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When Polanyi Met Schumpeter: Social Trust and Entrepreneurship

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This research identifies the causality between entrepreneurial behaviour and informal institutions of social trust within the context of China's development. Revisiting the Polanyi-Schumpeter theoretical framework, entrepreneurship embedded in social relations interlinked by trust is a dynamo of sustainable socioeconomic progress. The institutionalised trust, however, was not clarified. With micro-individual data from the Chinese General Social Survey 2011–2021, our research employs the historical instrumental variable approach rooted in rice civilisation to tackle endogeneity. The results illustrate that social trust elevates entrepreneurial engagement by 32.65 and 10.37 percentage points in self-employment and business incorporation, respectively. Increased trust paradoxically hampers self-employment in the central due to insular networks and structured disparities. The findings indicate the nuanced role of social trust in facilitating and constraining entrepreneurship and its regionally contextual determinants. The research contributes to the knowledge and evidence of institutional endowments that mediate entrepreneurial agency and argues for synchronising formal and informal institutions in development.

Keywords: trust; entrepreneurship; social relation; informal institution; development

1. Introduction

Do you believe in the power of institutions? Acemoglu, Johnson, and Robinson, who won the 2024 Nobel Memorial Prize for studies of the institutional impact on economic development, believe (Acemoglu et al., 2001; Acemoglu & Robinson, 2012). Within the impact are diverse informal institutions of social relations (Khan, 2010; Gray, 2018). Besides, innovative entrepreneurship constitutes a dynamo of economic development (Schumpeter, 1980). Nevertheless, concerning the contemporary neoliberal market economy, the role of social institutions in entrepreneurial innovation is ambiguous. A skeptic can disbelieve and eliminate the diverse informal social institutions from formal inclusive institutions in entrepreneurship studies. If so, alarmingly, the rampant expansion of the formal market economy will, in turn, destroy our trustable society and community-minded entrepreneurship (Polanyi, 2001). Ergo, taking China's case of social trust, our research aims to clarify the causality between informal institutions and entrepreneurial ventures, revisiting Polanyian social relations and Schumpeterian entrepreneurship.

A revisit of the intellectual dialogue between Polanyi and Schumpeter is crucial in reclarifying the institutionalised social relations and entrepreneurship in the market society. Previous studies of Polanyi and Schumpeter propose insights into market mechanisms in capitalist economy (Harvey & Metcalfe, 2004), the governance and social implications of technology (Randles et al., 2008), the state in the knowledge economy (Harvey & McMeekin, 2013), capitalist crisis (Delanty, 2022), and societal transitions (Hager et al., 2022). However, the causal clarification remains meagerly articulated in the available literature, as systematic empirical work considering the theoretical convergence and divergence between Polanyi and Schumpeter are conspicuously absent—similar to trust, many relational variables are rarely econometrically scrutinised. Consequently, clarifying the convergence and divergence is a foundation followed by necessary evidence-based investigation.

Polanyi and Schumpeter share a subtle consensus regarding the historical dynamics of capitalist transitions—a self-regulating or static equilibrium market is a utopian fantasy (Hager et al., 2022). Polanyi, a critic of market fundamentalism, advocates that unregulated market expansion implies social fragmentation and atomisation, precipitating impropriety,

distrust, and authoritarianism. Unrestrained fragmentation inherent in self-regulation will ultimately undermine the market's capacity for sustainable expansion (Dale, 2010; Delanty, 2022). Polanyi (2001) argues that markets are not spontaneous constructs; rather, society is. The market economy and accompanying formal institutions must be society-embedded and constrained by informal institutions of social relations. If not, they will destabilise social structures. That resembles Schumpeter's inference that capitalism destroys itself when it is too rampant (Szelényi & Mihályi, 2021). On the other hand, Schumpeter (1980) maintains that the market is the navigator of social progress and the foundation for innovative economic growth. Devoid of the market, the very promise of economic progress disintegrates. Yet compared with Polanyi, although it acknowledges the necessity of institutional support, the focus on progress may risk succumbing to econocentrism, downplaying social structures interlinked by trust (Özveren, 2007). Accordingly, the dynamic society-economy interplay necessitates incorporating the theoretical interlinkage of society and humanity to augment the deductive and inductive capabilities of economic science (Randles et al., 2008; Hagemann, 2014).

Therefore, our research integrates into the Polanyi-Schumpeter theoretical framework. Entrepreneurship to identify and exploit opportunities is not merely contingent on individual agency but embedded in social institutions where it functions (Schumpeter, 1980; Shane & Venkataraman, 2000; Ulhøi, 2005). Theoretically, initial economic dynamics raise social, political, and cultural shifts that change social structures of institutionalised relations, including trust. Reciprocally, the changes exert a structural influence on the agency of economic actors in action subsequently (Hager et al., 2022; Xu, 2024). For instance, economic initiatives cause shifts in trust—then resource accessibility and risk resiliency—and eventually alter individual entrepreneurial intent and capabilities. As structured institutional shifts reconfigure extant rules of society, such reconfiguration may catalyse or restrain entrepreneurial innovation and economic vibrancy (Randles et al., 2008; Hager et al., 2022). The dynamics uncover the symbiotic relationship between individuals and institutions, wherein social structures simultaneously enable and constrain economic actors. Namely, social trust is a structure; it circularly determines the (dis)order of transaction and cooperation: facilitating economic activities, disrupting existing structures, and creating opportunities for

future activities (Buonanno et al., 2024). Ultimately, this cycle propels progress in socioeconomic domains, unveiling the interplay between institutionalised relations and entrepreneurship.

Empirically, using trust as the manifestation of informal institutions, our research fills the knowledge gap by investigating the impact of social trust on entrepreneurial engagement, reflecting the socialisation of entrepreneurship. Our evidence centres on China's economy in the 2010s, a slowing-down development stage, transitioning from its earlier pattern of prompt growth—property consumption, infrastructure investment, and dumping exports—to an innovation-driven development (Shane & Venkataraman, 2000; Zilibotti, 2017). It is the most salient case of an emerging economy shifting development stages in the early twenty-first century. Moreover, emerging China possesses intricate informal institutional endowments such as relational trust, exhibiting similarities to Japan, Singapore, and South Korea yet diverse from some in Europe and America. Today, initial different endowments across states are converging along the global neoliberalism-formalised norms and trajectories when innovative entrepreneurship is recognised as an engine of economic sustainability. In this context, grasping region-specific institutionalised relations like trust delivers a comparable reference for Global South and a reflection on the market society (Polanyi, 2001; Khlystova et al., 2022).

Our investigation reveals that increased social trust can elevate individual entrepreneurial engagement. To causally identify the effects of the subjective sense of trust on objective entrepreneurial status, it instruments China's rice civilisation regions. Specifically, the instrument differentiates regions into historical rice-granary areas during the Tang–Song and Ming–Qing eras. The instrumental approach indicates a positive causal identification between trust and entrepreneurship. Then, the spatial institutional heterogeneity motivates our extensions to examine the regionally nuanced effects of trust. An adverse sign is observed in Central China, where exaggerated trust hinders entrepreneurship. This finding resonates with that excessive trust can imply routine, immobility, and certainty stifling innovation (Randles et al., 2008; Hager et al., 2022). The divergence in regional effects spotlights the multifaceted real-world informal institutions and nuanced interplay between trust and economic behaviour.

Our findings disagree on certain established conclusions. Bennett and Nikolaev (2020) summarised that individualistic cultural values as pro-market norms and institutions are decisive in innovative development. However, those informal institutions inherited from pre-market societies, such as collectivist values, are neglected. Bennett and Nikolaev also discuss that their cross-sectional data spanning 84 countries might inevitably miss the nuanced real-world agency of individuals. First, given individual agency in the capitalist business cycle, analysing capitalist economy is never divorced from dynamic disequilibrium (Hagemann, 2014; Delanty, 2022). Schumpeter, while acknowledging that static utility maximisation explains the motivation of economic activities, argues that when pondering dynamic development, business motives and entrepreneurship are irrational—socially embedded and Polanyian relational. Prudently, our research aims not to refute pro-market institutions and individualistic values within capitalism but instead offer a micro-level data-based investigation like Jia et al. (2021), inspiring inclusive reflections and diverse insights. Second, though pro-market institutions and individualism indeed facilitate business innovation, they are not a panacea for all market actors. On the contrary, society, social trust, and collectivism play a role. Tenuously evincing that economic agents are intrinsic in social environments is fragile; a pressing urgency is to articulate solid evidence and validate the theoretical framework, illustrating how economic activities socialise (Ulhøi, 2005; Gemici, 2008).

The remainder is structured as follows. Section 2 is the background setting. Section 3 delineates the theoretical, conceptual, and real-world contexts integrated with data selection. Section 4 reports the empirical strategy and results, followed by robustness checks and heterogeneity extensions. Section 5 reflects on the findings in a dialogue with the literature, and Section 6 concludes with our summary and implications.

2. Background

Entrepreneurship invigorates innovative transformation through creative destruction and construction (Schumpeter, 1980; Audretsch et al., 2006) of vital relevance to contemporary China. Entrepreneurial spirit necessitates the destruction of the irreproducible growth pattern

and innovates a timely prospect. Within socioeconomic transformation, intertwined formal and informal institutions—norms, values, and attitudes—determine the entrepreneurial agency and structure. The informal institutions, informally institutionalised social relations, particularly facilitate or hinder resource accessibility and flexibility, mirroring the structural impact on entrepreneurial behaviour and development.

Over decades of investment, consumption, and exports, China's transformation into the world's second-largest economy was embodied in meteoric urban industrialisation (Song et al., 2011; Zilibotti, 2017). However, our research argues that this growth pattern encounters pressing challenges. Especially, state-financed industrialisation was never divorced from land and property (Xiong, 2023). In detail, 'land-property finance' denotes artificially inflating an astronomical housing price to raise money from individual savings and (re)invest in massive infrastructure construction. On the other hand, this pattern realised the China Miracle, a GDP prosperity, whereas overreliance on land-property finance inevitably strained sustainability when investment declines without land and property in demand. Concerning the housing market, decisive real estate consumption—once buoyed by urbanisation—shrinks when households with high mortgages suffer from socio-financial constraints. In this case, entrepreneurship uncovers its dynamo role in socioeconomic sustainability.

Entrepreneurship ought to be, and must be, an alternative dynamo. Entrepreneurship reallocates resources to their most resilient and sustainable usage (Schumpeter, 1980; Acs & Audretsch, 1988; Audretsch et al., 2006). The innovative usage is to responsibly substitute irreproducible growth policy, create corresponding employment, enhance productivity, and diversify China's economic structure. Specifically, entrepreneurship can identify promising comparative edges and sources of sustainable development. Exercising entrepreneurial agency and competing in markets and non-markets will promote visible advantages and bolster social production. Entrepreneurial development in China comes with its neoliberal reforms since 1978. The reforms constitute China's transition to a market society, an institutional environment to set off entrepreneurial activities. Gradually integrated into the global economy after the 1980s, China, leveraging its vast market of a billion-size population and the abundant labour supply, objectively stimulated market-oriented entrepreneurship in exchange for foreign investment and technology. Unconcealed pro-trade macroeconomic and

privatisation reforms since 1994 constituted China's primitive capitalist accumulation (Lin, 2011). Afterwards, the rise of the internet economy in the 2000s, the 2010s boom in mobile interest, and the 'mass entrepreneurship and innovation' initiative launched in 2015 all soldiered on facilitating entrepreneurship as an indispensable dynamo for China's economy and society (Figure 1).

