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Regional culture and corporate finance: a literature review

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According to the theory of institutional economics, local culture has a profound impact on individuals and groups. It fundamentally affects individual preferences and attitudes, guiding decision-making behaviors to develop homogeneous regional cultural characteristics. This, in turn, reflects in the business decisions of companies, leading to imbalances in the development of different regional enterprises. This article reviews the relevant literature on regional culture and corporate finance, aiming to investigate how regional culture plays a significant role in corporate governance and corporate performance. It explores the limitations of existing research and further analyzes issues related to the quantification of culture, its mechanism of influence, and endogeneity in regression models.

Introduction

The study of how culture influences corporate finance has emerged as a prominent area of research in recent years (Goodell et al., 2020; Lei et al., 2022). Guiso et al. (2006) provide a clear definition of culture as intergenerational transmitted and relatively stable customs, values, beliefs, and personal faith that are embodied in religious, racial, and social groups. Culture, as an informal institution, plays a crucial role in the cognitive and behavioral development of economic agents (Guiso et al., 2006). According to institutional economics theory, local culture has a profound impact on individuals and groups, fundamentally shaping individual preferences and attitudes, guiding decision-making behaviors to develop homogeneous regional cultural characteristics. This impact further reflects in the business decisions of companies, leading to imbalances in the development of different regional enterprises (Chen et al., 2014; Guiso et al., 2009; Sun et al., 2023b).

However, one of the key challenges in empirical research is how to quantify culture and identify the underlying mechanisms through which culture influences individual behavior and economic outcomes (Lei et al., 2022; Sun et al., 2023b). Previous research has often relied on country-level settings to examine the impact of culture, thereby providing a vague discussion on how the cultural environment at the national level influences local corporate behavior (Holmes et al., 2013; Li et al., 2013). Representative research on transnational cultures often focuses on cultural dimensions such as collectivism, individualism, conservatism and openness (Boubakri et al., 2016; Boubakri and Saffar, 2016; Shao et al., 2010; Sunwoo et al., 2023). These cultural characteristics at the national level are often considered significant drivers of performance

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disparities, innovative behaviors, and decision-making within different countries and across enterprises with diverse cultural backgrounds (Boubakri et al., 2021; Li et al., 2013; Shi and Veenstra, 2021).

Nevertheless, this approach suffers from significant limitations as cross-national studies struggle to eliminate the influence of institutional differences across countries, resulting in endogeneity issues (Guiso et al., 2004, 2008). In cross-national studies, a prominent endogeneity issue arises from the possibility that the relationship between culture and firm behavior may be driven by different legal systems or specific national attributes in various countries. Even with the inclusion of numerous control variables in econometric regression models, these endogeneity concerns may persist and remain unresolved. Moreover, cross-national cultural research can only identify culture at a macro level, making it difficult to decipher the micro-level mechanisms through which culture operates (Chen et al., 2014; Guiso et al., 2006, 2009; Lei et al., 2022).

Studying the impact of cross-regional cultures on firms within a single country holds significant advantages over cross-national research. This is because the formal institutions and specific national attributes within the same country are inherently controlled. Taking China as an example, all companies in China operate within the same set of legal frameworks established by the government. Therefore, to mitigate the issues often associated with omitted variables in cross-national studies, a mainstream approach is to concentrate on the domestic environment of a single country, aiming to explore the cultural influences based on regional variations within that country (Guiso et al., 2004; Lei et al., 2022; Sun et al., 2023b). These cultural factors complement formal institutions and have far-reaching implications for social changes and the operation of capital markets. With rich cultural heritage, diverse natural environments, and distinct population characteristics, countries around the world bring a strong cultural flavor to modern business decision-making. Therefore, in-depth exploration of the relationship between culture and finance, as well as the promotion and development of cultural aspects, not only contribute to the revival of the cultural industry but also provide solid support for the functioning of capital markets and sustainable business operations. Based on this, this paper extensively reviews existing literature on the impact of regional culture on corporate finance, with the aim of promoting relevant academic research on the relationship between regional culture and corporate finance.

We conducted a comprehensive search in the database for interdisciplinary literature on the relationship between regional culture and corporate finance. Our findings revealed a predominance of studies focusing on Confucianism, religion, and social trust, which have historically been key areas of interest in this field. Furthermore, we observed a recent increase in research on gambling, innovation and food culture. As a result, we have integrated these six categories of regional cultures into our research framework, with the aim of providing comprehensive coverage of the current research themes in this field. During the literature review process, we found that the literature on pan-Asian culture represented by Confucian culture and the recently emerging food culture mainly focuses on research issues within the Chinese context. However, research on religious culture, social trust, gambling and innovation culture encompasses studies across different countries and regions. We have endeavored to comprehensively summarize the research content and contributions of these literature, aiming to provide a more comprehensive overview of the research development in this field. Therefore, this article primarily reviews the types and concepts of regional culture involved in the current mainstream literature in the field of culture and finance, including religious culture, Confucian culture, social trust, gambling culture, innovation culture, food culture, and cultural inclusion (Bhagwat and Liu, 2020; Chen et al., 2014; Du, 2013, 2015; Sun et al., 2022, 2023a, 2023b). Subsequently, this paper systematically examines the literature on how regional culture influences corporate behavior and economic outcomes, providing a critical evaluation of the existing studies. The article also highlights the limitations of current interdisciplinary research on culture and finance and suggests directions for improvement.

Regional culture and corporate finance

In this section, we delved into the overview of regional culture and corporate finance research, placing a significant emphasis on defining different cultures, discussing quantification methods, and reviewing previous research on endogeneity solutions. Subsequently, we conducted a thorough review of how each type of culture can impact corporate governance and corporate performance, culminating in a comprehensive summary.

