). Consequently, the strategic decisions of executives are crucial for successful digital transformation (Zhang & Chen, 2021).

Executives' poverty experiences have a profound impact on their managerial style, strategic practices, and innovative initiatives (Cummings & Knott, 2018; Custódio, Ferreira, & Matos, 2019). Growing up with limited resources, these executives may develop a fear of making mistakes and losing the resources they have acquired (Thaler, 1980), leading to the adoption of conservative strategies (Gephart & Campbell, 2015). Their low willingness to take risks can discourage a firm's digital transformation efforts (Dremel et al., 2017).

The essence of poverty lies in the scarcity of resources (Banerjee & Duflo, 2011). Executives who grew up in poverty may overcome material deprivation, but the lack of social resources casts a long-lasting shadow. Lin (2002) posits that individuals who occupy high positions in one resource dimension often hold similar positions in other resource dimensions. Interactions among society's members are more likely to occur among individuals at similar and adjacent hierarchical levels. Social resources embedded in personal networks, such as power, wealth, and reputation, are not directly possessed by individuals but are obtained through their direct or indirect social relationships. Poverty experience places executives at a disadvantaged starting point within social networks, thereby limiting their opportunities to acquire essential social resources (Peng & Luo, 2000).

Firstly, from the perspective of institutional social resources, executives with poverty experiences have less access to social networks necessary to establish contacts with local government. As a result, they encounter greater resistance in obtaining market information on policy interventions and miss advantageous financing opportunities or subsidies (Ozer, Alakent, & Ahsan, 2010), leading to a slow and sluggish digital transformation (Wu et al., 2021). Secondly, from the perspective of business social resources, executives with poverty experiences have limited resources for sharing information with customers and industry partners (Batjargal, Hitt, & Tsui, 2013). This limitation makes it harder for them to grasp customer needs or capture the dynamics of industry market competition, thereby increasing the burden of digital transformation (Verhoef et al., 2021). Thirdly, from the perspective of technical social resources, the lower social network position of executives with poverty experiences hinders their ability to connect with technical institutions such as universities, research institutes, and industry technology associations. This challenge results in difficulties in retaining high-end technical talents (Teece, 2007), which is detrimental to digital transformation. Therefore, the primary hypothesis of this article can be stated as follows:

Hypothesis 1 (H1): CEO poverty experience has a negative impact on the firm's digital transformation.

However, once CEOs with poverty experience gain access to social resources, they can broaden their horizons and enhance their resource reserves. These advantages directly translate into a powerful driving force for promoting digital transformation within the company. Specifically, executives enhance their awareness and capabilities for digital transformation in the following ways.

Once executives acquire social resources successfully, their awareness of digital transformation increases. This acquisition significantly elevates and expands their social circles, incorporating connections from a wider range of industry sectors and including key individuals with rich experience and expertise. The accumulation of social resources provides executives with more opportunities to interact with industry leaders, technology experts, and peers. By participating in industry forums, high-end summits, and roundtable discussions, they establish connections with elites from different fields

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(Gawer & Cusumano, 2008). Such cross-domain exchanges not only enrich their information sources but also enable them to stay updated on the latest trends, successful cases, and technological innovations in digital transformation (Qi & Xiao, 2020). Additionally, executives can use social media platforms to build broader social networks, continuously acquiring industry dynamics and cutting-edge knowledge (Leonardi, 2018). The richness of social resources drives executives to constantly enhance their strategic vision and professional skills. They engage in professional training, attend advanced courses, or pursue higher degrees to deepen their understanding of digital transformation (Huang, Phillips, Yang, & Zhang, 2020). Moreover, they actively read professional books, research papers, and industry reports, staying informed about the latest research outcomes and theoretical advancements in digital transformation. This continuous learning and self-improvement process enables executives to more accurately grasp the direction and focus of digital transformation, providing strong support for strategic decision-making.

Meanwhile, with social resources, executives possess stronger capabilities for driving digital transformation. Financial support from social resources is crucial for advancing digital transformation. By establishing close partnerships with government bodies and financial institutions, executives can secure more policy support and financial subsidies for their companies. Access to funding allows them to allocate resources more flexibly, smoothing the implementation of digital transformation projects. This financial backing enables investment in advanced digital technologies and equipment, which improves production efficiency and innovation capabilities (Leonardi, 2018). Digital transformation also requires high-quality digital talents. Executives can use funds to strengthen their digital talent pool by recruiting, training, and incentivizing top digital professionals (Karimi & Walter, 2015; Warner & Wäger, 2019). Furthermore, financial resources can be used to optimize the company's organizational structure and management processes, promoting a shift toward a flatter and more networked organization (Qi & Xiao, 2020; Verhoef et al., 2021). Executives focus on transforming social resources into internal advantages for their companies. They advocate for an open, inclusive, and innovative corporate culture, encouraging employees to actively participate in digital transformation initiatives (Fitzgerald et al., 2014; Leonardi & Meyer, 2015). Additionally, they prioritize cultivating and introducing digital skills within the workforce, setting up special funds, and providing training opportunities to stimulate employees' innovative potential and career development motivations (Warner & Wäger, 2019). This dual optimization of culture and talents not only enhances the company's digital transformation capabilities but also lays a solid foundation for sustainable development. We therefore propose the following hypothesis regarding the moderating effect:

Hypothesis 2 (H2): Social resources can mitigate the negative impact of the CEO poverty experience on the firm's digital transformation.