[Insert Figure 1 here]

Despite its growing significance, limited resource access, established bias against risk-taking, and administrative inefficiency constrain entrepreneurial agency. How to settle the constraints? Acemoglu and Robinson (2012) argue for inclusive institutions to sustain economic development; Djankov et al. (2006) suggest that the social environment determines our values and attitudes towards risk-taking ventures. By this logic, a mixture of inclusive social institutions is the key to entrepreneurship. Urban and Kujinga (2017) note that inclusive, informal institutions render entrepreneurs more likely to focus on the demands of others and society, which is the relational reciprocity articulated by Polanyi (2001). Social relations such as values and beliefs pertain to entrepreneurial intent (Valdez & Richardson, 2013) and deliver incentives, resources, and benefits on the supply side (Stephan et al., 2015).

Rooted in history and culture, China's informal institutions influence all facets of entrepreneurship, regulating resource accessibility and flexibility to serve entrepreneurial activities. For instance, an entrepreneur in rural China can employ relational resources to initiate her business. She can trust others and herself too can be trustworthy, with which social relations materialise into financial and even administrative resources. Her praxes turn out novel products and services, gratifying social demands and mitigating regional economic inefficiency. Therefore, the impact of informal institutions on entrepreneurial ventures reveals a prospect; it is facilitative to use reciprocal trust to mediate imperfect institutions as for formal administrative and financial systems.

3. Data & Conceptual Framework

To scrutinise the role of 'facilitating trust' in entrepreneurship, our research employs the individual-level social trust and entrepreneurial status data in the Chinese General Social

Survey (CGSS) from 2011 to 2021. It is a repeated cross-sectional survey conducted in mainland China's 31 provincial-level regions by the Hong Kong University of Science and Technology and the Renmin University. The sample covers seven waves in 2011, 2012, 2013, 2015, 2017, 2018, and 2021, which collects data in the year before the survey publication (2010, 2011 ... 2020). The CGSS captures the individual subjective sense of social trust and objective entrepreneurial identity. Demographic controls are available. Table 1 reports the descriptive statistics.

[Insert Table 1 here]

3.1 Entrepreneurship

The CGSS occupational survey classifies the entrepreneurial status of respondents. Our scrutiny considers two occupational types of entrepreneurial engagement. The first considered is 'business owner'. An 'owner' is one who owns any incorporated business obligated to pay regular corporate tax and formally employs others, with all formal business activities subject to legal constraints. The second is 'self-employed' including an extensive spectrum from a very small business, unincorporated family business to sole proprietorship and professional partnership. If one is a business owner or self-employed, the variable is assigned a value of 1; otherwise, 0. See Table 1 and Figure 2, the mean of entrepreneurial status is 0.105; the general entrepreneurs account for 10.5% of respondents on average. 8.5% of all respondents and approximately four out of five entrepreneurs are self-employed. In comparison, business owners make up 2%.

[Insert Figure 2 here]

It is creditable that Jia et al. (2021) distinguish business ownership incorporation from self-employment to eliminate the problematic conflation of necessity and opportunity entrepreneurship, yet might imprudently assume most of those self-employed as informal small business actors, typically peddlers. A new conflation emerges, ironically again mixing up necessity and opportunity. Specifically, small business is a barometer of China's market economy, reflecting its dynamism, resilience, and capacity for innovation. The significance extends beyond the sheer ubiquity of small actors but embodies the entrepreneurial spirit and

grassroots economic participation that sustains China's development. Although the global narrative overvalues the dominance of state-owned conglomerates and tech giants, it is small businesses, most of which fall under the umbrella of self-employment, that paved the way for China's market dynamics. In rural and hinterland areas, small business is the chief energy of local socioeconomic vitality, gratifying demands and generating incomes through innovative operations that, though far from cutting-edge, are opportunity-oriented. The distinction between necessity and opportunity appears not clear-cut (Kwon & Sohn, 2019).

Moreover, self-employment, particularly in creative, technology, and e-commerce sectors, is not merely a survival mechanism or necessity-entrepreneurship expression but opportunity-driven. For instance, self-employed content creators on TikTok leverage digital ecosystems to realise significant revenue streams and employ big teams. Many of their creative activities are entrepreneurial, not only profitable but also innovative, contributing to the diversification of China's growth and global transformation of the digital economy. Additionally, the adaptability of small businesses functions flexibly in socioeconomic shifts. During the COVID-19 pandemic, small business actors switched to flexible digital models and took timely market opportunities. This responsiveness contrasts sharply with the rigidity of giant conglomerates, which, rich resource access notwithstanding, wrestled with rapidly changing demands.

In sum, classifying self-employed entrepreneurs as homogenous necessity entrepreneurship risks underestimating their significance. The diversity in necessity-required works and highly innovative ventures is critical as a true reflection of entrepreneurship in China. Detailed bottom-up surveys or comprehensive top-down statistics are called to settle the conflation; only with more accurate classification can the necessity-opportunity distinction be well-identified. Hence, our baseline research consists of entrepreneurs with both incorporated and unincorporated businesses.

3.2 Social Trust

Respondents evaluate the degree to which they sense others in society as trustworthy with a scale from 1 (least trustworthy) to 5 (most trustworthy). The evaluation solves the challenge

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in trust studies at a macro-micro intersection; it was historically arduous to scrutinise social relations within specific cultures and informal institutions through the trust variable (Schilke et al., 2021). The macro-social trustworthy relational institutions cannot necessarily translate into micro-individual entrepreneurial intent and spirit. Furthermore, integrating informal institutions with macro-level entrepreneurial development may contradict the notion of individualism and egoism in the capitalist market economy according to orthodox economics (Bennett & Nikolaev, 2020). Fortunately, the CGSS enables it to untangle the complexity and fathom the empirical causality between entrepreneurial engagement and trust at the micro level. Interpreting entrepreneurial behaviour with the individual sense of social trust clarifies the way social trust functions within the market economy framework.

The inextricable connections between relational trust and entrepreneurship merit scrutiny. A human is the sum of social relations (Marx & Engels, 1894, pp. 592–599); Polanyi (2001) argues that human relations established in pre-market societies constitute the historical foundation of current economic systems. If an entrepreneur is a human and entrepreneurship acts within the market society system, then entrepreneurial behaviour is naturally embedded in relations. In the context where capitalism does not dominate all—whether in pre-market societies or within diverse contemporary cultures—relational cooperative networks built on trust and reciprocity serve as the base and mediator of economic activities (Delanty, 2022, p. 251; Hager, 2022, pp. 1902–1903). Per Polanyi’s logic, entrepreneurial activities and the market economy are not independent of social relations but intertwined with social structures (Tillmar, 2006; Cangiani, 2011; Dale, 2011; Xu, 2024). Social trust is a vital adhesive sustaining the structure. Trust entails a trustor’s will to be vulnerable to the trustee (Schilke et al., 2021); devoid of trust, there would be no solidarity, prosperity, and society ultimately (Fukuyama, 1996; Putnam, 2000; Molm et al., 2007; Dale, 2011; Buonanno et al., 2024; Cette et al., 2024). Even in the contemporary era of global neoliberalism, such networks of trust and cooperation remain crucial. Szelényi and Mihályi (2021) interpret Polanyi’s framework as ‘mixed’, highlighting reciprocity and trust to correct the (re)distributive failure. Szelényi and Mihályi suggest that market failure may instigate social failure in a marketised society, necessitating trustworthy welfare redistribution to mediate. Similarly, our research

advocates for entrepreneurship indispensable in market prosperity and trust—of significant influence on micro-individual entrepreneurial behaviour.

Trust, our key explanatory variable, is ponderable in examining the impact of social relations on entrepreneurship. Schumpeter (1980) concludes that entrepreneurial activities in a market economy disrupt established economic systems through innovation and social development. Hereto, Harvey and McMeekin (2013) critically advance that socioeconomic organisation, markets, and non-markets coexist within a relational ecosystem. From Polanyi's (2001) perspective, entrepreneurial innovation occurs in interactions within the system. Any organisational change, including those of social trust in non-market contexts, can generate a butterfly effect on entrepreneurship and economic development. Changes in trust might mediate market mechanisms and enable entrepreneurs to grab socioeconomic opportunities, or conversely, hinder entrepreneurial activities or appear constrained by the market society in which entrepreneurship settles (Gemici, 2008; Caliendo et al., 2012; Buonanno et al., 2024; Cette et al., 2024).

Polanyi (2001) cautions that unchecked market expansion implies inevitable neglect and disruption of society, triggering protective responses termed double movement. Özveren (2007), Dale (2010), and Delanty (2022) articulate that an extreme market-fundamentalist society equals social fragmentation and atomisation, provoking unethical behaviour, authoritarianism, and dehumanisation. Despite working inventions, genuine entrepreneurial innovation conducive to socioeconomic development seems unachievable. It is because an unethical authoritarian society conforms to strict establishment. Our contradiction and concession illustrate the significance of trust in social relations to the contemporary market economy. Social trust manifests the protective response of double movement to mitigate entrepreneurial uncertainty and market volatility, accelerating the accumulation of social capital and aligning entrepreneurship with moral and cultural norms (Ulhøi, 2005; Randles et al., 2008). Schilke et al. (2021) resonate with Polanyi: trust is an institutional necessity to enhance cooperation by reducing transaction costs. Trust can mediate tensions between the formal market economy and informal social relations, facilitating incentives for cooperative innovation and resilience in entrepreneurship (Welter & Smallbone, 2006; Kwon & Sohn, 2019; Bennett & Robinson, 2024). Accordingly, institutionalising trust to protect moral and

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cultural coherence renders entrepreneurship to thrive and catalyse innovation-driven socioeconomic development amidst uncertainty and risk.

[Insert Figure 3 here]

According to Figure 3, in Western China, Gansu exhibits the highest social trust, clearly exceeding the average, with entrepreneurial probability ranking in the first third. Constrained by weaker infrastructure and market economy, achieving this probability entails the informal institutional role of trust. Likewise, Qinghai's economy, with the highest probability and above-average social trust, primarily involves small and medium business actors whose entrepreneurship cannot be uncorrelated with social relations. The exception is Xinjiang. Despite the lowest trust level, it ranks third in entrepreneurial probability. This anomaly can be audaciously attributable to robust formal institutions and pro-business policies vigorously supported by the government. Government intervention appears to outweigh the spontaneous social response of informal institutions in Xinjiang, making it a compelling subject for future investigation.

Regarding the eastern region, Shenzhen, China's earliest special economic zone, demonstrates a dual high in both social trust and entrepreneurial probability, indicating the benign role of trust in entrepreneurship. Out of expectation, the entrepreneurial probability and social trust in Shanghai, the economic hub of China, are respectively unexceptional and below average. It is attributable to the dominance of giant multinational business groups and white-collar work environments that dampen entrepreneurial intent, as most individuals are inclined to salaried employment. Additional labour mobility, fast-paced lifestyles, shallow interpersonal interactions, and intense competition in cities like Shanghai and Beijing amplify negative tensions and lower trust levels.