The overview of regional culture and corporate finance research. Regional culture refers to a system of culture that is formed, inherited, and influential within a specific area (Guiso et al., 2006, 2008, 2009; Sun et al., 2023b). This cultural system typically consists of local values, customs, beliefs, and traditions, reflecting the unique history, traditions, and social characteristics of the region (Ackerman et al., 2009; Lei et al., 2022; Shen and Su, 2017; Sun et al., 2023a). Regional culture plays an important role in shaping the behavior, social interactions, commercial activities, and even economic development of local residents (Adhikari and Agrawal, 2016; Chen et al., 2014; Sun et al., 2022). In the realm of corporate finance research, regional culture is also considered a significant influencing factor, particularly in matters related to corporate governance, management decisions, and business operations.

Ever since the groundbreaking research by Weber (1930) and Landes (1998) demonstrating the crucial role of religion in the development of capitalism, it has been evident that religion influences various outcomes, including government quality (La Porta et al., 1999), economic attitudes (Guiso et al., 2003), creditors' rights (Stulz and Williamson, 2003), and corporate behaviors (Hilary and Hui, 2009). Equally fundamental is the role of social trust, as "virtually every commercial transaction has within itself an element of trust" (Arrow, 1972). Specifically, trust facilitates collective actions (Coleman, 1990; Fukuyama, 1995) and addresses contracting incompleteness (Arrow, 1972; Hendrikse et al., 2015), thereby bolstering international trade (Guiso et al., 2009), and financial development (Guiso et al., 2004) at the macro level. At the micro level, trust influences corporate transactions (Duarte et al., 2012), and inhibits enterprises from engaging in governance misconduct (Dong et al., 2018).

With the advancement of regional cultural and corporate financial research, some scholars have begun to focus on China as an emerging economic entity. The vast territorial expanse, abundant natural resources, and the coexistence of multiple ethnic groups within China have given rise to diverse regional cultures across its various regions, making it an ideal research setting for studying the interplay between regional culture and corporate finance (Lei et al., 2022). As the trend of cultural studies within the context of China continues to grow, Confucian culture, which historically exerted a strong influence on Chinese development, has garnered widespread attention among scholars (Ackerman et al., 2009; Du, 2015, 2016). Furthermore, Confucian culture has exhibited a radiating effect on neighboring countries such as South Korea and Vietnam, gradually evolving into a pan-

Asian cultural characteristic (Kim and Park, 2003; Nguyen and Angelique, 2017).

Since the 21st century, with global technological advancements and robust economic growth, the development of the gambling industry has seen further enhancement, prompting academia to contemplate the nuances of gambling culture more deeply (Lin et al., 2022; Ji et al., 2021). Numerous scholars have begun to explore how gambling culture regulates corporate behavior, aiming to understand how various aspects of corporate decision-making are influenced by the risk preferences and speculative characteristics represented by gambling culture (Spurrier and Blaszczynski, 2014; Spurrier et al., 2015). Representative academic research endeavors to explore the connection between gambling culture and corporate innovation (Adhikari and Agrawal, 2016; Chen et al., 2014).

With the rapid advancement of global technology and the ever-expanding economy, the role of regional innovation culture in promoting corporate innovation has become an increasingly relevant topic for academia (Audretsch et al., 2008; Szerb et al., 2019). With a growing body of research on the subject, scholars have been exploring how regional innovation culture shapes corporate behavior, seeking to understand the ways in which different aspects of corporate decision-making are influenced by the innovative mindset and practices that characterize regional innovation culture (Kraus et al., 2021). Research in this area has also focused on investigating the relationship between regional innovation culture and corporate performance, highlighting the impact of a strong innovation culture on a company's ability to innovate and excel in the market (Iammarino, 2005). As a result, there is a pressing need to further explore the dynamics of regional innovation culture and its impact on corporate innovation, as well as to identify strategies that can help companies effectively leverage the benefits of a thriving innovation culture (Svarc et al., 2019).

In recent years, scholars have recognized the significant role of food culture and attempted to unveil the economic implications behind dietary practices. The research on tangible food culture involves the study of tea culture and alcohol culture (Du and Xiao, 2022; Li et al., 2016; Wang et al., 2023). Arising from cultural geography, food flavor profoundly influences individual behaviors and preferences both physiologically and psychologically, and has been integrated into the field of finance for the first time by Sun et al. (2022), revealing the link between food culture and sustainable corporate development. Furthermore, Sun et al. (2023a) have advanced the exploration of food culture, discovering the inclusive features behind dietary practices that play a crucial role in maintaining relationships between corporations and stakeholders.

In summary, existing research findings provide evidence of how culture impacts corporate activities within the real economy. When formal institutions are insufficient, culture may serve as the foundation of the economy. Perhaps, as advocated by Landes (2000), "if we learn anything from the history of economic development, it is that culture almost determines everything."

Review of religious culture

Religious culture: definition, quantification, and endogeneity solutions. The research on religious culture worldwide mainly focuses on Islam and Catholicism (Sabah et al., 2014), while studies related to China primarily concentrate on Buddhism and Taoism (Du, 2013, 2014). In academia, three main methods are used to measure the richness of religious culture within a region: the number of religious activity sites within a specific area, the proportion of believers to the total population, and the level of religious participation (Du, 2013; Hilary and Hui, 2009). To address the endogeneity issues in studies concerning Buddhism and Taoism, existing literature often utilizes the quantity of highly-rated scenic spots around an enterprise as instrumental variables (Du, 2013, 2014; Zhang et al., 2021). This choice is motivated by the tendency for temples and Daoist shrines to be located in scenic areas, leading to a richer religious culture in regions with more attractive natural landscapes. In addressing endogeneity issues related to Christianity and Islam, previous studies have also employed the dynamic system generalized method and differential model in an attempt to mitigate endogeneity (Cui et al., 2015; Zeng et al., 2018).