Methods

Data and Sample

This research utilizes a comprehensive dataset comprising 17,803 observations meticulously sourced from the China Stock Market & Accounting Research (CSMAR) Database and the Wind Economic Database. It specifically focuses on publicly listed firms in China, covering a study period spanning from 2009 to 2020 and encompassing a total of 2,558 firms. To quantify the extent of digitalization, we employ a sophisticated textual analysis approach, measuring the frequency of digital-related terms within financial reports extracted from public data available via the Shanghai and Shenzhen Stock Exchanges.

The research methodology involves an in-depth analysis of the personal attributes of CEOs from publicly listed firms in China, complemented by a thorough examination of financial reports to assess the level of digital transformation. To better understand the impact of CEOs' poverty experiences, we conducted comprehensive telephone surveys to collect detailed information regarding the backgrounds of the firm's management team, including their birthplace and family economic situation. This article employed a manual research approach to ascertain information regarding the birthplaces of CEOs,

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following the methodology outlined by Dai, Xiao, and Pan (2016). The information-gathering process involved three primary methods: (1) extraction from resumes: birthplace details of the top executives were sourced from the resumes of top executives of listed companies. (2) Internet searches: IN cases where executive resumes did not disclose birthplace information, internet searches were conducted using specific keywords such as 'dialect', 'hometown', 'birthplace', 'native place', 'folks', and 'fellow' to locate the executive's birthplace details. If direct birthplace information was unavailable, the registered hometown details were utilized as a substitute. (3) Telephone interviews: In situations where internet searches did not yield the birthplace information of the executive, telephone interviews were conducted with the securities representatives of the listed companies to acquire the necessary information.

When evaluating the economic conditions of the CEOs' birthplaces, we obtained the list of key counties for national poverty alleviation work (referred to as 'national poor counties') from the Poverty Alleviation Office of the State Council. The compilation of this list has been overseen by the State Council Leading Group Office of Poverty Alleviation and Development. It has undergone three rounds of validation in 1994, 2001, and 2012. As of 2014, the list remained consistent, comprising 832 counties, including county-level administrative units, autonomous regions, and county-level cities. Notably, the roster of impoverished counties has exhibited remarkable stability over time.

Measurement

Dependent variable

In our examination, the dependent variable is *lnDigit*. To construct this variable, we first define *Digitalization* by identifying the initial appearance of digital technology-related keywords in the financial report. If keywords related to 'digital' emerge for the first time in the company's annual report during a given year, *Digitalization* is quantified as the number of such digital-related keywords in the annual report, signifying the company's degree of digitalization. Otherwise, it is recorded as zero. Subsequently, we construct the dependent variable *lnDigit* by calculating the natural logarithm of one plus *Digitalization*, which helps correct the right-skewed distribution of *Digitalization*.

Regarding the specific keywords related to digitalization, we adhere to the approach employed in the prior literature (Chen, Chiang, & Storey, 2012; Farboodi, Mihet, Philippon, & Veldkamp, 2019; McAfee & Brynjolfsson, 2012). We select the keywords 'ABCD technology' and 'digital technology application' to form the indicator for digital transformation.

'A' for Artificial Intelligence Technology: includes keywords like 'Artificial Intelligence, Business Intelligence, Image Understanding, Investment Decision Aid Systems, Intelligent Data Analytics, Intelligent Robotics, Machine Learning, Deep Learning, Semantic Search, Biometrics, Face Recognition, Speech Recognition, Identity Verification, Autonomous Driving, Natural Language Processing'.

'B' for Blockchain Technology: Encompasses keywords such as 'Blockchain, Digital Currency, Distributed Computing, Differential Privacy Technology, Smart Financial Contracts'.

'C' for Cloud Computing Technology: Comprises keywords like 'Cloud Computing, Stream Computing, Graph Computing, Memory Computing, Multi-party Secure Computing, Brain-like Computing, Green Computing, Cognitive Computing, Fusion Architecture, Million-level Concurrent, EB-level Storage, Internet of Things, Information Physical System'.

'D' for Big Data Technology: encompasses keywords including 'Big Data, Data Mining, Text Mining, Data Visualization, Heterogeneous Data, Credit, Augmented Reality, Mixed Reality, Virtual Reality'.

'Digital technology application' signifies the utilization of the internet, platforms, and other mobile software, combined with smart applications, to enhance market efficiency. It covers a wide range of areas, including 'Mobile Internet, Industrial Internet, Internet Medical, E-commerce, Mobile Payment, Third-party Payment, NFC Payment, Smart Energy, B2B, B2C, C2B, C2C, O2O, Internet Connection, Smart Wearable, Smart Agriculture, Smart Transportation, Smart Medical, Intelligent Customer Service, Intelligent Home, Intelligent Investment, Intelligent Tourism, Intelligent Environmental Protection, Smart Grid, Intelligent Marketing, Digital Marketing, Unmanned Retail, Internet Finance, Digital Finance, Fintech, Financial Technology, Quantitative Finance, Open

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Banking'. For the methodology, we utilize the Python crawler function to access the annual reports of tech ventures. We extract all textual content from these reports using the Java pdfbox library, creating a comprehensive data pool for subsequent keyword screening and analysis.