The stark contrast between Beijing, Shanghai, and Shenzhen is intriguing, which may stem from disparities in social integration. For Beijing and Shanghai, natives and migrants often suffer from trust-building barriers. Conversely, Shenzhen, under pro-market institutions and policies, creates a relatively equal environment where natives and migrants benefit with more trust. Shenzhen's policy incentives favour an entrepreneur-friendly environment with surmountable social and financial barriers. In opposition, Beijing and Shanghai favours giant actors, state-owned and multinational, over grassroots entrepreneurship. Besides, economic

and industrial structures, along with policy and social barriers, further mould the contrast in entrepreneurship. Shenzhen's high-tech and internet industries enrich more competitive opportunities than Beijing's, whose state-owned entities monopolise critical administrative and natural resources, imposing formidable barriers that stifle entrepreneurial engagement.

3.3 Individual Demographics

To enhance the validity of the results, this scrutiny controls for a series of variables with reference to solid empirical studies. The variables mirror individual demographics at the physical, social, and economic levels: age, gender, religion, social position, income, health, education, dependant, household size, cadre parent, hukou, real estate, and social security, minimising the interference of confounding variables in the causality between social trust and entrepreneurship.

The research incorporates typical demographics relevant to entrepreneurial behaviour (Liñán & Fayolle, 2015; Wang et al., 2021; Gardiner et al., 2024). Age is associated with accumulating assets and capabilities (Kautonen et al., 2013; Zhang & Acs, 2018). As individuals age, physical health features a determinant of one's capacity to use assets and sustain entrepreneurship, with entrepreneurial activities reciprocally improving individual wellbeing (Kautonen et al., 2017; Torrès & Thurik, 2018; Gardiner et al., 2024). Whenever capabilities and resources are absent, education is instrumental in entrepreneurial competency training (Guerrero et al., 2006; Von Graevenitz et al., 2010; Rauch & Hulsink, 2015). However, entrepreneurial education in China is an expensive privilege available at elite higher education institutions, rendering educational degree and type substantially correlated and divergent from previous conclusions (Oosterbeek et al., 2009; Bae et al., 2014; Ramadani et al., 2022)—it may suppress the entrepreneurial intent of merit individuals (Bai et al., 2024). At the macro level, gender highlights structural disparities in resource accessibility; on a micro one, it illuminates the gender-heterogeneous relationship of entrepreneurship to stereotypes and self-efficacy (Wilson et al., 2007; Gupta et al., 2009; Ramadani et al., 2022). Furthermore, religious belief relates to individual values and behavioural patterns of economic activities (North, 1990; Weber, 2005).

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Socioeconomic demographics at individual and household levels are critical control variables—social position, income, real estate, and cadre parent—directly influencing one’s accessible financial and social capital (Hvidberg et al., 2023). Typically, those with richer material and financial assets can readily secure the resources necessary for entrepreneurship; therefore, cadre parent implies social networks and sociopolitical capital—particularly salient within the institutional environment of a growing stage of China’s economy (Tabellini, 2008; Jia et al., 2021; Schilke et al., 2021). Within China’s institutional context, the hukou system is another indispensable variable (Wang et al., 2021; Xu, 2022). Hukou, an arrangement of household registration, determines an individual’s rights based on their residence. Historically, urban hukou registrants were restricted from accessing rural land and property, while rural residents were constrained by barriers to quality education and social security in urban areas, rendering the migrant workers vulnerable. Hukou disparities bring about discriminatory market access and resource distribution, epitomising the stark efficiency of neoliberal growth and the hidden inequalities. Additional household-level variables, such as household size and dependant number, are included to capture the influence of household structure. The variables above dictate the flexibility of household resource allocation and may significantly affect an individual’s risk resiliency and entrepreneurial capacity.

Based on Polanyi’s (2001) double movement concept, social security emerges as a crucial control. Double movement describes the tensions between market expansion and social protection, stressing how our society develops a mechanism to shield itself from the disembedding impact of unregulated markets. Social security is an institutionalised response to market uncertainty, facilitating confidence in entrepreneurial behaviour. This protection mitigates the precarity individuals confront, enabling one to engage in manageable entrepreneurial risk without the fear of extreme economic ruin. The institutional framework is conducive to innovation and risk-taking, moderating inherent market volatility. Accordingly, controlling social security embodies an intersection of Polanyi’s protective policy and Schumpeter’s entrepreneurial strategy. Beyond this theoretical centrality, social security also warrants inclusion as empirical studies underscore its role in economic behaviour. Social security systems affect individual resource allocation, influencing their capability to save, invest, and venture into entrepreneurial activities (Segal et al., 2005; Guerrero et al., 2006).

Overall, given existing data availability, incorporating the controls aims to minimise the interference of endogeneity for a more robust causal inference.

3.4 Rice Civilisation

Introducing the instrumental variable (IV) approach is valid to manage endogeneity. Complicated endogeneity arises in simultaneous causality, measurement error, and omitted-variable bias. For reverse causality, entrepreneurial ventures accompany an enhanced sense of trust when financial and social resources become more accessible to high-flyer entrepreneurs. Meanwhile, given pervasive individualism and egoism in market expansion, it is natural that an entrepreneur believes that society is untrustworthy. The paradoxical causal inference can bias the estimation of social trust on entrepreneurship. Thereupon, to isolate the bias, the IV approach delivers a source of exogenous variation relevant to the endogenous trust yet uncorrelated with the errors in specification.

It is essential to fathom what is relevant and what is uncorrelated for IV identification. Regionally cultural and institutional environments specify significant relevance to individual entrepreneurship (North, 1990; Weber, 2005; Guiso et al., 2006; Engle et al., 2010; Khlystova et al., 2022). From the perspective of institutional economics, any industrialised modern civilisation retains specific cultural norms and informal institutions from its pre-modern era. Following the revolutionary changes wrought by industrialisation, historical legacies continue to substantially impact contemporary macroeconomic development and micro-business behaviour (Polanyi, 2001; Weber, 2005; Guiso et al., 2006; Doepke & Zilibotti, 2008; Acemoglu & Robinson, 2015). Critical reflections on institutional economics advance that the entrenched nature of informal social institutions across regions contradicts the one-size-fits-all approach to development intervention (Khan, 2010; Gray, 2018). To rephrase, it is the diversity of civilisations, cultures, and informal institutions that stops global neoliberal capitalism from entirely homogenising development, instead reserving the diversity in humanity and humanism of entrepreneurship (Randles et al., 2008).

For China, collectivist cultural norms and informal institutions are of fair relevance, as elaborated in Sections 2 and 3.2. Rooted in historically cooperative agricultural production,

collectivism prioritises trust and reciprocity over individual gain (Bray, 1994; Talhelm et al., 2014; Thomson et al., 2018). In China, entrepreneurs often translate familial, social, and professional relationships into business opportunities as well as financial and informational resources. Trust mitigates transaction costs, favouring an entrepreneur-friendly environment conducive to entrepreneurial financing and information spreading. On the other hand, collectivist institutions may also inhibit disruptive innovation and high-risk ventures, as overreliance on social relations can trigger inefficient resource allocation (Pathak & Muralidharan, 2016). Additionally, collectivist trust in scope within specific groups often implies distrust towards others (Schilke et al., 2021). Therefore, collectivist informal institutions exert multidimensional effects on contemporary entrepreneurship in China, and following the relevance is the uncorrelation.

Although plumbing informal institutions is tricky, our research overcomes it by raising a heuristic query: where may contemporary China's informal institutions and social relations originate? One answer is its traditional agrarian civilisation. Collectivist social values and institutions mirror an interplay of agency and structure constituted over millennia by geography and ecology within distinct regions. Each region represents a sociocultural relational ecosystem embedded in the contemporary individual praxes (Kitayama & Cristina, 2024, pp. 506–507). The livelihoods nourishing social trust in agrarian civilisation—rice, wheat, nomadism, or others—merit examination. During China's conventional civilisation, particularly from the Qin–Han (circa 3rd century BCE) through the prosperous Tang–Song and Ming–Qing, rice was the primary staple in East Asia. Some local regions evolved into 'national granaries', supplying rice to sustain the national population. Without institutional variables, natural endowments like rice production are unlikely to affect contemporary individual and collective behaviour through alternative mechanisms, rendering themselves a valid source of exogeneity (Acemoglu et al., 2001; Easterly & Levine, 2003; Rodrik et al., 2004; Tabellini, 2008, 2010; Anguera-Torrell, 2020). Consequently, rice farming is eligible.

Agricultural activities in ancient China moulded the structure of social relations. Patterns and scopes of socio-relational trust are characterised by collective cooperation in farming. Rice production entails cohesive social relations—a higher degree of altruistic trust (Talhelm et al., 2014). Compared with wheat growing, rice farming is more intensive and

requires roughly twice the labour; due to the limits of isolated household production, it is necessary to frequently exchange labour to support one another. The construction, usage, and maintenance of complex irrigation systems further necessitate close, efficient interpersonal cooperation. On the opposite is nomadism: nomad migration results in tenuous long-term relationships and more connection-breaking than -building. Briefly, rice farming demands trustworthy interpersonal collaboration and conflict avoidance, thereby fortifying relational reciprocity and collectivist culture (Thomson et al., 2018).

However, collectivist social values and institutions are scope-limited (Tabellini, 2008; Xu, 2024). The dichotomy between rice-framing groups and nomadic individuals is not absolute, nor are rice-producing regions entirely trusting of society. Critically, although Asian rice civilisation may imply cohesive social relations, altruistic trust never perfectly equates to unlimited unselfish altruism. To illustrate, individuals tied by clan lineage in a region may trust each other with the same lineage but fortify against different clans in the same region. A small household unit practising internal altruism may sense its interests limited by other units in the same clan; at the provincial or even national level, collectivist and cohesive internal trust cannot naturally translate into an external one towards all provinces or countries, even though all the individuals coexist within the same society. Despite that, our critical reflection corroborates the relevance of rice civilisation to social trust: wheat-growing regions favour independent production whilst nomadic lives disperse across places—neither of which captures the scope-limited impact of trust. By contrast, rice farming reliant on the collective game—cooperative or not—demonstrates the collective action of scope-dependant trust, validating the instrument use of rice civilisation.