Research indicates that religious culture, as an important social norm (Damaraju and Makhija, 2018; Hafedh and Xu, 2022; Hyodo and Bolton, 2021; Williamson, 2000), plays a role in two aspects. On one hand, it shapes individuals' values, ideologies, and spiritual beliefs through doctrines, ethics, and morality. It encourages positive cultural characteristics such as honesty, diligence, altruism, friendship, tolerance, and forms implicit moral and ethical norms to constrain individual behavior, enhance interpersonal trust, promote rule-following, and foster risk-averse personality traits (Ben-Nasr and Ghouma, 2022; Du et al., 2014; McGuire et al., 2012), which is known as the belief-guiding mechanism of religion. Furthermore, religion also encompasses institutional constraints. Through its regulated organizational characteristics, church creeds, or social activities, it educates individuals to cultivate unified spiritual guidance and value beliefs. This deepens the connections between people, enhances teamwork, alleviates conflicts, and maintains social order and moral standards. This is referred to as the organizational effect of religion (Du, 2013; Du et al., 2014). Individuals influenced by religion exhibit integrity as their prominent explicit characteristic. However, this does not imply that this group of people has greater moral integrity than individuals without religious beliefs. It means that individuals with religious beliefs are more subject to moral constraints. The moral constraints brought about by religious beliefs mainly manifest in two aspects: the rejection of external deviant behavior and the mitigation of opportunistic thoughts within individuals. Regarding the aspect of rejecting external deviant behavior, religious traditions serve as "moral guideline indicators" (Du, 2013; McGuire et al., 2012). When individuals influenced by religious culture face behaviors that violate moral principles, they are more bound by moral constraints, thereby helping to suppress the probability of deviant behavior. Due to its doctrines and ideologies, religious culture purifies the soul and implicitly guides individuals to make decisions consistent with religious thoughts (Li, 2008), which imparts a strong religious color to business decision-making in reality. The impact of religious culture on corporate behavior and economic consequences is a highly discussed topic. This chapter reviews multiple articles and finds that religious beliefs have significant effects on various aspects of corporate decision-making, business ethics, agency costs, and risk-taking.

Religious culture and corporate governance. In terms of corporate governance, religious culture is mainly manifested in its ability to suppress unethical business behavior and establish a more normative moral belief system (Barnard and Mamabolo, 2022; Fathallah et al., 2020; Kavas et al., 2020; Grullon et al., 2009). For example, McGuire et al. (2012) verified that companies operating in regions with a prevalent religious culture are less likely to engage in financial reporting violations because religious beliefs inhibit unethical business behavior. Additionally, religious beliefs can influence managers' earnings management methods, reduce institutional conflicts, and improve corporate governance quality. Du et al. (2014) found a significant positive correlation between religious culture and charitable donations by Chinese listed companies, with a stronger effect observed among private enterprises. Besides, Shen and Su (2017) discovered that the religious beliefs of family business founders enhance the succession intention of the management team but do not necessarily increase ownership succession intentions. In China, Buddhist beliefs strengthen the religious inheritance relationships within Chinese family businesses.

Religious culture and corporate performance. Furthermore, in terms of corporate performance, El Ghoul et al. (2013) found that companies located in regions with a higher degree of religious beliefs enjoy lower equity financing costs. Additionally, the impact of religious beliefs on the cost of equity capital is greater when there is relatively weak regulatory oversight. Du (2013) discovered that Buddhist and Taoist cultures reduce agency costs for businesses by curbing managers' unethical business behavior, although this effect is diminished in companies with strong external monitoring mechanisms. Moreover, Callen and Fang (2015) pointed out that companies headquartered in regions with a higher degree of religious beliefs have a lower risk of future stock price collapses. This finding aligns with the notion that religion, as a social norm, helps restrain managers from withholding bad news. Jiang et al. (2015) found that family businesses with founders who have religious beliefs exhibit lower risk-taking tendencies, which is manifested in lower leverage ratios and less investment in fixed and intangible assets. Additionally, Ma et al. (2020) discovered that religion can mitigate cost stickiness resulting from managers' agency or behavioral biases by reducing their excessive confidence and optimistic biases regarding future demand changes. Hilary and Hui (2009) conducted research and found that in regions with higher religious beliefs, companies have lower risk exposure, lower investment rates, and slower growth. Furthermore, when executives leave a company to join another, they tend to prioritize joining a company with a similar religious environment to their previous one, confirming the impact of religious beliefs on corporate decision-making.

Overall, a significant amount of research has demonstrated the substantial impact of religious beliefs on corporate finance. These findings not only provide new insights and approaches for decision-makers in businesses but also validate the important role and influence of religious beliefs in the business domain.

Review of Confucian culture

Confucian culture: definition, quantification, and endogeneity solutions. Distinguished from religious culture, Confucian culture exhibits significant differences in many aspects. Firstly, religious culture typically involves the belief and worship of supernatural powers or deities (Purzycki et al., 2016; Whitehouse et al., 2019). For example, Christianity worships the God represented by Jesus, while Muslims worship Allah. In contrast, Confucian culture emphasizes morality, ethics, and social order, highlighting interpersonal relationships, personal cultivation, and social responsibility, rather than belief in deities or an afterlife (Du, 2015, 2016; Gu et al., 2022). Additionally, religious culture is typically propagated and interpreted by religious leaders or clergy, who organize religious rituals and activities for believers. Conversely, Confucian culture places greater emphasis on scholarly transmission and educational cultivation, with Confucian thought influencing people's behavior and values through the inheritance of classics, scholars, and societal norms. It can be said that Confucian culture is not considered a religious culture because its core ideas focus more on the ethics, morality, and governance of human society, rather than the belief in or reverence for supernatural powers or deities. Confucian culture resembles more a traditional system of values and behavioral norms, guiding society and individuals primarily through moral and ethical influence, rather than religious beliefs and rituals (Yan et al., 2021).