Independent variable

The independent variable is the CEOs' poverty experience, denoted as *PoorCEO*. This variable is assessed using two distinct metrics. From a district-level perspective, we consider indicators such as poverty county designation and population decline in counties affected by natural disasters during 1959–1961. Among these, the measurement of *Poverty County* is of primary interest. In line with Xu and Li (2016), *Poverty County* is assigned a value of 1 if the CEO was born in a national poverty-stricken county during the specified year, and 0 otherwise. Additionally, in robustness checks, we introduce *Shrink*, calculated as the change in the Great Famine cohort size relative to the normal cohort size in terms of the agricultural population, following the methodology described by Guo, Gao, and Liang (2024). The normal population is derived from the province's population data for a three-year window around the Great Famine (1956–1958, 1962–1965). Based on this, we define poverty by the extent of population reduction in the CEO's birth province during the Great Famine. Specifically, the value of *CEOShrink* is 1 if the CEO's birth province is one of the top 10% of the most depopulated provinces, and 0 otherwise.

To exclude potential confounding effects, we control variables of both firm characteristics and CEO attributes. Firm characteristics consist of capital intensity per employee (*CapIntensity*), firm's investment opportunities (*Q*), firm's cash flow (*CF*), firm size (*Size*), and firm's ownership (*SOE*). We also consider CEO characteristics, including CEO Age (*CEOAge*), whether the CEO is Chairman (*ChairmanCEO*), political background of the CEO (*GOV*), business background of the CEO (*BCA*), educational background of the CEO (*ACA*), and gender of the CEO (*Gender*). Besides, to exclude potential confounding effects introduced by our moderating variables, which will be described in the next section, we also take them as control variables.

Specifically, *CapIntensity* is computed as the natural logarithm of the ratio of net property, plant, and equipment to the number of employees. *Q* is quantified using Tobin's *Q*, which is the market value of assets divided by the book value of assets. *CF* is calculated by dividing the cash flow from operations by the lagged firm size. *Size* is assessed as the natural logarithm of total assets. To identify state-owned enterprises, we use an indicator variable, *SOE*, which takes the value of 1 for state-owned companies and 0 for others. *CEOAge* represents the age of the CEO, while *Chairman*CEO is an indicator variable, assuming a value of 1 when the CEO concurrently holds the position of chairman of the board, and 0 otherwise. When the CEO has served in government departments at the central, provincial, municipal, county, district, or township level, the value of *GOV* is assigned 5, 4, 3, 2, and 1, respectively. If the CEO has no such experience, the value of *GOV* is 0. *BCA* is measured by two dimensions: whether the CEO has experience in industry associations and whether the CEO has a finance industry background. A value of 1 is assigned if the CEO has industry association experience, and 0 otherwise. Similarly, a value of 1 is assigned if the CEO has a financial industry background, and 0 otherwise. The scores of these two dimensions are summed to obtain the measure of *BCA*. *ACA* consists of indicators in three dimensions: education level, overseas study experience, and teaching and scientific research experience. CEO education is assigned values of 5, 4, 3, 2, and 1 for doctoral, master, undergraduate, college, and secondary school degrees, respectively. A value of 1 is assigned to those with overseas study experience, and 0 otherwise. The values of 2, 1, and 0 are assigned based on the number of teaching experiences in colleges and universities and the number of experiences in scientific research institutes. The value of *ACA* is obtained by summing these three scores. *Gender* is a dummy variable that is assigned a value of 1 if the CEO is male and 0 otherwise.

Moderating variable

To test H2, we design the following moderating variables to measure the magnitude of social resources from three perspectives. First, in terms of the CEOs themselves, participation in MBA or EMBA programs is considered an important channel for CEOs to acquire social resources (Yang, 2011).

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By participating in an MBA or EMBA program, CEOs meet and connect with members of the elite stratum who are also in the program, and gain access to the university's alumni network. This greatly expands their social network and provides them with access to a large number of social resources (Cohen, Frazzini, & Malloy, 2010). From this perspective, we have designed the variable *MBA*, assigning a value of 1 if the CEO has participated in an MBA or EMBA program, and 0 otherwise.

Second, we focus on the relationship between the CEO and government officials in key positions where the firm is located. Hometown relationships are considered to be important knots in social networks (Fisman, Shi, Wang, & Xu, 2018). If CEOs have a hometown relationship with senior government officials, such as provincial governors and provincial party secretaries, they are more likely to access a wide range of social networks at a low cost and gain access to numerous social resources (Zhu, Pan, Qiu, & Xiao, 2022). Based on this deduction, we have designed the variable *Relation*, which is assigned a value of 1 if the firm's CEO has a hometown relationship with the party secretary of the province where the firm has been located in the last five years, and 0 otherwise.

Third, we focus on firm-level investment in social resources. Business hospitality is a crucial way for firms to acquire social resources (Cai, Fang, & Xu, 2011). When firms allocate more money to business hospitality, they can acquire more social resources. From this perspective, we have designed the variable *ETC*, which indicates Entertainment and Travel Costs expenditures. *ETC* is calculated as an itemized subcategory of Selling, General, and Administrative Expenses (SG&A) obtained from the annual report's sales expense details. It is expressed as the ratio of these costs to income, multiplied by 100. A higher value of *ETC* indicates more substantial capital allocated for business hospitality in that year.