[Insert Figure 4 here]

Our research instruments the historical designation of specific regions as prime rice-framing districts, characterising the collectivist-oriented agricultural civilisation. The approach is inspired by trustworthy work (Akerberg & Botticini, 2002; Carlson & Mitchener, 2009; Bleakley & Lin, 2012; Alesina et al., 2013). Constructing the instrument rooted in the history of China centres on its representative Tang–Song and Ming–Qing stages. Whether intensive rice farming dominated the regional economy in the Tang–Song era and served as a national granary after Song (mainly Ming–Qing) constitutes an ordinal variable (see Figure 4

and Songyi Guo’s survey). Specifically, South China was an eminently major rice-farming region since the Tang dynasty. The Qinling-Huaihe Line demarcates its natural boundary with the North. Bray (1994) points out that rice farming in South China produced sufficient economic and grain surpluses to sustain the national economy and society. It was designated as the granary to export lavish rice, catering to gentry clans, officials, troops, and artisans nationwide. Jiangnan region along the Taihu Plain in the Yangtze Delta was particularly fertile with high yields and honoured the national granary since the Song dynasty (Guo, 2001). Historians at the Chinese Academy of Social Sciences, not limited to Guo, conclude that during the Ming and Qing, Huguang areas in South Huaihe were elevated to the granary status with equally productive yields (Hunan and Hubei, see Bray, 1994; Guo, 2001; Talhelm et al., 2014). Last, due to the fecund Chengdu Plain, Sichuan was also a vital high-yielding district. Interacting the constructed ordinal variable with a time dummy handles the data limits in (yearly) temporal and (provincial) spatial dimensions. The interaction not only overcomes the dimensional constraints but captures the varying effects of our instrument on the endogenous variation across years (Angrist & Krueger, 1991).

4. Empirical Results

4.1 IV-Mediated Baseline Regressions

Our empirical strategy aims at the causality of social trust on entrepreneurial engagement:

$$Entrepreneur_i = \beta_0 + \beta_1 Trust_i + \theta X_i + Province_j \times Year_t + \varepsilon_{ijt} \quad (1)$$

where the response variable $Entrepreneur_i$ is binary, indicating whether individual i engages in entrepreneurial behaviour and is identified as an ‘entrepreneur’ through business incorporation or self-employment. The explanatory variable $Trust_i$ is an ordinal variable to measure the degree to which one believes others in society are trustworthy. Following are demographic controls, fixed effects, and standard errors clustered at the province-year level. This specification enables individuals i to compare within the province-year cell and mitigates the omitted-variable bias. Table 2 reports preliminary results of specification (1).

[Insert Table 2 here]

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When introducing our careful list of controls and fixed effects into preliminary regressions, the marginal effect of social trust shrinks from -4.70‰ to -3.46‰ (see Table 3). Although statistical significance remains robust, its economic interpretation appears obscure, incurring endogeneity concerns. Despite no significant multicollinearity (Appendix Tables 2 & 3), simultaneous causality may arise if the response and explanatory variables bidirectionally influence each other or are simultaneously determined by a set of equations. Otherwise, measurement error and omitted-variable bias also obfuscate the true relationship, distorting the estimates and interpretation of empirical findings.

First, the entrepreneurship variable may simultaneously be affected by social trust and reciprocally influence social relations. Empirically, the impact of social trust manifests in altering resource accessibility and risk resiliency (Audretsch et al., 2006; Liñán & Fayolle, 2015). Higher-level social trust facilitates trustworthy cooperative relationships at the individual level, reducing transaction costs at a societal level (Welter & Smallbone, 2006; Stephan et al., 2015; Schilke et al., 2021). An entrepreneur can access informational, financial, and technological resources from her social networks influenced by social environments and institutions. Theoretically, Polanyi (2001) indicates that economic activities are embedded within social relations, with trust, inherently relational itself, functioning as a key element of relation. By and large, social trust is a significant incentive of informal institutions that bolsters entrepreneurship.

However, it is not unimpeachable that entrepreneurship may, in turn, influence social relations. Through entrepreneurial activities, individuals establish and extend social networks to accumulate social capital. Afterwards, it is formidable to disentangle whether their social and financial resources derive solely from informally established social relationships (Tillmar, 2006; Smith & Lohrke, 2008). For instance, a responsible entrepreneur can exercise her agency to germinate employment and business opportunities, enhancing living conditions for diverse social groups, no matter whether she directly employs one. Such entrepreneurial agency inspires affected individuals to trust more strongly in others; that is, social cohesion consolidated by entrepreneurial social responsibility. At the same time, the reflexivity of the entrepreneur's behaviour reconstructs her epistemology (Xu, 2024). On a macro aspect, entrepreneurial agency propels the evolution of social structures through market expansion

and technology innovation beneficial to social groups, thereby generating recognition of reciprocal and cooperative relations. Therefore, the reverse causality between variables complicates the causal narrative.

Interestingly and arguably, if entrepreneurial individuals act irresponsibly to exploit short-term gains only, it will erode social trust and even demolish original relational networks. For example, opaque opportunistic impropriety in business may incite social distrust; a predatory entrepreneur prioritising business extortion will exacerbate inequality, substantially undermining the reciprocity and stability of social relations. Overall, reverse causality and endogeneity in preliminary regressions inevitably obscure the causal identification.

Second, Polanyi's (2001) theory evinces that economic dynamics are intertwined with individual and social contexts, amplifying concerns over possible confounding variables. The preliminary results might be biased by omitted variables intrinsically tied to contexts. Third, the measurement of trust may also be prone to error. Situational contingencies and force majeure can influence a respondent's subjective evaluation of trust. Fortunately, the IV approach is the means to tackle endogeneity concerns by introducing an exogenous variation to isolate the confounding causal relationships, thus mitigating the measurement bias and enhancing the research validity.

Social relations, informal institutions, and trust are an outcome of history (North, 1990; Guiso et al., 2006). Hence, to overcome the concerns, the IV approach is with reference to Bray (1994), Acemoglu et al. (2001), Doepke and Zilibotti (2008), Talhelm et al. (2014), and De Luca et al. (2021). It employs the exogenous variation of rice civilisation on current social trust, spotlighting the variation across regions more than over time as informal institutions vary unimpressively over time (Acemoglu & Robinson, 2012). Next, our specification (2) formally is:

$$Trust_i = \beta_0 + \beta_1 RiceCivilisation_i + \theta X_i + Province_j \times Year_t + \varepsilon_{ijt} \quad (2)$$

where *RiceCivilisation_i* is the instrument—whether a region served as a major rice-producing area and the granary of the entire country during ancient China's Tang–Song (before the thirteenth century) and Ming–Qing (before the twentieth century) eras—identified as an ordinal variable. With the IV, our research can regress *Trust_i* on *RiceCivilisation_i*

and calculate predicted values \widehat{Trust}_i , then specifying the regressions of $Entrepreneur_i$ on \widehat{Trust}_i and figuring out the IV-estimated $\widehat{\beta}_1$. Although the preliminary regressions yield a negative effect of trust, but, indeed, growing social trust causes entrepreneurship to increase as Table 3 illustrates the IV-Probit estimates (Newey, 1987).

[Insert Table 3 here]

The estimated coefficients of social trust in the second-stage regressions are more salient and reverse the sign compared to Table 2. Columns (1) and (2) exhibit estimates with provincial and provincial-year fixed effects controlled. Both are statistically significant and positive, indicating that social trust positively influences entrepreneurial status. The higher the social trust level, the more probable the entrepreneurial engagement. The marginal effect of trust on entrepreneurship is 17.14% and 46.29%, respectively. Given mixed cross-sectional data from random (re)surveys, different chosen fixed effects reveal conclusions based on differing assumptions. Time-fixed effects account for factors constant across individuals but evolving over time, which ought to be controlled when the influence of the response variable systematically changes at a certain time. Assuming the sample (spanning individuals across China's regions from 2011 to 2021) is orthogonal to year-specific dynamics, then solely controlling provincial-regional effects evinces that each unit increase in social trust raises entrepreneurial engagement by 17 percentage points (Column 1). For another, assuming that provincial-regional effects intertwine with time dynamics, the 46.29% reflects the results of controlling provincial-year fixed effects: each unit increase in trust tremendously expands the probability of entrepreneurial status (46 percentage points, Column 2).

Our regression diagnostic procedures yield supportive findings. Specifically, the endogeneity tests reject the null hypothesis that social trust is exogenous at the regular significance level. The test coefficients suggest endogeneity among variables, underscoring the necessity of the IV approach. F-statistics range from 11.4 to 35.39, evincing the robust relevance of the instrument. See below, the results of the Anderson-Rubin (AR) and Wald tests report significant values, 6.57, 17.51, 4.47, and 4.85, rejecting the weak instrument hypothesis and demonstrating no significant weak-instrument concern. Regarding Columns (1) and (2), the first-stage regressions exhibit highly significant correlations, aligning with our theoretical assumptions that historical agricultural production and civilisation features

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play a role in contemporary informal institutions and social relational trust.

The noteworthy positive causal relationship between social trust and entrepreneurial status can be interpreted through the combined theoretical framework of Schumpeter and Polanyi. Polanyi's (2001) concept of embeddedness spotlights that economic activities like entrepreneurship are deeply rooted within social structures and informal institutions. Social trust, a critical relational component, facilitates cooperation, lessens transaction costs, and stabilises resource accessibility within the embedded networks. These effects support the emergence of entrepreneurial activities by enabling actors to leverage relational capital and navigate uncertainty. From Schumpeter's (1980) perspective, entrepreneurship thrives on innovation and the 'creative destruction' of existing socioeconomic equilibrium. Social trust in this context is a mitigating factor against the inherent risks and resistance associated with the 'disruption'. By fostering cohesive and reciprocal relationships, trust encourages entrepreneurs to pursue innovative ventures with more accessible resources and confidence in their capability to conquer institutional barriers. Hereto, Polanyi and Schumpeter both evince that social trust does not merely coexist with entrepreneurship but catalyses it by aligning relational stability with dynamic innovation. This dual role of trust—embedding business behaviour in social relations and enabling progressive economic transformation—shares a nuanced understanding of its centrality to entrepreneurship. Consequently, the empirical results reinforce the theoretical proposition that trust is a vital facilitator of entrepreneurship in the market society.

Based on our results and interpretation, no significant difference stands out between formal incorporated and informal unincorporated entrepreneurs in Table 4. The causality of social trust on entrepreneurship is consistently positive. The results at the national level reveal a discrepancy with previous conclusions (Kautonen et al., 2013; Jia et al., 2021) but align with Polanyi's theory on the embedded nature of economy that social relational trust penetrates both formal and informal entrepreneurship. It is also undeniable for Schumpeterian ratiocination that, no matter which entrepreneurial type, facilitated resource accessibility enables economic activities of innovation in formal and informal settings.

[Insert Table 4 here]

One can claim that the rice civilisation variable might directly determine

entrepreneurship development, yet this claim is untenable. First, rice farming cannot directly impact entrepreneurship in its modern sense. At least in China's history, the peasantry in pre-market societies was barely associated with entrepreneurial activities. If rice could develop entrepreneurship, it would have been China, not Europe, that established the first capitalist market economy preemptively. In reality, rice production indirectly shaped the evolution of regional informal institutions and social relations. As Polanyi (2001) propounds, the market economy is embedded in institutionalised social relations, and entrepreneurship is same embedded within contemporary relational variables such as social trust. Its linkage to historical social praxes is always indirect (Xu, 2024). In other words, whether a region in ancient China was a rice-farming area itself is not a relational variable but a praxis that never immediately translates into modern entrepreneurship. Moreover, many regions historically marked as part of the rice civilisation are no longer significant national granaries for grain production; only their residual informal institutions continue to exert a long-term influence across generations. Empirically, the introduction of the trust variable fundamentally captures the mediating role between historical praxes and contemporary entrepreneurial activities. Even if historical praxes exercise other roles, the marginal indirect roles—such as the temporal and spatial effects of regional economic, historical, and cultural heterogeneity on individuals—are absorbed by the fixed effects and controls.