For a long time, individuals and organizations in China have widely regarded Confucian culture as their moral standard and made efforts to practice the embedded ideologies of "benevolence, righteousness, propriety, wisdom, and trust" emphasized in Confucianism (Ackerman et al., 2009; Chen et al., 2021; Du, 2015, 2016). Existing studies on Confucian culture commonly adopt the distance model (Du, 2015, 2016; Fan and Xu, 2022; Yan et al., 2021; Yu et al., 2021), which measures the presence of Confucian culture by the number of Confucian temples within a certain geographic scope where the company is located. The specific method for constructing this indicator involves searching for the names of surviving Confucian temples in different regions or using local chronicles and ancient books to identify the locations of ancient Confucian academies. Researchers further determine the coordinates (latitude and longitude) of the Confucian temples through relevant map search engines and calculate the distances based on these coordinates. In addition, some studies manually collect information regarding the birthplaces and hometowns of company directors to measure the influence of Confucian culture on corporate behavior by evaluating the Confucian cultural atmosphere associated with the directors' birthplaces and hometowns (Du, 2015, 2016; Tan and Wang, 2023).

To address the potential endogeneity issues between Confucian culture and corporate finance research, scholars typically employ location-related indicators and historical events as instrumental variables (Du, 2015, 2016; Gu et al., 2022). Representative location indicators include local transportation conditions, legal environment, cultural atmosphere, and educational level, all of which are closely linked to the inheritance of Confucian culture (Du, 2015, 2016). As for the selection of historical events, one prominent category involves choosing the death toll in various regions during the Taiping Rebellion period (Gu et al., 2022). The memory of the upheaval and atrocities from the rebellion has been passed down through generations, prompting residents in affected areas to prioritize stability emphasized in Confucian ideology and mitigate the adverse effects of negative events (Gu et al., 2022). Additionally, some studies use the quantity of renowned Confucian scholars in different regions of ancient China as instrumental variables (Gu et al., 2022. The rationale behind this is that these scholars were influential Confucian scholars during the ancient China, advocating their beliefs and values in their respective locales, and they are respected both in their time and today.

Confucian culture and corporate governance. In recent years, the influence of Confucian culture on corporate finance has been a topic of great interest in research exploring the impact of culture on business behavior. This chapter focuses on how Confucian culture influences corporate behavior. Yu et al. (2021) found a negative correlation between earnings management and the intensity of Confucian cultural influence in a region. This negative impact is particularly strong in companies with weak internal controls or located in areas with lower levels of marketization. This suggests that in regions with deep penetration of Confucian culture, companies prioritize public interest and have a stronger sense of social responsibility, while in highly marketized areas, companies may be more inclined to pursue short-term profits. Chao et al. (2023) revealed the positive impact of Confucian culture on environmental information disclosure, with heterogeneous effects observed in state-owned enterprises and high-pollution industries. Taoist culture and environmental regulation play a positive moderating role in this relationship. Furthermore, Du (2015) conducted research showing that Confucian thought can reduce the probability of agency conflicts between controlling shareholders and minority shareholders, thus reducing the expropriation of minority shareholders. Du (2016) also pointed out that companies with a strong Confucian cultural atmosphere have much lower proportions of female directors, highlighting the significant impact of the Confucian philosophical system on business ethics and the status of women in corporate governance.

Confucian culture and corporate performance. In terms of corporate performance, Chen et al. (2019) found that Confucian culture can significantly improve the investment efficiency of Chinese listed companies by reducing overinvestment and suppressing underinvestment. In addition, Chen et al. (2021) examined the relationship between Confucian culture, successor selection by leaders, and the performance of Chinese family firms. They found that founders of companies influenced by Confucian culture are more likely to choose family members or closely related non-family members as successors, and family/relationship-based successors have a positive impact on company performance. Moreover, Tan and Wang (2023) investigated how Confucian culture affects the cost of equity capital from an informal institutional perspective. They found that Confucian culture can reduce a company's cost of equity capital. The reduction is attributed to Confucian culture lowering information risk, business risk, and mitigating agency problems. Additionally, Ackerman et al. (2009) studied the influence of Confucian thought on consumer trust in government involvement in products and company brands. They found that consumers influenced by Confucian thought are more likely to consider government involvement in a company's products as favorable and exhibit a preference for their brands.

Based on the above research, it can be concluded that Confucian culture has a multifaceted impact on corporate behavior and economic consequences. Its traditional values play an important role in corporate governance, cash management, charitable donations, investment, successor selection, and other aspects. However, this influence is not static and is subject to external environmental factors and specific conditions. Therefore, in practice, it is crucial to fully consider the characteristics and advantages of Confucian culture and combine them with laws, regulations, and ethical norms to promote sustainable development of companies.

Recent research suggests that even when humans migrate to another country, culture continues to exert a lasting influence on them (Guiso et al., 2006; Sun et al., 2023b). With the advancement of economic globalization, an increasing number of businesses are engaging in international cooperation, leading to more frequent movement of talent across borders. Given China's large population, a significant number of Chinese individuals are settling in various countries around the world, thereby influencing the spread of traditional Confucian culture on a global scale. However, there is limited scholarly attention to how this pan-Asian culture of Confucianism impacts social and economic development in non-Asian regions, presenting an area of focus for future research.

Review of social trust

Social trust: definition, quantification, and endogeneity solutions. Social trust is primarily manifested in the dimension of social capital, emphasizing the cooperative behavior that arises between strangers based on trust. In regions with higher levels of social trust, individuals are more likely to let down their guard and engage in deep interactions based on geographic trust characteristics. Specifically, in interactions between strangers or in unfamiliar environments, social trust can inhibit the likelihood of fraudulent behavior. Trust facilitates the formation of expectations of integrity and commitment among partners and reduces the likelihood of uncertainties occurring between collaborators, thereby enhancing the success rate of business cooperation (Bhagwat and Liu, 2020; Lins et al., 2017).

Typically, the measurement of social trust relies on constructing indicators based on survey data (Guiso et al., 2004; Guiso et al., 2006; Kanagaretnam et al., 2018). Researchers often pose questions such as "Do you trust people around you?" to respondents in a given area and further quantify the local level of social trust. In order to address endogeneity issues in research on social trust, researchers commonly use local racial (or linguistic) diversity or blood donation rates as instrumental variables (Guiso et al., 2004; Guiso et al., 2006; Kanagaretnam et al., 2018). The former stems from people's innate tendency to trust individuals of the same race (or language) more than those from different groups, hence, areas with greater racial diversity may exhibit lower levels of trust. Blood donation rates are directly associated with levels of trust, as individuals are inherently less likely to donate blood in environments where trust is lacking. Therefore, higher blood donation rates in an area may serve as evidence of higher levels of social trust in that locality.