Model

To test the effect of CEO poverty experience on digital transformation, we constructed the following fixed-effects model. To account for potential confounding effects, we included control variables for firm characteristics, CEO attributes, and CEO's social resources. If α_1 is negative, then H1 is supported.

$$lnDigit_{i,t+1} = \alpha_0 + \alpha_1 PoorCEO_{i,t} + \gamma Controls_{i,t} + FirmFE + YearFE + \varepsilon_{i,t}$$

We designed the following model to test the moderating effect. *lnDigit*, *PoorCEO*, and *Controls* are all defined in the same way as in the main regression model above, and *M* represents either *MBA*, *Relation*, or *ETC*. The coefficient of core interest is β_2. If β_2 takes a positive value, indicating that social resources can mitigate the negative effect of CEOs' poverty experiences on the firm's digital transformation, then H2 is supported. This finding would reinforce our argument that the lack of social resources is what causes the negative effect of CEO poverty experience on the digital transformation of the firm.

$$lnDigit_{i,t+1} = \beta_0 + \beta_1 PoorCEO_{i,t} + \beta_2 PoorCEO_{i,t} \times M_{i,t} + \theta Controls_{i,t} + FirmFE + YearFE + \xi_{i,t}$$

Results

Descriptive Statistics

Descriptive statistics for the key variables can be found in Table 1. Given that firm digitalization exhibits a normal distribution as a continuous variable, we utilize ordinary least squares (OLS) regression to test our main hypothesis. In Table 2, Pearson's correlation coefficients are shown in the lower triangle, including the diagonal, while Spearman's rank correlations appear above the diagonal.

Baseline Results

Model 1 in Table 3 provides the OLS estimation results for the influence of CEOs' poverty experiences on firm digital transformation. Consistent with our theory, the results reveal a negative coefficient for

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Table 1. Descriptive statistics

	Obs.	Min	Median	Max	Mean	Std. Dev.
lnDigit	17803	0.000	0.000	2.303	0.546	0.690
PoorCEO	17803	0.000	0.000	1.000	0.007	0.085
CapIntensity	17803	9.458	12.440	15.570	12.448	1.106
Q	17803	0.899	1.626	8.291	2.031	1.237
CF	17803	−0.184	0.044	0.250	0.044	0.072
Size	17803	19.415	21.812	26.974	22.039	1.369
SOE	17803	0.000	0.000	1.000	0.343	0.475
CEOAge	17803	33.000	49.000	65.000	49.441	6.505
ChairmanCEO	17803	0.000	1.000	1.000	0.670	0.470
GOV	17803	0.000	0.000	5.000	0.788	1.558
BCA	17803	0.000	0.000	2.000	0.105	0.316
ACA	17803	1.000	4.000	8.000	3.622	1.061
Gender	17803	0.000	1.000	1.000	0.936	0.245
EMBA	17803	0.000	0.000	1.000	0.069	0.254
ETC	17803	0.010	0.192	2.792	0.308	0.392
Relation	17803	0.000	0.000	1.000	0.499	0.500

PoorCEO. This result indicates that CEOs' experiences with poverty have a substantial and negative impact on firm digital transformation, which supports H1.

Moderating Effects

The results of the moderating effects tests are shown in Models 2–5 in Table 3. Models 2–4 test the moderating effects of *MBA*, *Relation*, and *ETC* as moderating variables, respectively. Model 5 tests the moderating effects of all three variables simultaneously. The results in all four columns demonstrate the effectiveness of social resources in mitigating the negative effect of CEOs' poverty experiences on the digital transformation of the firm, thereby supporting H2.

To present the above moderating effects more intuitively, we show plots of the predicted value of *lnDigit* in Figure 1. Figure 1(a) presents the predicted value and its 95% confidence interval of *lnDigit* based on *PoorCEO*, with *MBA* as the moderating variable. The red point in the figure indicates that *MBA* takes a value of 1 and the blue point indicates that *MBA* takes a value of 0. As we see from the figure, when CEOs haven't acquired an MBA or EMBA degree (*MBA* = 0), the predicted value of *lnDigit* for CEOs with poverty experience (*PoorCEO* = 1) is smaller than that for CEOs without poverty experience (*PoorCEO* = 0). However, when CEOs hold an MBA or EMBA degree (*MBA* = 1), the predicted value of *lnDigit* for poverty-stricken CEOs (*PoorCEO* = 1) surpasses that for CEOs with poverty experience (*PoorCEO* = 1) but without an MBA or EMBA degree (*MBA* = 0). It indicates that the CEO's participation in an MBA or EMBA program significantly mitigates the negative impact of the CEO's poverty experience on the firm's digitalization. Similarly, (b) presents the predicted value and its 95% confidence interval of *lnDigit* based on *PoorCEO*, with *Relation* as the moderating variable. The red point in the figure indicates that *Relation* takes a value of 1 and the blue point indicates that *Relation* takes a value of 0. The figure shows that when CEOs don't have a hometown relationship with the provincial government officer in a key position (*Relation* = 0), the predicted value of *lnDigit* for impoverished CEOs (*PoorCEO* = 1) is lower than that for CEOs free from poverty (*PoorCEO* = 0). However, when *Relation* takes the value of 1, the difference shrinks sharply between the predicted