Second, regarding our theoretical framework, economic history and social institutions are contextualised within contemporary global capitalism. Basically, entrepreneurship narrates the spirit and capacity of innovation and market expansion dependent on the modern capitalist economy. The concept of entrepreneurship germinated and was delineated within the 20th-century capitalist society in the West (Schumpeter, 1980). Before that, China was a vast traditional agrarian economy that culturally esteemed agriculture but dismissed business. Arguably, throughout the over-thousands-of-years history of rice framing, entrepreneurship can be inferred as virtually non-existent. Thus, informal institutions of social relations that arose in the traditional agrarian society never related to the entrepreneurship concept that materialised after the 20th century. Further, the historical prominence of rice civilisation reflects geographic and agricultural characteristics rather than the structure of the contemporary capitalist economy. Geographic and agricultural attributes, rooted in historical

natural endowments, directly determined agricultural productivity—not modern entrepreneurship—neither chronologically nor concerning its conceptual nature.

A plausible conjecture is that contemporary government policy or infrastructure construction favours previous rice-farming regions. However, on scrutiny, it seems observable that China's most prosperous cities, such as Beijing, Shanghai, and Shenzhen, perform tenuous geographical linkage to traditional rice farming. The economic ascendancy of their prosperity owes to policy support, increased levels of internationalisation, and the resource aggregation of technology and finance—unrelated to the historical status of rice production. To exemplify, Shanghai's rise was propelled by market liberalisation policies and the immense impetus of international trade. It is a policy-driven economic framework rather than the agricultural legacies of rice that determines. Geographically, numerous conventional rice-producing areas remain economically underdeveloped, as exemplified by the inland South-Central China. Although these areas possess long-standing collectivist values, they by no means evolved into global economic hubs resembling Shanghai or counterparts like Tokyo and London. The domestic divergence and transnational similarity evince that the regional historical status has limited influence on contemporary economic, business, and entrepreneurial activities.

Last, the construction of our historical instrument also references trustworthy studies (Akerberg & Botticini, 2002; Easterly & Levine, 2003; Rodrik et al., 2004; Carlson & Mitchener, 2009; Bleakley & Lin, 2012; Alesina et al., 2013; Talhelm et al., 2014; Thomson et al., 2018; De Luca et al., 2021). To recap, it is implausible that ancient rice civilisation exerts a significantly direct causal influence on modern entrepreneurial behaviour, and the rice instrument is exogenous in nature.

4.2 Robustness Checks

In addition to the demographic controls, province-year fixed effects, and IV approach used to manage endogeneity, this research deploys supplementary checks with reference to Acemoglu et al. (2001), Djankov et al. (2006), Kautonen et al. (2013), Wang et al. (2021), Jia et al. (2021), and Barrios et al. (2024). Our checks measure the sensitivity and specificity of the

model, change the timeframe, adjust the clustering level of errors, use linear estimation, apply propensity score matching, winsorise outlier data, and substitute variables (see Appendix Tables 4–11 & Figures 2–3).

Among robustness checks are the following details to specify. First, regarding the timeframe from 2011 to 2010, COVID-19 is a global shock. During the COVID-19 pandemic, China enforced stringent lockdown and social distancing policies. Naturally, it compelled entrepreneurial individuals to disengage from social networks, thereby severing the role of trust and social relations in entrepreneurial activities under the anti-COVID-19 policies. To mitigate the exogenous shock interference, our checks divide the timeframe into two subsamples: 2021 and 2011–2018. Second, the checks validly incorporate 1) interaction terms for demographic controls (age, education, income) that might exhibit nonlinear effects, 2) distinguished registered business-owner entrepreneurs and unregistered self-employed ones, and 3) alternative variables such as social activity frequency and social distrust. Third, assuming correlations among observations at the individual, provincial, and yearly levels, heteroskedastic disturbance terms do not compromise the consistency of results. Considering the confounders and selection bias in non-experimental data, (non-)random assignment and statistical differences of observational data do not inform inconsistent results. Supplementary checks exhibit no significant change, indicating a certain degree of robustness and validity.

4.3 Heterogeneity Extensions

Nuanced sociocultural norms mould diverse informal institutions of social trust wherein entrepreneurship acts. From Polanyi's (2001) perspective, economic activities are set in social relations institutionalised variously. Together with the dynamic disequilibrium articulated by Schumpeter (1980), sociocultural and institutional settings catalyse or constrain the agency of entrepreneurial innovation. The combined Polanyi-Schumpeter framework on the socially embedded and creatively disruptive nature of entrepreneurship resonates with an examination of the structural heterogeneity with which regional contexts influence the relationship between trust and entrepreneurial behaviour. Without acknowledging the heterogenous variations, any attempt to generalise might risk oversimplifying real-world sociocultural

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realities. Herefrom, it behooves heterogeneity extensions to plumb the regionally divergent causality in China.

The structured institutional endowments of social trust vary in Eastern, Western, and Central China. This trichotomy is not arbitrary but embedded in economic, historical, and policy realities since the informal institutions mediating entrepreneurial activities function diversely in nuanced social environments. Eastern China, characterised by developed market institutions and global economic integration, is distinct from the less-industrialised, more traditional central and western areas. The east historically benefited from the open market policy and exports-focused growth; in comparison, the central portrays a transitioning contrast with semi-modernised infrastructure and social structures, and the west appears on the frontier and ethnic diversity, relying on informal mechanisms to offset socio-institutional deficiencies in the market economy. For speculation, trust may function within formalised arrangements in the east, whilst it might compensate for tenuous institutional support through tighter interpersonal networks in the hinterland. Entrepreneurship in Eastern China might align with Schumpeterian innovation, leveraging robust formal support and market access. By contrast, in Central and Western China, entrepreneurship could mirror the response of self-employment to meager market economy institutions. In short, the trichotomy and regional divergence illustrate that entrepreneurial agency is contingent on the institutionalised structure of trust, aligning with Polanyi's argument that historical specificities and localised institutions predominate in economic inputs and outcomes (Gemici, 2008; Delanty, 2022, pp. 255–258).

Heterogeneity extensions can specify the regional divergence of informal institutions in trust and entrepreneurship. For instance, trust may enhance entrepreneurial resiliency by facilitating resource accessibility in the east but manifest as a flexible survival strategy of collective reliance in central areas of resource-constrained environments. The nuanced functions unveil why informal institutions evolve beneath varying socioeconomic constraints. Importantly, this evolution aligns with Polanyi's critique of universal market expansion and Schumpeter's advocacy for a contextual grasp of economic dynamism (Randles et al., 2008; Hager et al., 2022). Namely, heterogeneity contributes to the broader discourse on economic development in emerging markets, pondering the diversity of regional endowments and

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institutional environments when theorising about economic agency to proffer an integrated framework for analysing the socioeconomic structure that sustains or hampers entrepreneurship.

[Insert Table 5 here]

To theorise more nuanced conclusions, our extensions categorise provincial regions. The classification is not strict to geography but following a norm established by regional economists and economic geographers, considering three criteria: natural geographical location, economic prosperity situation, and strategic development position. Divide provincial regions into eastern, central, and western identifiers interacted with dummy terms: Trust#Eastern, Trust#Western, and Trust#Central. Table 5 indicates that Trust#Eastern and Trust#Western are statistically insignificant, whereas Trust#Central exhibits a reversed sign with 5%-level significance. It suggests that the influence of social trust on entrepreneurial engagement varies across regions, with a particularly adverse impact in Central China. With the occupational type distinguished in Table 6, this inhibition is identified among those self-employed.

[Insert Table 6 here]

The adverse impact of social trust on entrepreneurship in Central China might derive from its relatively insular interpersonal networks lingering with economic disparities and cultural diversities. Central China refers to non-frontier, non-coastal hinterland provinces such as Shanxi and Henan, which is a net interconnecting coastal, frontier, and inland parts of China, encompassing approximately one-quarter of the national population. As the popular evidence in studying rural-urban inequalities and regional disparities, its economic structure chiefly revolves around agriculture and extractive industries. The relatively isolated networks shaped by the socioeconomic structure court conservative trust relationships that inhibit entrepreneurial vigour. Though such informal institutions are recognised as constructive in traditional sectors and household production, the heterogenous, divergent role of social trust in innovative entrepreneurship highlights the objective discrepancy with the east.

The insular and conservative relational networks exacerbate individual vulnerability and undermine the already-limited capacity and resiliency to entrepreneurial risks. Assuming that in the more economically developed and socially open Eastern China, trustworthy social

relations supply financial and social support for entrepreneurial ventures, it can be conversely inferred that in the less-industrialised central, individuals who receive the same support encounter more shame and apprehension towards entrepreneurial failure. When agriculture and extractive industries stabilise secure livelihoods, entrepreneurship may appear a risky deviation from stable traditions, which relatives might question or, at least, struggle to socially endorse. Failure in entrepreneurship is not only a personal setback but a source of collective shame within the closely connected social circle, so informal social relations exacerbate the shame notably when feeble formal market institutions structurally constrain entrepreneurship. Although informal institutions may not significantly distort the positive role of trust in formal business incorporation, they impose notable constraints on self-employment, the regionally main entrepreneurial type. Informal relations become the primary source of support but simultaneously pressures discouraging risk-taking.

A big and diverse country like China, with its expansive population and geography, is naturally used to different cultures and social norms as well as variations in social trust. Here is thus a query: how much insight can a scrutiny of formal or informal institutions alone supply? Recognising Bennett and Nikolaev (2020) and Jia et al. (2021), our research acknowledges the limitations in dealing with this complexity and behooves future work to explore the synergistic effects of formal and informal institutions in entrepreneurship development.

5. Discussion

Our findings exemplify a positive causal relationship between social trust and entrepreneurial engagement. Scrutinising the market economy setting with our Polanyi-Schumpeter theoretical framework, the creative destruction inherent in entrepreneurial behaviour is also embedded within institutionalised social relations to be sustainable. The results align their intellectual dialogue in our revisit that social trust, as a structured manifestation of informal institutions, mitigates transaction costs and market risks, thus facilitating entrepreneurship (Stephan et al., 2015; Schilke et al., 2021). First, more informal collaborative networks with knowledge spillover and resource reciprocity reduce transaction costs (Harvey & Metcalfe,

2004; Harvey & McMeekin, 2013; Bennett & Robinson, 2024). Second, although objectively measurable risks might not be overtly minimised—absent a number—they are socially attenuated; the trustworthy social relations are inclined to a clemency towards entrepreneurial failure and circumvent the rigidity of formal institutions by engendering more flexibility responsive to market volatility. However, the heterogeneity reveals a nuanced exception in Central China, where trust inhibits entrepreneurship, particularly self-employment. Interestingly, the Polanyian can interpret that the double movement of possibly excessive trust might defeat entrepreneurial expansion due to the social protectionism of the established. Meanwhile, a Schumpeterian can reason with reduced uncertainty, social immobility, and conservative routine (Harvey & Metcalfe, 2004, p. 6; Delanty, 2022).