Social trust and corporate governance. A large body of research on the relationship between social trust and corporate governance focuses on exploring corporate social responsibility (CSR). Chen and Wan (2020) found a positive correlation between social trust and CSR. As a social normative force, social trust helps business managers maintain the interests of stakeholders by engaging in socially responsible activities. However, Zhang et al. (2023) proposed a contrasting viewpoint. They believe that social trust can substitute for trust at the corporate level and negatively affect the willingness of companies to undertake social responsibility. This contradictory view provides further research inspiration on how social trust influences business ethics. Moreover, many scholars have pointed out that social trust can inhibit companies from engaging in governance misconduct (Dong et al., 2018). For example, Kanagaretnam et al. (2018) found that social trust can complement legal systems, playing a more significant role in curbing corporate misconduct, such as tax avoidance, when legal systems are less robust. Besides, Guan et al. (2020) confirmed that higher levels of social trust lead to greater voluntary disclosure and more accurate profit forecasts by companies, and investors are more inclined to believe the disclosed information. This positively contributes to the healthy development of the capital market.

Social trust and corporate performance. This section primarily introduces existing research on the relationship between social trust and firm performance. Li et al. (2017) found that companies headquartered in regions with higher levels of social trust have a lower risk of stock price collapse. This result is particularly evident for state-owned enterprises, companies with weak monitoring, and companies with higher risk exposure. Lins et al. (2017) also pointed out that companies with higher social capital experience higher stock returns during financial crises compared to those with lower social capital. This suggests that when trust levels between companies and their stakeholders and investors encounter negative externalities in terms of trust in the company and social environment, the trust established through social capital investment yields returns. Besides, Berglund and Kang (2013) revealed that social trust influences companies' external audits, as evidenced by firms in areas with higher social trust paying lower audit fees. Furthermore, Kuo et al. (2023) found that social trust reduces the demand for audit quality by mitigating agency problems. In addition, the study of Meng et al. (2021)

indicates that higher trust levels can alleviate information asymmetry, reduce monitoring and transaction costs, ease financial constraints, and thus incentivize innovation within companies.

In sum, social trust has a multifaceted impact on businesses. In a highly competitive market, companies need to establish good social trust relationships. This not only helps them acquire resources and financing but also instills trust in investors regarding the company's stock price and returns, thereby creating greater value for the company. Therefore, businesses should fully consider the influence of social trust when formulating strategies and managing their operations, and take measures based on the specific circumstances they face.

Review of gambling culture

Gambling culture: definition, quantification, and endogeneity solutions. Existing research has shown that the explicit cultural characteristics inherent in gambling culture mainly manifest in the local individuals' and groups' perception and preference for risk (Blau and Whitby, 2020; Matama et al., 2020). Individuals who prefer gambling activities are more likely to possess strong personality traits inclined towards risk-taking. This group tends to be overly optimistic and believes in their own good luck when facing uncertainty, which further strengthens their inclination towards risk-taking (Rogers and Webley, 2001; Spurrier and Blaszczynski, 2014; Spurrier et al., 2015). Particularly in China, the influence of gambling culture is more prominent and may be related to the impact of traditional hierarchical orders and superstitious beliefs (Ji et al., 2021), leading some individuals to attribute personal or business success to destiny. The strong gambling culture within a region is reflected in the management, employees, and internal and external stakeholders of companies, further influencing the business decisions with distinct regional gambling styles.

Recent literature often uses indicators such as per capita lottery sales or Catholics-to-Protestants ratio to measure regional gambling culture (Alharbi et al., 2022; Alharbi et al., 2023; Ji et al., 2021). The instrumental variables commonly used to alleviate endogeneity in gambling culture generally fall into two categories: the average elevation of the area and the number of pawnshops in the locality (Ji et al., 2021). The choice of average elevation as an instrumental variable is based on the premise that high local altitudes lead to inconvenient transportation (Sun et al., 2023b), thereby causing a lack of entertainment activities for the local residents, which in turn inclines them towards engaging in gambling activities within their communities. On the other hand, the prevalence of pawnshops in the area can provide ample funds for gambling activities through lending (Ji et al., 2021).

Gambling culture and corporate governance. In recent years, scholars have extensively explored and researched the relationship between gambling culture and corporate governance. These studies have utilized various methods and perspectives to delve into the mechanisms and effects of gambling culture on corporate innovation behavior. Some research suggests that gambling culture can enhance a company's risk-taking capacity and willingness to innovate, thereby promoting innovation inputs and outputs. For example, Chen et al. (2014) found that companies located in areas with a strong gambling culture are more willing to take on higher-risk innovation projects, invest more funds and energy in innovation, and achieve greater innovation outputs. Research by Adhikari and Agrawal (2016) indicates that a more pronounced gambling atmosphere within a region stimulates corporate innovation, leading to increased investment in research and development and obtaining a greater quantity and quality of patents. Some scholars have also focused on the relationship between gambling and investment, demonstrating that the local gambling culture can encourage corporate financial asset investment by influencing managers' risk-taking behavior and the risk preferences of local investors (Xue et al., 2023). Moreover, the research of Chen et al. (2023) confirms the negative impact of gambling culture on companies. Specifically, the local gambling culture increases the likelihood of corporate misconduct through its influence on accounting conservatism and the geographical diversification of investments. However, proactive government efforts to combat gambling activities can mitigate these negative effects. Alharbi et al. (2022) and Alharbi et al. (2023) have also reached similar conclusions, indicating that gambling culture drives companies to engage in riskier governance practices, reflected in their tendency towards more proactive tax avoidance behavior and earnings management.