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Table 2. Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
lnDigit	1.000	0.001	−0.232	0.217	0.004	−0.012	−0.188	−0.017	−0.145	0.032	0.084	0.100	−0.015	0.059	0.020	−0.123
PoorCEO	0.003	1.000	−0.011	−0.044	−0.001	0.058	0.065	−0.008	0.051	−0.016	−0.031	−0.003	0.024	−0.021	−0.028	−0.008
CapIntensity	−0.249	−0.005	1.000	−0.168	0.078	0.268	0.158	0.098	0.107	0.012	−0.056	−0.009	0.039	−0.066	−0.154	−0.115
Q	0.188	−0.025	−0.135	1.000	0.147	−0.420	−0.169	0.008	−0.107	0.001	0.009	0.045	−0.025	0.010	0.175	−0.095
CF	0.003	0.000	0.081	0.142	1.000	0.022	0.013	0.043	0.021	0.026	0.000	0.009	−0.011	−0.015	−0.051	−0.008
Size	−0.008	0.066	0.283	−0.369	0.011	1.000	0.316	0.143	0.169	0.004	0.003	0.077	0.057	−0.044	−0.349	−0.293
SOE	−0.186	0.065	0.182	−0.112	0.021	0.326	1.000	0.100	0.346	−0.162	−0.093	0.079	0.090	−0.135	−0.141	−0.082
CEOAge	−0.017	−0.007	0.098	0.013	0.043	0.147	0.098	1.000	−0.145	0.059	−0.021	−0.109	0.019	−0.068	−0.082	−0.155
ChairmanCEO	−0.144	0.051	0.116	−0.070	0.025	0.162	0.346	−0.160	1.000	−0.254	−0.185	−0.011	−0.017	−0.103	−0.036	−0.086
GOV	0.026	−0.019	0.009	−0.010	0.009	0.022	−0.150	0.083	−0.270	1.000	0.148	0.022	−0.074	0.057	0.013	0.036
BCA	0.075	−0.030	−0.051	0.017	−0.008	0.034	−0.091	−0.007	−0.185	0.144	1.000	0.055	−0.002	0.031	0.022	0.013
ACA	0.102	−0.004	−0.011	0.059	0.003	0.089	0.078	−0.117	−0.016	0.046	0.053	1.000	0.028	0.195	0.003	−0.036
Gender	−0.009	0.024	0.050	−0.016	−0.006	0.060	0.090	0.024	−0.017	−0.066	0.000	0.027	1.000	−0.008	0.000	−0.009
EMBA	0.057	−0.021	−0.075	−0.008	−0.013	−0.047	−0.135	−0.067	−0.103	0.054	0.034	0.161	−0.008	1.000	0.032	0.030
ETC	0.024	−0.026	−0.112	0.140	−0.084	−0.249	−0.095	−0.060	−0.033	0.007	0.043	0.027	0.009	0.019	1.000	0.129
Relation	−0.125	−0.008	−0.111	−0.095	−0.010	−0.262	−0.082	−0.142	−0.086	0.029	0.012	−0.035	−0.009	0.030	0.076	1.000

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Table 3. Baseline results

Variables	lnDigit Model 1	lnDigit Model 2	lnDigit Model 3	lnDigit Model 4	lnDigit Model 5
PoorCEO	−0.147*** (−2.722)	−0.153*** (−2.813)	−0.236*** (−3.071)	−0.177* (−1.869)	−0.263*** (−2.737)
PoorCEO × MBA		0.320*** (4.949)			0.408*** (4.517)
PoorCEO × Relation			0.191** (2.262)		0.195** (2.224)
PoorCEO × ETC				0.577** (2.552)	0.399* (1.783)
CapIntensity	−0.053*** (−7.464)	−0.053*** (−7.468)	−0.053*** (−7.458)	−0.053*** (−7.460)	−0.053*** (−7.461)
Q	0.015*** (3.211)	0.015*** (3.208)	0.015*** (3.188)	0.015*** (3.212)	0.015*** (3.184)
CF	−0.033 (−0.628)	−0.033 (−0.630)	−0.033 (−0.639)	−0.033 (−0.636)	−0.034 (−0.644)
Size	0.096*** (12.300)	0.096*** (12.302)	0.096*** (12.293)	0.096*** (12.302)	0.096*** (12.295)
SOE	−0.081*** (−4.548)	−0.081*** (−4.548)	−0.081*** (−4.527)	−0.081*** (−4.537)	−0.081*** (−4.522)
CEOAge	−0.000 (−0.425)	−0.000 (−0.414)	−0.000 (−0.431)	−0.000 (−0.426)	−0.000 (−0.417)
ChairmanCEO	−0.023 (−1.552)	−0.022 (−1.550)	−0.022 (−1.549)	−0.023 (−1.562)	−0.022 (−1.549)
GOV	−0.002 (−0.426)	−0.002 (−0.427)	−0.002 (−0.434)	−0.002 (−0.430)	−0.002 (−0.437)
BCA	0.029 (1.329)	0.029 (1.328)	0.029 (1.330)	0.029 (1.330)	0.029 (1.330)
ACA	0.010 (1.437)	0.010 (1.444)	0.010 (1.437)	0.010 (1.436)	0.010 (1.446)
Gender	0.004 (0.138)	0.003 (0.120)	0.004 (0.137)	0.004 (0.136)	0.003 (0.112)
MBA	−0.008 (−0.337)	−0.008 (−0.363)	−0.007 (−0.319)	−0.008 (−0.336)	−0.008 (−0.352)
Relation	−0.011 (−0.969)	−0.011 (−0.964)	−0.012 (−1.078)	−0.011 (−0.974)	−0.012 (−1.075)
ETC	−0.021 (−1.151)	−0.021 (−1.152)	−0.021 (−1.153)	−0.021 (−1.198)	−0.021 (−1.186)
Constant	−1.327*** (−6.966)	−1.327*** (−6.966)	−1.326*** (−6.959)	−1.328*** (−6.967)	−1.326*** (−6.960)
Firm F.E.	Y	Y	Y	Y	Y
Year F.E.	Y	Y	Y	Y	Y
Obs.	17,803	17,803	17,803	17,803	17,803
R^2	0.508	0.508	0.508	0.508	0.508

Notes: *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$. The *t*-statistics are shown in the parenthesis, calculated by the robust standard error.