Next, our research critically reflects on the literature, offering empirical evidence that informal collectivist norms can facilitate and inhibit entrepreneurship per regional contexts. It seems commonsensical that, in any capitalist market economy, entrepreneurial innovation naturally thrives on pro-market individualistic norms (Pathak & Muralidharan, 2016; Delanty, 2022). In other words, the logical conclusions of Bennett and Nikolaev (2020) align with Schumpeter's economic development theory. Yet, our findings—supported by Polanyi's ratiocination and the rice evidence from Talhelm et al. (2014)—challenge the universality of the commonsense. According to Talhelm, the capitalism-embedded modernisation theory is not replicable in China's experience with strong collectivist values. It echoes the Polanyi critique that economic behaviour is relational, embedded in, and constrained by historical social praxes (Hager et al., 2022; Xu, 2024).

Then, though conceptualising social trust as a representative of informal institutions influencing entrepreneurship is theoretically robust, our research acknowledges the gaps in the radius of trust (Schilke et al., 2021). Even as collectivist values are influential, trust is always scope-limited by a specific relational radius—household, clan, or region—rather than universal. Specifically, real-world social trust is what one constructs around oneself as a trustworthy social circle or sphere. It calls for more granular data to examine differentiated effects on entrepreneurial outcomes, disaggregating trust into one's social sphere to specify the understanding of multifaceted trust.

Additionally, it highlights the 'self-employment' dimension in heterogeneous

entrepreneurship. Jia et al. (2021) proffer a pioneering attempt to distinguish necessity and opportunity entrepreneurship, making excellent use of available data of self-employed and business owner. Nonetheless, our findings underscore that self-employment in China cannot be uniformly characterised as subsistence. A concern germinates with the subtle distinction between opportunity and necessity. As discussed in Section 3.1, self-employment can scale significantly, improving substantial employment and productivity, whereas formal business incorporation is not always unequivocally pioneering market opportunities. According to the digital gig economy investigation by Guo et al. (2024), increased self-employment facilitated by digital transformation is more attributable to formal incorporation; Barrios et al. (2024) share similar findings. Overall, the increasingly complex categorisation between self-employed and others, as well as opportunity and necessity entrepreneurship, entails more nuanced differentiation in future research.

Regarding the policy aspect, facilitating entrepreneurial structure and agency necessitates a double facilitation of formal and informal institutions (Anguera-Torrell, 2020). When China's investment-consumption-exports growth is in hot water, entrepreneurship must pinpoint, use, and even create opportunities. Schumpeter believes that evolutionary innovation originates within the market, and Polanyi portrays the organisation of markets as the impetus of change (Harvey & Metcalfe, 2004; Hager et al., 2022). A market economy is rooted in relational ecosystems, so friendly social environments are necessary. Also, though the existing market policy may already prioritise formal institutional support in Eastern China—such as access to credit incentives—contextual incentives for entrepreneurial agents with nuanced cultures in western and central regions cannot be ignorable. Entrepreneurship is the dynamo of economic development, and its energy is society itself. The government should diversify policymaking to align trust with opportunity rather than immobility, motivating entrepreneurial actors to organise community-minded innovation. Essentially, our research spotlights the institutional role of trust influencing entrepreneurship with nuanced contexts recognised. Aligning Schumpeterian innovation with the Polanyian embedded movement offers a holistic pathway to entrepreneurial sustainable development.

6. Conclusions

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This research clarifies the causality between informal institutions of social trust and entrepreneurial engagement with the Polanyi-Schumpeter theoretical framework. Contextualising entrepreneurship evidence in China's 2010s uncovers the embedded role of social trust in socioeconomic development. Entrepreneurship in development transitions, the alternative dynamo for the sustainability of society and economy, spotlights the necessity of evaluating the long-neglected relational variables such as trust (Khlystova et al., 2022).

The interpretation of a set of econometric estimations confirms a generally positive impact of social trust on entrepreneurial status. Our research extends to the heterogeneity of different regions in China with diverse cultural contexts. With the comparable province-year cell, social trust can boost self-employment by 32.65% and business incorporation by 10.37%. Central China, however, deviates from this pattern, where increased trust paradoxically curtails entrepreneurial probability, particularly self-employment. Beyond tackling endogeneity with the IV approach, no discernible impact of the COVID-19 shock, sample bias, or other confounders is outstanding, affirming our valid, robust results and findings.

In summary, the research offers critical policy implications on the interplay between informal social institutions and entrepreneurial activities. The findings suggest that social trust is not merely a passive cultural attribute but a transformative dynamo that can facilitate or hinder entrepreneurship up to contextual determinants. Policymakers must tailor trust-building and institutional reforms to regionally heterogeneous socio-economic-cultural realities. For example, the counterproductive role of trust in Central China spotlights the urgency for complementary formal institutions, such as a robust social security system, to mitigate its inhibitory influence. Bridging trust, entrepreneurship, and policy can contribute to the ongoing debate on the synchronisation of formal and informal institutions in innovative sustainable development.

Classification Codes

JEL L26 Entrepreneurship, O17 Economic Development, Z13 Cultural Economics

Declaration of Interest Statement

The authors declare no conflicts of interest.

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Tables

Table 1. *Descriptive Statistics*

Variables	N	Mean	SD	Min	Median	Max
Entrepreneur	52,869	0.105	0.307	0	0	1
Self Employed	52,869	0.085	0.279	0	0	1
Business Owner	52,869	0.020	0.141	0	0	1
Trust	52,869	3.387	1.030	1	4	5
Distrust	52,869	3.067	1.057	1	3	5
Social Activity Frequency	52,869	4.641	1.198	2	5	8
Age	52,869	43.61	12.56	17	44	93
Gender	52,869	0.490	0.500	0	0	1
Religion	52,869	0.105	0.307	0	0	1
Social Position	52,869	2.415	0.856	1	3	5
Income	52,869	34,807	176,072	0	20,000	9,993,000
Health	52,869	3.715	1.011	1	4	5
Education	52,869	2.035	0.938	1	2	4
Dependant	52,869	0.579	0.760	0	0	16
Household Size	52,869	3.328	1.729	1	3	18
Cadre Parent	52,869	0.059	0.235	0	0	1
Urban Hukou	52,869	0.401	0.490	0	0	1
Real Estate	52,869	0.832	0.374	0	1	1
Social Security	52,869	0.604	0.489	0	1	1

Table 2. *Preliminary Social Trust on Entrepreneurial Status*

Variables	(1)	(2)	(3)	(4)
	Entrepreneur			
Trust	-0.0498*** (-3.437)	-0.0422*** (-2.816)	-0.0404*** (-2.676)	-0.0399*** (-2.673)
Constant	-1.9705*** (-32.785)	-5.7567*** (-16.820)	-6.5378*** (-18.849)	-7.1803*** (-19.465)
Marginal Effect	-4.70%***	-3.73%***	-3.52%***	-3.46%***
Controls	N	Y	Y	Y
FE	N	N	Province	Province #Year
Observations	52,869	52,869	52,869	52,869

Notes: ***, **, and * respectively significant at 1%, 5%, and 10%. Controls are individual demographics: age, gender, religion, social position, income, health, education, dependant, household size, cadre parent, urban hukou, real estate, and social security. Robust standard errors are clustered at the province-year level. Hereinafter the same.

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Table 3. *IV-Mediated Social Trust on Entrepreneurial Status*

Variables	(1)		(2)	
	Entrepreneur	Trust	Entrepreneur	Trust
Trust	0.7079*** (6.198)		0.9302*** (151.136)	
Rice Civilisation		-0.0001*** (-4.794)		-0.0001*** (-55.790)
Age	-0.3289*** (-6.412)	0.4215*** (17.545)	-0.3927*** (-15.435)	0.4099*** (17.344)
Gender	0.0226 (1.231)	0.0290*** (3.138)	-0.0035 (-0.309)	0.0256*** (2.857)
Religion	0.1158*** (3.377)	-0.0124 (-0.644)	0.0718*** (3.410)	-0.0231 (-1.198)
Social Position	0.0014 (0.073)	0.0756*** (11.578)	-0.0446*** (-6.982)	0.0769*** (12.111)
Income	0.1069*** (5.487)	-0.0010 (-0.735)	0.0530*** (17.247)	-0.0019 (-1.457)
Health	0.0334* (1.937)	0.0372*** (6.967)	-0.0076 (-1.333)	0.0395*** (7.488)
Education	-0.1734*** (-13.553)	0.0891*** (11.772)	-0.1385*** (-17.264)	0.0914*** (12.646)
Dependant	0.1336*** (6.237)	-0.0227*** (-3.418)	0.0815*** (10.719)	-0.0263*** (-4.004)
Household Size	-0.0177*** (-4.390)	0.0077*** (2.582)	-0.0184*** (-5.348)	0.0132*** (4.344)
Cadre Parent	-0.0267 (-0.850)	0.0112 (0.530)	-0.0268 (-1.097)	0.0183 (0.867)
Urban Hukou	0.1014*** (4.091)	-0.0799*** (-5.994)	0.0986*** (5.576)	-0.0799*** (-5.976)
Real Estate	0.0016 (0.072)	-0.0100 (-0.622)	-0.0452*** (-2.590)	0.0455*** (3.086)
Social Security	-0.1320*** (-6.873)	0.0422*** (3.138)	-0.1080*** (-7.429)	0.0538*** (4.029)
Constant	-2.9618*** (-10.873)	1.2573*** (11.390)	-2.3634*** (-21.076)	1.3564*** (13.692)
Marginal Effect	17.14%***		46.29%***	
Controls	Y		Y	
FE	Province		Province #Year	
Endogeneity Test	14.57***		5303.63***	
Athrho	-0.9379***		-1.7834***	
Observations	52,869		52,869	
F Statistics	35.39***		11.45***	
WeakIV Test	AR	6.57**	17.51***	
	Wald	4.47**	4.85**	

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Table 4. *Social Trust on Heterogenous Entrepreneurial Status*

Variables	(1) Self Employed	(2) Trust	(4) Business Owner	(5) Trust
Trust	0.9063*** (127.209)		0.9084*** (116.462)	
Rice Civilisation		-0.0001*** (-55.789)		-0.0001*** (-56.103)
Constant	-2.4013*** (-20.594)	1.3564*** (13.692)	-3.3526*** (-15.020)	1.4050*** (13.828)
Marginal Effect	32.65%***		10.37%***	
Controls	Y		Y	
FE	Province #Year		Province #Year	
Endogeneity Test	2907.64***		2292.67***	
Athrho	-1.5947***		-1.5889***	
Observations	52,869		50,079	

Table 5. *Regionally Heterogenous Social Trust on Entrepreneurial Status*

Variables	(1) Eastern	(2) Western Entrepreneur	(3) Central
Trust #Eastern	0.1063 (0.015)		
Trust #Western		-0.0609 (-0.014)	
Trust #Central			-7.9935** (-2.457)
Trust	2.7342 (0.362)	2.8453** (2.219)	2.5657 (1.640)
Constant	-6.0580 (-0.417)	-7.2648** (-2.232)	-12.7715*** (-3.284)
Controls	Y		
FE	Province #Year		
Endogeneity Test	18.04***	18.07***	39.08***
Observations	52,869	52,869	52,869
F Statistics	11.45***	11.45***	11.45***
WeakIV Test	AR	17.79***	39.03***
	Wald	5.12*	4.98*