Gambling culture and corporate performance. In the term of corporate performance, Ji et al. (2021) explored the link between gambling culture and steep declines in company stock prices. They found that companies located in regions with a prevalent gambling culture experience greater risks of steep stock price declines. However, the heightened level of supervision by internal and external stakeholders can mitigate the negative impact of the gambling culture. Besides, Xie et al. (2023) have pointed out that a stronger gambling atmosphere leads to higher bond yield spreads for companies, particularly those with higher operating volatility and default risk. Furthermore, Lin et al. (2022) found that gambling culture can lead to excessive corporate investment, ultimately resulting in reduced investment efficiency. The specific mechanism is reflected in its impact on corporate agency costs and risk-taking levels.

In general, it should be noted that the relationship between gambling culture and corporate finance is complex and heterogeneous. Research indicates that gambling culture can either have positive impacts on companies, such as promoting innovation, or inhibit their sustainable development, for instance by increasing the likelihood of sharp declines in stock prices. Therefore, it is an urgent task for government authorities to properly guide local gambling culture to promote corporate development.

Innovation culture and corporate finance

Innovation culture: definition, quantification, and endogeneity solutions. Regional innovation culture refers to the cultural factors such as values, behavioral norms, and social identification that shape innovation in a specific geographical area. This culture can influence the willingness, capabilities, and behaviors of entrepreneurs and innovators within that region (Burrus et al., 2018). Some regions may exhibit open cultural characteristics, which tend to encourage innovation and entrepreneurial activities among local businesses. These regions often provide favorable policies and resources to support innovation and entrepreneurship, thereby fostering their development (Varsakelis, 2001; Vedova et al., 2023). On the contrary, some regions may display more conservative cultural traits and lack supportive policies and resources for innovation and entrepreneurship, thereby hindering local innovation and entrepreneurial activities (Chinitz, 1961; Choi et al., 2019; Noh and Cho, 2017). Therefore, regional innovation culture is often regarded as one of the key factors influencing the development of the innovation and entrepreneurship ecosystem and local economic growth (Cooke et al., 1997; Li, 2009). Indicators commonly used to measure regional innovation culture include the number of local patents and the proportion of technical personnel in the total population (Burrus et al., 2018). To alleviate the endogeneity of regional innovation culture's impact on a company's financial status, relevant studies have employed the complexity of regional topography as an instrumental variable for testing. The rationale behind this approach is that different topographies can affect population concentration within regions, thereby influencing the formation of innovation atmosphere in the area (Carlino et al., 2007; Wang and Huang, 2022).

Innovation culture and corporate governance. The impact of regional innovation culture on corporate governance is mainly reflected in its influence on corporate innovative behavior, which is often observed to be positively correlated. Sternberg and Arndt (2001) highlighted the positive influence of regional innovation culture on corporate innovative behaviors, which is further enhanced when firms possess additional determinants of innovation. Furthermore, the innovative behaviors of small enterprises are likely to be more influenced by local innovation culture compared to larger corporations. Romero-Martínez and Ortiz-de-Urbina-Criado (2011) empirically demonstrated, using a sample of Spanish companies, that regional innovation culture can enhance corporate innovative capacity. Moreover, regions with a thriving innovation culture tend to attract external companies to join the area, thereby stimulating these firms to engage in further innovation. Naz et al. (2015), based on a sample of German enterprises, found that regional innovation culture plays a positive and stimulating role in firms' innovation behaviors. Additionally, they observed that the influence of culture varies depending on factors such as firm size, age, and R&D intensity. In addition, corporate internal entrepreneurial activities may further impact regional innovation culture. Evidence provided by van Egeraat and Curran (2022) suggests that internal entrepreneurial activities can stimulate local innovation atmosphere and economic development by enhancing corporate performance and establishing new ventures.

Innovation culture and corporate performance. Burrus et al. (2018) found that regional innovation culture has the potential to enhance firm performance and facilitate behaviors such as reinvestment and sustainable growth. This is manifested through increased revenues, profits, and improved production technologies within the company. For small firms with limited access to global innovative resources, the relationship between innovation culture and firm performance becomes even more significant. Szerb et al. (2019) categorized the innovation and entrepreneurial environment into quantitative and qualitative aspects. They empirically tested the impact of these environments on regional performance using a sample of 121 EU regions and found that the quantitative aspects of innovation and entrepreneurship within a region had a negative effect on performance, while the qualitative aspects of innovation and entrepreneurship had a positive effect on performance. Additionally, establishing strong collaborative relationships with high-performing companies can further drive corporate innovative performance (Turkina et al., 2019). Furthermore, Tojeiro-Rivero and Moreno (2019) pointed out that regional innovation culture not only influences corporate innovation performance but also has an impact on the performance of their networking activities. Moreover, this influence is particularly advantageous for companies located in knowledge-intensive regions.

Food culture, cultural inclusion, and corporate finance

Food culture and cultural inclusion: definition, quantification, and endogeneity solutions. Food culture is a significant branch of cultural geography, and in recent years, academic research has also started to focus on the impact of regional food culture on businesses. As an essential and frequent activity in our daily lives, food plays a crucial role in the development of human society and interactions between people and the environment. Food not only provides energy for our continuous physiological activities but also leaves its regional characteristics imprinted on individuals through attitudes and concepts related to food, becoming an indispensable part of personal identity (Chang et al., 2010). Furthermore, it has an indelible influence on the operational development of businesses (Sun et al., 2022).

There are three main types of research paradigms in existing literature on the relationship between food culture and corporate finance. The first type of food culture research involves directly studying the impact of tangible food on businesses, such as researching tea culture and alcohol culture. Tea culture embodies peaceful, elegant, and harmonious cultural characteristics that can guide individuals to develop peaceful, harmonious, and refined personality traits, thereby subtly affecting individual behavior and corporate operations (Du and Xiao, 2022). The deeper the influence of tea culture on a company due to its location, the more positive governance effects the peaceful, elegant, and noble personality traits conveyed by tea culture can have. This type of research often uses data such as regional tea production, planting, and sales to quantify the tea culture atmosphere in the location of listed companies (Du and Xiao, 2022). Regarding endogeneity of tea culture, the average slope of the region is often used as an instrumental variable for endogeneity testing. The principle is that tea trees mostly grow on warm and semi-humid mountaintops, and thus the slope where tea trees are located can well explain tea planting-related conditions. The greater the average slope of the region, the higher the tea production (Qian, 2008).