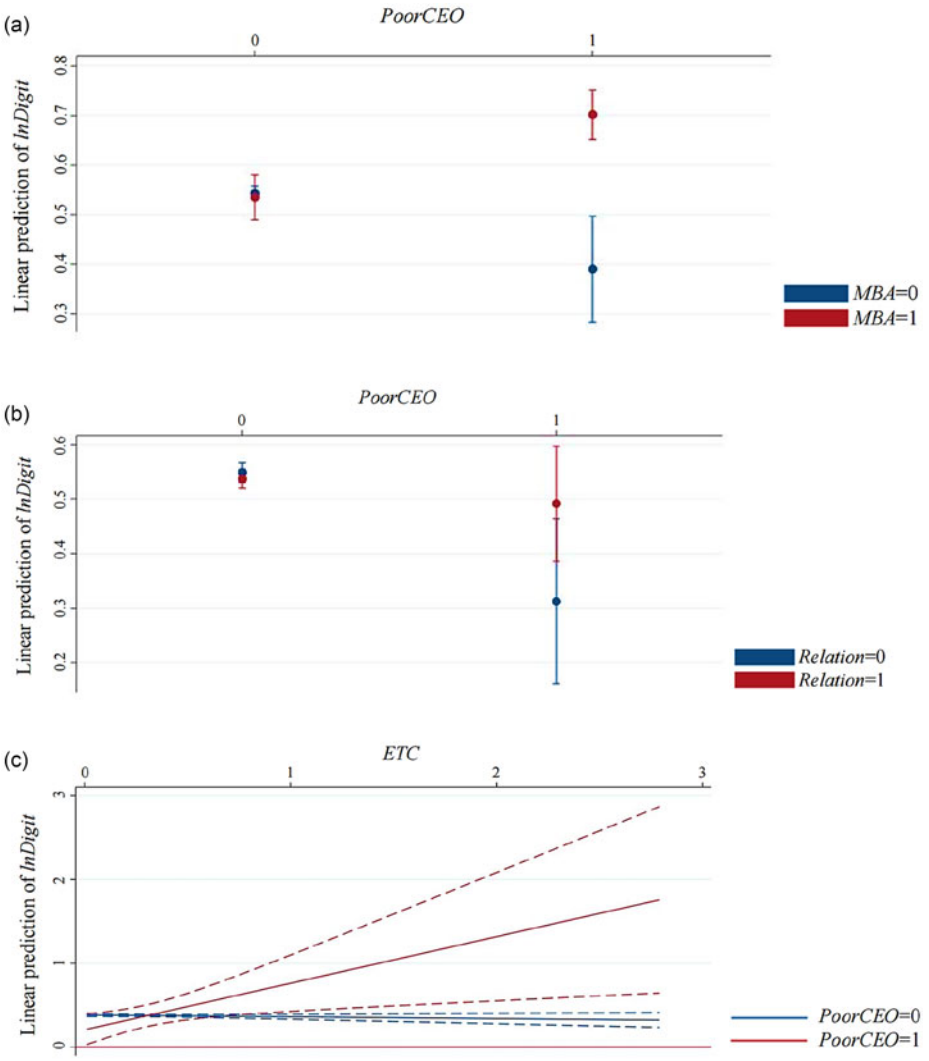


Figure 1. Plots of results of moderating effects tests. (a) Predicted value of *lnDigit*, with *MBA* as the moderating variable. *Notes*: This figure presents the predicted value and its 95% confidence interval of *lnDigit* based on *PoorCEO*, with *MBA* as the moderating variable. The red point indicates that *MBA* takes a value of 1 and the blue point indicates that *MBA* takes a value of 0. (b) Predicted value of *lnDigit*, with *Relation* as the moderating variable. *Notes*: This figure presents the predicted value and its 95% confidence interval of *lnDigit* based on *PoorCEO*, with *Relation* as the moderating variable. The red point indicates that *Relation* takes a value of 1 and the blue point indicates that *Relation* takes a value of 0. (c) Predicted value of *lnDigit*, with *ETC* as the moderating variable. *Notes:* This figure presents how the predicted value and its 95% confidence interval of *lnDigit* based on *PoorCEO* vary with *ETC*. The red line indicates that *PoorCEO* takes a value of 1 and the blue line indicates that *PoorCEO* takes a value of 0. The solid lines indicate the predicted value and the dotted lines indicate the confidence interval.

value of *lnDigit* with poverty-stricken CEOs (*PoorCEO* = 1) and that for normal CEOs (*PoorCEO* = 0), which suggests that the relationship between the CEO and the government significantly mitigates the negative impact of the CEO's experience of poverty on firm digitalization. Finally, (c) presents how the predicted value and its 95% confidence interval of *lnDigit* based on *PoorCEO* vary with *ETC*. The red line in the figure indicates that *PoorCEO* takes a value of 1 and the blue line indicates that *PoorCEO* takes a value of 0. It could be seen from the figure that when the value of *ETC* is close to zero, the predicted value of *lnDigit* when *PoorCEO* is 1 is smaller than the predicted value of *lnDigit* when *PoorCEO* is 0. However, as *ETC* increases, the predicted value for *lnDigit* with impoverished CEOs

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(*PoorCEO* = 1) gradually increases, indicating that *ETC* can mitigate the negative impact of CEO poverty experience on firm digitalization. These findings reinforce our theory that the lack of social resources is indeed a significant reason why CEOs' poverty experiences negatively impact digital transformation.