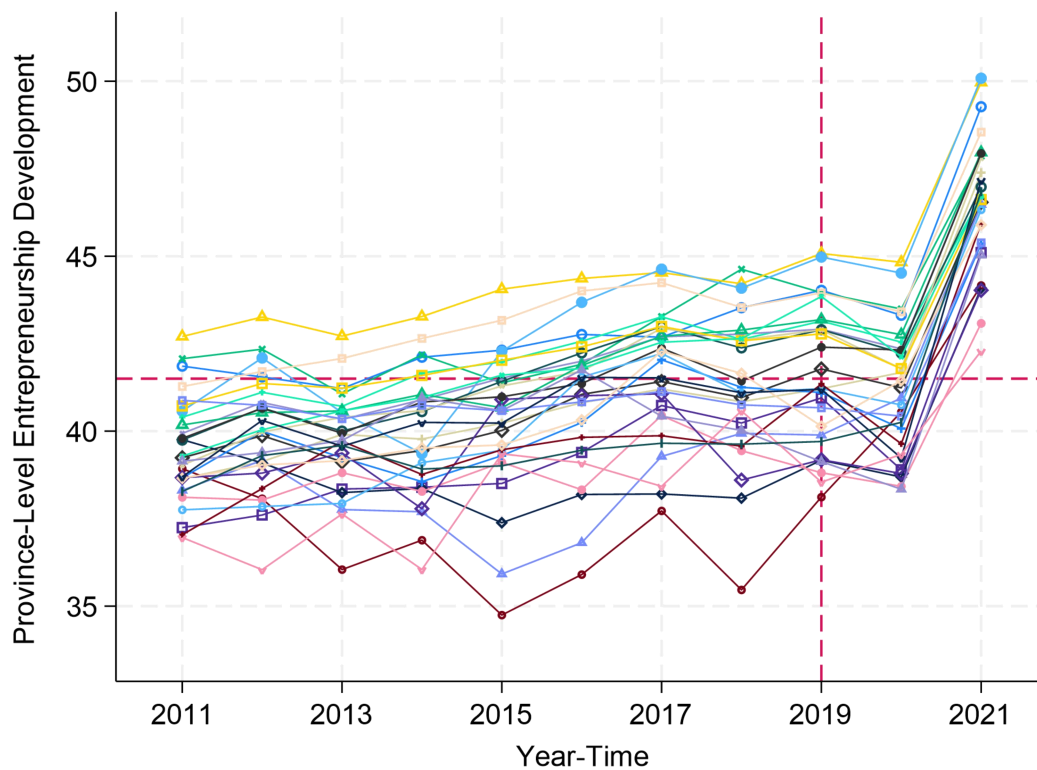
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Table 6. Regionally Heterogenous Social Trust on Heterogenous Entrepreneurial Status

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Eastern		Western		Central	
	Self Employed	Business Owner	Self Employed	Business Owner	Self Employed	Business Owner
Trust #Eastern	2.055 (0.361)	-4.342 (-0.328)				
Trust #Western			-1.198 (-0.314)	2.489 (0.480)		
Trust #Central					-7.720** (-2.380)	-3.147 (-1.304)
Trust	0.180 (0.031)	6.874 (0.500)	2.314** (2.037)	2.350 (1.590)	2.055 (1.289)	2.201** (2.011)
Constant	-1.399 (-0.124)	-16.592 (-0.601)	-6.849** (-2.379)	-7.420** (-2.191)	-11.512*** (-2.927)	-10.804*** (-3.749)
Controls	Y	Y	Y	Y	Y	Y
FE	Province #Year	Province #Year	Province #Year	Province #Year	Province #Year	Province #Year
Endogeneity Test	8.27**	8.15**	8.28**	8.17**	29.46***	7.29**
Observations	52,869	50,079	52,869	50,079	52,869	50,079
F Statistics	11.45***	11.54***	11.45***	11.54***	11.45***	11.54***

Figures

Figure 1. *Provincial-Level Entrepreneurship Development 2011–2021*



Notes: This figure is based on China’s listed company dataset at the provincial level. Data source is Zhang, S. (2024). The Entrepreneurial Spirit Database available at Perking University Open Data (<https://doi.org/10.18170/dvn/blevgr>).

Figure 2. *Share of Entrepreneurial Status*

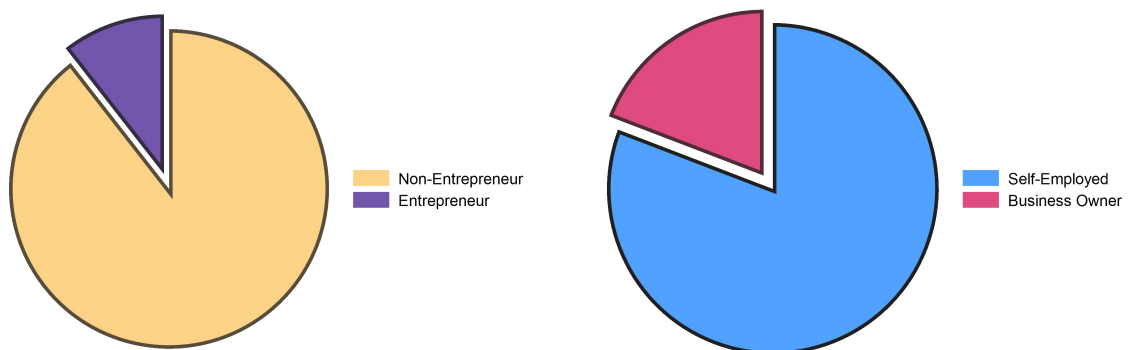


Figure 3. Provincial-Level Probability of Entrepreneurial Status

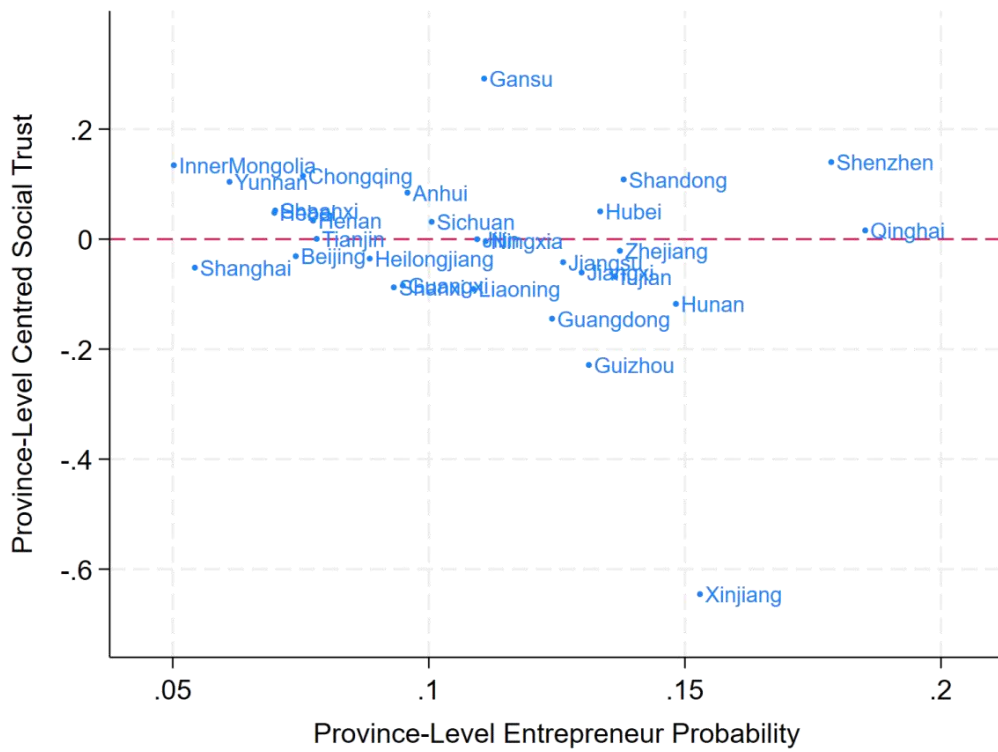


Figure 4. Rice Civilisation Tang–Qing



Appendices

Appendant Notes 1. *Definition of the Variables*

- Trust: The degree to which the respondent believes others in society are trustworthy, spotlighting interpersonal expectations and social interactions. Respondents rate their sense of social trust on a separate scale from 1 (lowest trustworthy) to 5 (highest trustworthy) as an ordinal variable, with higher values indicating stronger trust.
- Distrust: The degree to which the respondent believes others in society are untrustworthy, highlighting the skepticism in other individuals and the caution in social interactions. Respondents rate their sense of social distrust on a scale from 1 (lowest distrust) to 5 (highest distrust), with higher values suggesting weaker trust. It complements, without simply inverting, the ‘trust’ variable as an independent measure.
- Social Activity Frequency: The degree to which the respondent engages with their social environments, specifically through interactions with friends and neighbours. Respondents rate their social activity frequency on a scale from 0 (no/none interaction) to 7 (most interaction). It is measured by summing the frequency of two types of social interaction, with a total value from 0 to 14.
- Age: The age, the completed years of life, of the respondent measured as a continuous variable. It is calculated as the difference between the survey year and their birth year.
- Gender: Whether the respondent is a male. The binary variable is coded as 1 for ‘male’ and 0 for ‘female’. This approach can critically examine the role of a male-dominated social structure and gender disparity in entrepreneurial studies. Due to the CGSS design and China’s sociocultural context, this is a binary variable but self-reported that enables one to autonomously recount their identity thus representing the social gender more than a strictly biological classification. Despite that, available data capture no other classifier, and targeted survey design is called for future research on the ‘underrepresented’.
- Religion: Whether the respondent adheres to a religious belief. The binary variable is coded as 1 for ‘identifying with religions such as Islam, Christianity, folk beliefs, and others’ and 0 for ‘none’.
- Social Position: The socioeconomic position of the respondent. The ordinal variable is measured on a scale from 1 (lowest position) to 5 (highest position).

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- Income: The annual income of the respondent in CNY during the previous year's stage measured as a continuous variable.
- Health: The degree to which the physical health level of the respondent. The ordinal variable is measured from 1 (poorest health) to 5 (excellent health).
- Education: The degree to which the education level of the respondent. The ordinal variable is coded as 1 (primary & below), 2 (secondary), 3 (vocational), and 4 (regular higher education & above).
- Dependant: The total number of dependants in the respondent's household, including but not limited to children, adolescents, and adults who rely on the respondent for support and care measured as a continuous variable.
- Household Size: The sum of individuals in the respondent's household measured as a continuous variable.
- Cadre Parent: Whether the respondent has at least one parent who works for the government or other public institutions as a CCP member. The binary variable is 1 for 'yes' and 0 for 'no'.
- Urban Hukou: Whether the respondent holds an urban hukou. The binary variable is 1 for 'urban' and 0 for 'rural'.
- Real Estate: Whether the respondent owns a real estate. The binary variable is 1 for 'yes' and 0 for 'no'.