Another tangible food culture is alcohol culture. In social settings, drinking promotes information exchange and enhances social relationships, playing an important role in various important social occasions with strong social attributes (Wang et al., 2023). Therefore, alcohol culture is often endowed with multiple functions such as economic negotiation, business dealings, and emotional connection, and toasting at the table facilitates economic exchanges and relationship building (Li et al., 2016). In other words, the cultural characteristics represented by alcohol culture are a connection of social relationships, and the interpersonal relationships established through alcohol culture are more likely to lead to exchange of interests and redistribution of resources. Furthermore, in the process of integrating into social norms, drinking is intertwined with behavior concepts such as relationship building, business negotiation, political protection, resource acquisition, and social authority, affecting economic activities and social life, and even changing people's values (Cochrane et al., 2003; Gordon et al., 2012; Zhou et al., 2018). In China, the culture of alcohol has a rich and ancient history deeply rooted in Chinese society, making it an integral part of the country's historical and social fabric. In contrast to other nations, the symbolism of social bonding behind the alcohol culture is particularly pronounced in China, a society known for its emphasis on interpersonal relationships (Cheng et al., 2023; Li et al., 2016; Wang et al., 2023; Zhou et al., 2018). This distinct feature has led to a prevalence of research centered around Chinese settings when studying the intersection of alcohol culture within the field of finance. The measurement of alcohol culture usually involves two indicators: the proportion of per capita annual average alcohol consumption expenditure of urban residents in the region to per capita disposable income of urban residents and regional white wine production (Cheng et al., 2023; Li et al., 2016; Wang et al., 2023). Average temperature, latitude, and extreme weather conditions in different regions are typically used as instrumental variables to alleviate endogeneity concerns about alcohol culture. This is because alcohol consumption levels are related to temperature, and factors such as weather conditions under different latitudes directly influence local alcohol consumption levels. In addition, the occurrence of extreme weather not only limits local residents' outdoor activities and affects local production and business activities but also often accompanies changes in local temperature, greatly affecting the brewing and production process of alcoholic beverages (Cheng et al., 2023; Li et al., 2016; Wang et al., 2023).

The second type is focused on studying the direct impact of food flavor on businesses. This involves quantifying food culture by examining its taste. One specific approach is to use textual analysis of recipe data to quantify the taste of culinary styles (Sun et al., 2023b). The prominent study in this area is conducted by Sun et al. (2022). They primarily examine the spicy food culture within culinary practices. By exploring the metaphorical meaning of spicy food and the physiological effects of capsaicin, they uncover the role of spicy food culture in guiding individuals to develop proactive personality traits and fostering positive emotions from both psychological and physiological perspectives. These factors are ultimately reflected in proactive management behaviors within companies. The researchers employ the duration of sunlight as an instrumental variable to measure spicy food culture. Regions with less sunlight tend to exhibit more humid and colder geographical features, leading the local population to rely on spicy food to combat cold weather, thus forming a rich spicy food culture in those areas.

The third type of research paradigm is based on the significant significance of food culture in maintaining interpersonal relationships, representing local cultural connotations, and promoting local economic development. It has developed a study on cultural inclusion based on food for corporate behavior (Sun et al., 2023a, 2023b). Specifically, food culture is a product of human interaction with nature, a bond of social relationships, and a carrier of local culture and emotions (Cappellini and Yen, 2013; Chang et al., 2010; Lo Monaco and Bonetto, 2019). It influences group's sense of local identity and attachment to the locality in many aspects (Cappellini and Yen, 2013; Chuck et al., 2017; Cross and Gilly, 2014; Kikon, 2021). Consequently, the inclusiveness of food culture becomes a good proxy for cultural inclusion (Cook, 2006, 2008; Cook et al., 2011; Sun et al., 2023b). Sun et al. (2023a) and Sun et al. (2023b) define the concept of cultural inclusion as the extent to which individuals can feel the acceptance of their location and further utilized textual analysis to construct a deviation index for food taste preferences as a measure of cultural inclusion. Their instrumental variable is the topographic relief, as historically, regions with more complex topography are more likely to be divided into distinct and independent areas geographically, reducing communication among local groups and thereby inhibiting the development of cultural inclusion.

Food culture and corporate governance. Regarding the research on food culture and corporate governance, existing literature has mainly focused on specific types of culture, such as tea culture and alcohol culture. Du and Xiao (2022) explored the relationship between regional tea culture and corporate earnings management, finding that a more significant tea culture atmosphere could suppress corporate earnings management behavior and improve the quality of financial reporting. However, the influence of tea culture is more of a complement to formal institutions, as strong external regulations weaken the inhibitory effect of tea culture on corporate misconduct.

On the contrary, alcohol culture has a positive guiding role in corporate earnings management behavior (Li et al., 2016). Guo et al. (2023) revealed the positive impact of alcohol culture on corporate risk-taking, with the mechanism being that alcohol culture guides the formation of social networks and a social environment of trust. Wang et al. (2023) further verified that a stronger alcohol culture in the location of a company significantly enhances the CEO's social network, thereby exerting profound influence on the construction of the CEO's social capital and behavior. A common point disclosed in the literature is that more sound formal institutions (such as legal systems) in a locality can weaken the negative impact of alcohol culture.

Food culture and corporate performance. Research on the impact of concrete types of food culture on firm performance primarily focuses on alcohol culture. Cheng et al. (2023) examined the influence of regional alcohol culture from the perspective of stock price collapse risk and found that regions with a prevalent alcohol culture tend to have higher risks of stock price collapse for listed companies. The mechanism behind the role of alcohol culture is validated by its impact on reducing the quality of production efficiency information disclosure for listed companies. However, the negative effects of alcohol culture can be effectively mitigated by the attention from institutional investors and analysts, as well as the development of more sound legal institutions at the local level. Shen et al. (2023) indicated that alcohol culture can improve a firm's financial performance but may have adverse long-term effects on its innovation capabilities.