Robustness Checks

This study conducts robustness checks to further verify the consistency of the results by changing the definition of independent variables and performing an entropy balancing test.

In the baseline regression, we define *PoorCEO* based on the most recent version of the list of poor counties. Since this list has undergone several updates, we define counties that are listed in both the latest and the oldest versions as poor counties in our robustness test. The result of this robustness test is shown in Model 6 in Table 4, and it is consistent with the main regression results.

Further, we introduce an alternative definition of executive poverty based on the Great Famine, denoted as *CEOShrink*. If the CEO's birth province experienced one of the most significant population reductions during the Great Famine, *CEOShrink* is assigned a value of 1; otherwise, it is assigned 0. The specific definition of this variable is described in the section on Independent Variable. Model 7 in Table 4 illustrates that when using *CEOShrink* to measure executive poverty, we continue to observe a significantly negative correlation between executive poverty and digital transformation, consistent with the primary analysis results.

In conclusion, these alternative definitions of executive poverty bolster the robustness of our findings, reaffirming the negative correlation between executive poverty and digital transformation.

In the sample, there is a relatively small percentage of observations with a value of 1 for *PoorCEO*. To address concerns that this distributional bias may interfere with the results, we conduct an entropy balancing test to check the robustness of our findings (Hainmueller, 2012). Specifically, we select all the control variables in the main model as characteristic variables and use the entropy balancing method to calculate weights. These weights ensure that the characteristic variables of samples with CEOs who experienced poverty and those who didn't are not significantly different in terms of mean, variance, and skewness. We then conduct a weighted regression. The results of this test are shown in Table 5, and they continue to indicate that CEOs' poverty experiences negatively affect the firm's digital transformation. This reinforces the robustness of our findings.

Instrumental Variable Test

To mitigate the impact of possible omitted variables on the regression results of this article, we conducted an instrumental variable test. Specifically, we refer to Hoi, Wu, and Zhang (2019) and Zhang (2019), using district genealogical diversity as the instrumental variable. Genealogical diversity

Table 4. Robustness tests with alternative definitions of executive poverty

Variables	lnDigit Model 6	lnDigit Model 7
PoorCEO	−0.187** (−2.239)	
CEOShrink		−0.068** (−2.248)
Controls	Y	Y
Firm F.E.	Y	Y
Year F.E.	Y	Y
Obs.	17,803	17,803
R^2	0.508	0.513

Notes: *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$. The *t*-statistics are shown in the parenthesis, calculated by the robust standard error.

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Table 5. Entropy balancing test

Variables	*lnDigit* *Model 8*
PoorCEO	−0.114** (−2.432)
Controls	Y
Firm F.E.	Y
Year F.E.	Y
Obs.	17,803
R^2	0.628

Notes: *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$. The *t*-statistics are shown in the parenthesis, calculated by the robust standard error.

is calculated by first determining the ratio of the number of genealogies for each surname in the district to the total number of genealogies in the district. Then, we calculate the sum of the squares of these ratios and subtract this sum from one. The greater this value, the higher the genealogical diversity of the district. Higher genealogical diversity indicates greater population mobility and more adequate economic development in the district (Hoi et al., 2019; Zhang, 2019), which reduces the likelihood of experiencing poverty in the district. This meets the correlation requirement of instrumental variables. Additionally, the diversity of genealogies in the district is unlikely to affect the firm's digital transformation through factors other than the individual executives, thus is sufficient for the exogeneity requirement of instrumental variables.

The results of the two-stage regression with district genealogical diversity as the instrumental variable are shown in Table 6. The underidentification test reports the Kleibergen-Paap rk LM statistic with a value of 5.564, rejecting the null hypothesis that the instrumental variable is underidentified at the 5% level. The weak identification test reports the Cragg–Donald Wald *F* statistic with a value of 56.227, which is greater than the critical value of the Stock–Yogo weak instrumental variable identification test at the 10% significance level, thus rejecting the null hypothesis of weak instrumental variables. In the first stage (Model 9), the instrumental variable shows a strong correlation with the explanatory variable. The results of the second stage (Model 10) are consistent with the baseline results of this article, adding more robustness to our findings.

Table 6. Instrumental variable test

Variables	PoorCEO Model 9	lnDigit Model 10
PoorCEO		−1.601** (−2.178)
IV	−1.053*** (−25.991)	
Controls	Y	Y
Firm F.E.	Y	Y
Year F.E.	Y	Y
Obs.	17,803	17,803
R^2	0.018	0.507
Underidentification test	5.564	
P-value	0.0183	
Weak identification test	56.227	
Stock–Yogo critical value	16.38	

Notes: *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$. The *t*-statistics are shown in the parenthesis, calculated by the robust standard error.

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Discussion

In this study, we explore the complex relationship between CEOs' experiences of poverty and corporate digital transformation. Our findings contribute new insights to the growing literature on human factors, particularly to studies on the influence of executive backgrounds on strategic decisions within companies. We examine how human capital's personal adversities shape executives' attitudes and capabilities toward risk and innovation, ultimately influencing their firms' digital transformation.

Firstly, our research supplements the literature by demonstrating that CEOs' experiences of poverty negatively impact firms' adoption of digital technologies. This finding aligns with previous arguments suggesting that CEOs who have experienced poverty may lack the social resources necessary for engaging in high-risk innovative activities such as digital transformation (Banerjee & Duflo, 2011). Their risk aversion, stemming from early-life resource scarcity, often leads to conservative strategies and reluctance to invest in cutting-edge technologies (Malmendier et al., 2011). Our empirical evidence strongly supports this theoretical framework, indicating that CEOs from poverty backgrounds exhibit significant hesitancies to adopt digital technologies, thereby hindering their firms' transformation efforts.