Moreover, Sun et al. (2022) focused on the influence of spicy food culture on corporate sustainable development. They found that in regions with a strong spicy food culture, companies exhibited higher total factor productivity. This influence was particularly significant in large enterprises, state-owned enterprises, and export-oriented enterprises. Furthermore, the presence of a strong spicy food culture in a region led to increased equity incentive behavior and intensity, as well as a higher proportion of female executives in regional businesses. These mechanisms significantly enhanced overall productivity. Instrumental variable tests using sunshine hours validated the causal relationship between spicy food culture and corporate sustainable development.

Cultural inclusion and corporate governance. Sun et al. (2023a) found that companies located in areas with higher cultural inclusion tend to undertake more CSR, and this phenomenon is more pronounced in state-owned enterprises, large enterprises and enterprises with higher proportion of independent directors. Additionally, cultural inclusion primarily influences CSR by promoting "gender equality" and suppressing "power disparity" perceptions. These findings reveal the influence of cultural inclusion on corporate governance and contribute to exploring informal institutional factors in the dimension of geoculture that affect CSR.

Cultural inclusion and corporate performance. Sun et al. (2023b) found that cultural inclusion varied across different regions in China, leading to imbalanced sustainable development among companies in different areas. The study suggested that higher cultural inclusion in the hometowns of senior executives significantly improved corporate sustainability, indicating that executives can leverage their leadership to promote inclusive cultural characteristics in society. Moreover, local cultural inclusion also inspires indigenous enterprises to demonstrate more care towards their employees, thereby motivating them to contribute to the sustainable development of the company.

In summary, these studies have demonstrated the impact of food culture on corporate behavior and have explored the heterogeneity of this influence through regional and industry differences. Furthermore, these studies have used food culture as a measure of cultural inclusion, emphasizing the importance of cultural inclusion for corporate behavior. They provide a new perspective for analyzing the informal institutional factors behind the sustainable development of businesses in different regions, and contribute to promoting regional economic sustainability and informing policy-making.

Discussion and future outlook

Existing literature has provided extensive discussions on the intersection of regional culture and corporate finance based on institutional economics theory. However, overall, the study of culture and corporate finance is still an emerging and cutting-edge research field, with many topics that warrant further exploration. There are areas for improvement in the current literature when it comes to investigating how regional culture influences corporate finance.

One major challenge in the interdisciplinary research on culture and finance is how to quantify culture. Currently, scholars have attempted to measure culture from multiple dimensions and different perspectives, but more refined and accurate measurement methods are still needed. For example, the measurement of gambling culture often relies on local lottery sales, but this approach may not capture the subtle nuances and underlying connotations of gambling culture. Therefore, future research could seek to examine culture at a more micro level, such as the county or district level, to better understand and depict the local cultural characteristics and traditions. With the continuous development and application of digital technology, some scholars have started exploring the use of big data techniques to measure culture. By collecting and analyzing data such as text, voice, and images from the internet, and utilizing technologies like natural language processing and machine learning for analysis and mining, it is possible to more accurately assess various aspects of local culture. This can better serve the financial market and consumers, providing a promising direction for research on the intersection of culture and finance.

Additionally, the current research lacks exploration into the continuity and transmission of the relationship between culture, corporate governance, and corporate performance. Few scholars have been able to comprehensively consider a specific cultural factor in relation to corporate governance and corporate performance, and establish a complete systematic mechanism chain. It is precisely because of this gap that it is difficult to gain a comprehensive understanding of how culture influences corporate decision-making behavior and its subsequent economic effects. Therefore, there is a need for in-depth research on the relationship between culture, corporate governance, and corporate performance, and the establishment of a comprehensive research framework that is continuous and inheritable, in order to better understand the impact of culture on corporations. In this regard, it is possible to explore the influence of culture on corporations from multiple perspectives such as history, values, and social networks. Through methods like communication, surveys, and statistics, a relationship chain can be established between culture, corporate governance, and corporate performance. These research findings can contribute to the construction of a more complete, authentic, and reliable systematic transmission mechanism chain, helping the academic and practical communities to better understand the impact of culture on corporations.

In terms of endogeneity handling, although the academic community has shown increasing attention to the endogeneity issue of regional culture on corporate finance in recent years, there is still a lack of diverse approaches to address endogeneity. Specifically, there is a common tendency to rely on single instrumental variable methods while the use of multiple methodologies is relatively rare, resulting in some controversy over the robustness of conclusions. The use of a single instrumental variable method often fails to comprehensively assess and reflect the overall impact of cultural factors on corporate finance when addressing the endogeneity issue of regional culture on corporate finance. On the other hand, diverse methodologies and models can better consider the complex interactions between cultural factors and other variables, and more accurately reveal the mechanism through which culture affects corporate finance. Therefore, future research can explore different research methods and models, adopting multiple perspectives and dimensions to establish a more comprehensive and diversified research framework. For example, historical evolution, values, social networks, and other perspectives should be employed to investigate the mechanisms of cultural influence. Econometric analysis, system dynamics, and other analytical tools can be used for empirical research, aiming to develop more comprehensive, accurate, and robust solutions for addressing endogeneity.

Data availability

This paper does not require the disclosure of data as it is a literature review that does not utilize any data.

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LM: conceptualization, software, investigation, and writing—review and editing, project administration, funding acquisition and supervision. CL: conceptualization, software, investigation, and writing—review and editing, project administration, funding acquisition and supervision. GS: conceptualization, methodology, software, validation, formal analysis, investigation, data curation, writing—original draft preparation, writing—review and editing, project administration, funding acquisition and supervision. CZ: investigation, and writing—review and editing, project administration, funding acquisition and supervision. CG: investigation, and writing—review and editing, project administration, funding acquisition and supervision.

Competing interests

The authors declare no competing interests.

Ethical approval

This study does not involve content requiring ethical approval.

Informed consent

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