Secondly, we expand the research by examining the moderating role of social resources in mitigating the negative impact of CEO poverty experiences on digital transformation. Our results indicate that social resources, including participation in MBA or EMBA programs, hometown relationships, and firm-level investments in social capital, empower executives from poverty backgrounds to better seize digital transformation opportunities. These resources broaden their perspectives, enhance their resource reserves, and provide pathways to access cutting-edge technologies and information, thereby facilitating the digital transformation process. This finding underscores the importance of social resources in alleviating the adverse effects of poverty experiences on corporate strategic decisions.

Our findings have significant implications for organizations and policymakers. For organizations, understanding the impact of CEOs' personal experiences on strategic decision-making is crucial. Recognizing how CEOs' poverty backgrounds may hinder their drive for digital transformation allows companies to take proactive measures to address these limitations. This may involve providing additional training, guidance, or resources to CEOs from poverty backgrounds to help them overcome hesitancies and seize opportunities that arise from digital technologies. Additionally, our results highlight the necessity for companies to invest in building and maintaining social resources. By establishing relationships with managers of other companies, policymakers, and other stakeholders, companies can access valuable resources and information essential for accelerating digital transformation. This could include increased expenditures on business receptions, strategic networking initiatives, or targeted outreach programs aimed at establishing strong connections with key influencers.

While our study provides valuable insights into the relationship between CEOs' poverty experiences and digital transformation, there are limitations. One potential limitation is the reliance on proxy variables to measure poverty experiences and digital transformation. Although rigorous methods were used to construct these variables, future research could explore more direct measurement approaches to capture nuances in these constructs. Additionally, our study focused solely on listed companies in China. While this context provided a rich environment for our research questions, the findings may not generalize to companies in other regions or non-listed companies. Future research could explore whether similar patterns emerge in different contexts and investigate cross-cultural differences in the impact of CEOs' poverty experiences on digital transformation. Furthermore, our study primarily focused on the impact of poverty experiences and social resources on digital transformation. Future research could delve deeper into the specific mechanisms through which these factors influence strategic decision-making, exploring the mediating roles of cognitive biases, emotional responses, and other psychological factors in the relationship between human capital's personal history and strategic outcomes.

Overall, our research reveals that CEOs' experiences of poverty generally hinder their drive for digital transformation, but this negative impact can be mitigated through access to various social resources. These findings are crucial both theoretically and practically, emphasizing the critical role of human factors in shaping corporate strategic decisions. As the digital economy continues to evolve, it's high time for enterprises to recognize the influence of executives' personal experiences and invest to

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equip executives with adequate social capital stock to utilize fleeting favorable circumstances and chances brought by digital technologies.

Conclusion

Amid the rapid evolution of information technology, the economy and society are undergoing profound digital transformations. This study focuses on exploring the influence of CEOs' social class origins, particularly earlier poverty experiences, on firms' digitalization. Additionally, we examine the moderating effects of social resource acquisition on CEOs' subsequent experiences, including MBA/EMBA education, political connections, and social capital acquisition costs. Our theory and findings highlight that social class origins have a lasting and varying impact on individual preferences, affecting how executives make strategic decisions on digital transformation. The social resources that CEOs acquire can further influence the success and effectiveness of digital transformation initiatives. By examining this novel managerial characteristic, we offer important implications for social class and upper echelons theory, particularly in uncovering the impact of CEOs' personal backgrounds and experiences on corporate strategic decision-making before and after they are equipped with social resources.

This study reveals that CEOs with early experiences of poverty often miss opportunities to access information and embrace changes during the accumulation of individual human capital, resulting in challenges in achieving digital transformation. However, once these CEOs gain access to a wealth of information resources and social ties, they can overcome these initial disadvantages. They would be more willing and have more advantages to emphasize the importance of digital technology within their enterprises and secure additional financing from their expanded social networks in the external industry chain, thereby enhancing the external conditions for digitalization. This transition demonstrates that CEOs with poverty experiences can develop a heightened ability to leverage digital technology. The specific mechanism primarily lies in their robust transformative thinking and enhanced external resource management abilities once they are equipped with social resources. This study underscores the potential for CEOs from impoverished backgrounds to effectively lead digital transformation efforts when supported by adequate social resources.

The insights drawn from this research underscore the critical need for organizations and enterprise management to acknowledge the profound influence of CEOs' personal experiences, particularly those related to poverty. The experience of poverty significantly shapes a CEO's leadership style, subsequently impacting the effectiveness of digital transformation within an enterprise. In the landscape of the digital economy, social resources are pivotal in steering changes in enterprise management. Social ties can support CEOs from impoverished backgrounds in adapting and driving transformation. This not only influences corporate objectives and governance structures but also initiates changes in internal management models. Enterprises should recognize and fully leverage the pivotal role of CEOs with poverty experiences by providing them with greater access to social resources, thereby mitigating the external constraints on digital transformation. This approach can help the human capital shape the organization and management paradigms effectively, leading to successful digital transformation.

Data availability statement. Raw data were collected from China Stock Market & Accounting Research (CSMAR) Database, Wind Economic Database, and financial reports of Chinese publicly listed firms and websites. Derived data supporting the findings of this study are available from the corresponding author upon reasonable request.

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