Appendant Notes 2. Moderation Effect of Social Security

Social security, as a protective formal institution, supplies basic income or compensation for those unemployed, retired, or with disability, enhancing the individual minimum lifetime income. Particularly, the pension system ensures a stable post-retirement income stream, securing decent lives and livelihoods. This merits investigation as the Polanyi (2001) critique of unregulated markets highlights the necessity of protective social policy to withstand market volatility, whereas the Schumpeterian (1980) creative destruction suggests that such security may temper necessary disruptions associated with entrepreneurial innovation. The ideas of Polanyi and Schumpeter are logically not incompatible. Withstanding the unchecked expansion of volatile markets is not equivalent to stifling innovation and the changes it brings. Anyhow, social security is therefore included as one of the controls in our research, given a possible negative causal relationship with entrepreneurship (as shown in Table 3). However, it is arduous to control for province-year fixed effects, cluster province-year-level errors, incorporate the rice civilisation instrument, and engage with the moderation of social security on regional heterogeneity all simultaneously. The reduced inference is thus as follows.

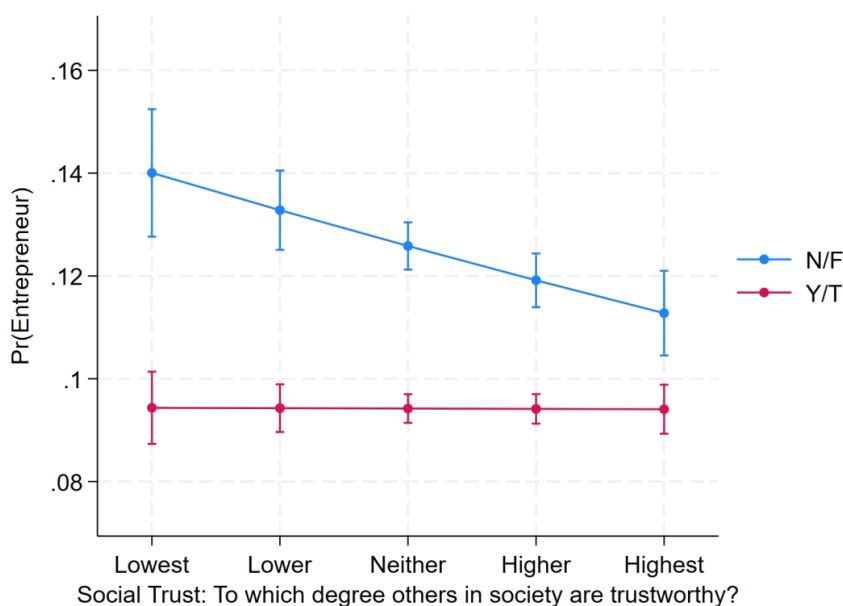
Notes 2 Table. Social Trust on Entrepreneurial Status with Social Security Moderation

Variables	(1)	(2)
Trust	-0.0701*** (0.024)	-0.0704*** (0.024)
Trust #Social Security	0.0545* (0.029)	0.0559* (0.029)
Constant	-6.4545*** (0.354)	-7.0906*** (0.374)
Controls	Y	Y
Marginal Effect	4.75%*	4.84%*
FE	Province	Province #Year
Observations	52,869	52,869

Endogeneity interference notwithstanding, the table and figure report an intuitive moderating effect. For individuals with social security, regression coefficients demonstrate a significant reversal from negative, evincing that the suppressive effect of social trust on entrepreneurship shrinks. In other words, the existence of the social security system mitigates the inhibitory influence of trust on entrepreneurial activities, although the degree of reversal cannot necessarily elevate the relationship to a level that outright foster entrepreneurship (see marginal effect, 4.75% and 4.84%, in Columns 1 & 2). In the following figure, the blue line illustrates that without social security, the probability of entrepreneurship decreases as social trust increases, with entrepreneurial probability falling from 14% to below 12%. In contrast,

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the red line indicates that with social security, increased trust is not triggering a decline in entrepreneurial probability. Judiciously interpreted, individuals with social security might not experience the same alarming negative relationship observed in those devoid of protection.



Notes 2 Figure. *Predictive Margins of Social Security*

For groups without social security, social trust significantly inhibits entrepreneurship. With absent protective social policy, social trust might rely on existing livelihoods, such as household labour, rather than entrepreneurship. Higher trust may generate a sense of security with substitution and suppression effects, where individuals are inclined to stable, established environments. By contrast, for groups with security, the inhibitory effect on entrepreneurship wanes and becomes modest. Considering the limited benefits by China's social security system, it is inferred that in cases of entrepreneurial failure, bankruptcy, and debt, modest benefits are meager to sustain decent livelihoods. The provisions are likely of limited utility to individuals and falling far short of offsetting entrepreneurial risks. Future research, with more accessible data and detailed survey design, is called to explore the degree to which social security can protect and support entrepreneurial endeavours.

Appendant Table 1. *Occupational Structure of China 2011–2021*

Type	Frequency	Percent
Business Owner	1,070	2.0%
Self Employed	4,515	8.5%
Regular Salaried Employee	17,003	32.1%
Contracted Employee & Informal Worker	619	1.2%
Temporary Employee & Gig Worker	2,683	5.1%
Family Business Employee	619	1.2%
Freelancer	673	1.3%
Peasant, Farmer, and Agricultural Worker	12,497	23.6%
Student	1,321	2.5%
Un- & Non-Employed	11,489	21.7%
Others	380	0.9%
Total	52,869	100%

Notes: Statistics are collected from CGSS survey data (<https://cgss.ruc.edu.cn>).

Appendant Table 2. *Variance Inflation Factor Multicollinearity Pretest*

Variable	VIF	1/VIF
Education	1.85	0.541187
Age	1.74	0.574498
Urban Hukou	1.36	0.736238
Health	1.2	0.833665
Dependant	1.16	0.860938
Household Size	1.09	0.918946
Social Security	1.08	0.92253
Social Position	1.08	0.924241
Real Estate	1.06	0.943167
Cadre Parent	1.05	0.955918
Gender	1.04	0.960318
Trust	1.02	0.978765
Income	1.02	0.979043
Religion	1.01	0.985914
Mean VIF	1.2	

Appendant Table 3. Correlation Pretest

	Entrepreneur	Self Employed	Business Owner
Entrepreneur	1		
Self Employed	0.889	1	
Business Owner	0.418	-0.044	1
Trust	-0.016	-0.016	-0.003
Age	-0.042	-0.035	-0.022
Gender	0.060	0.043	0.047
Religion	0.026	0.024	0.009
Social Position	0.056	0.031	0.060
Income	0.060	0.022	0.088
Health	0.077	0.063	0.043
Education	-0.014	-0.037	0.043
Dependant	0.099	0.089	0.040
Household Size	-0.004	0.008	-0.025
Cadre Parent	-0.005	-0.013	0.016
Urban Hukou	0.013	-0.006	0.040
Real Estate	0.013	0.011	0.006
Social Security	-0.033	-0.043	0.014

Appendant Table 4. Shock Timeframe Check

Variables	(1) Pre-COVID 2011–2018		(2) Post-COVID 2021	
	Entrepreneur	Trust	Entrepreneur	Trust
Trust	0.9345*** (142.447)		0.7119*** (3.799)	
Rice Civilisation		-0.0001*** (-52.427)		0.00002*** (4.974)
Constant	-2.2514*** (-18.782)	1.1942*** (11.920)	-3.4546*** (-11.418)	2.5626*** (11.765)
Controls	Y		Y	
FE	Province #Year		Province #Year	
Endogeneity Test	4556.07***		5.09**	
Athrho	-1.7766***		-0.9916**	
Observations	47,367		5,502	

Notes: The proliferation of misinformation, sensationalist media coverage, and deceptive propaganda ignited a crisis in social trust during the COVID-19 pandemic. Concurrently, extreme market uncertainty, startup financing obstacles, and global supply chain disruption exacerbated a more atrocious decline in entrepreneurial probability. However, the emerging flexibility of work-from-home post-pandemic generates a subtle effect on entrepreneurial intent (Barrios et al., 2024). To eliminate the interference of the pandemic on entrepreneurial probability and social trust, this research divides the dataset into pre-COVID (2011–2018) and post-COVID (2021). The results basically remain consistent.

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Appendant Table 5. Cross-Sectional Check

Variables	(1) 2011		(2) 2012			
	entrepreneur	trust	entrepreneur	trust		
trust	0.5083** (2.371)		0.9605*** (15.726)			
rice2_time		0.0001*** (4.303)		0.00001* (1.835)		
Constant	-3.3911*** (-4.222)	0.7053 (1.356)	-1.8452*** (-2.830)	0.9425*** (3.894)		
Controls	Y		Y			
FE	Province #Year		Province #Year			
Endogeneity Test	3.87**		7.70***			
Athrho	-0.6398**		-1.9044***			
Observations	4,343		8,901			
	(3) 2013		(4) 2015			
	(5) 2018					
	entrepreneur	trust	entrepreneur	trust	entrepreneur	trust
	0.9479*** (24.727)		0.8289*** (6.444)		0.9246*** (53.558)	
		0.00001*** (2.763)		0.0001*** (5.595)		-0.0001*** (-30.715)
	-2.4135*** (-4.679)	1.0726*** (4.554)	-2.4909*** (-6.118)	1.0445*** (4.443)	-2.3034*** (-8.185)	1.3922*** (6.295)
	Y		Y		Y	
	Province #Year		Province #Year		Province #Year	
	18.33***		11.29***		752.86***	
	-2.0066***		-1.1161***		-1.6650***	
	8,600		7,844		8,767	

Notes: Even though entrepreneurial status of individuals varied over time, a possible concern is that the causality identification through a historical instrument rooted in variation across regions as variation over time in informal institutions and social relations was marginal. Yet, one might concern an inflating sample size (De Luca et al., 2021). Hence, the check estimates the data of each year separately. The results basically remain consistent.

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Appendant Table 6. *Clustered Standard Error Check*

VARIABLES	(1) Clustered at ID		(2) Province		(3) Year	
	Entrepreneur	Trust	Entrepreneur	Trust	Entrepreneur	Trust
Trust	0.9302*** (19.758)		0.9302*** (104.276)		0.9302*** (97.141)	
Rice Civilisation		-0.0001*** (-2.739)		-0.0001*** (-47.152)		-0.0001*** (-48.829)
Constant	-2.3634*** (-6.076)	1.3564*** (13.788)	-2.3634*** (-15.759)	1.3564*** (9.789)	-2.3634*** (-11.361)	1.3564*** (6.683)
Controls	Y		Y		Y	
FE	Province #Year		Province #Year		Province #Year	
Endogeneity Test	18.33***		2233.03***		3755.02***	
Athrho	-1.7834***		-1.7834***		-1.7834***	
Observations	52,869		52,869		52,869	

Notes: Errors within specific groups might exhibit intra-cluster correlation, potentially triggering inaccurate standard error estimates if the structure is improperly accounted for. For instance, individuals within the same province were likely influenced by similar policies and economic growth conditions, which would induce correlation in error terms. Consequently, errors across different province-year interactions might be overestimated or underestimated. To tackle the interference of the clustering structure, this research supplements the regressions by clustering at the individual, provincial, and yearly levels. The results basically remain consistent.

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Appendant Table 7. Linear Model Check

Variables	(1)		(2)	
	Entrepreneur	Trust	Entrepreneur	Trust
Trust	0.2246*** (3.071)		0.5122*** (45.746)	
Rice Civilisation		-.0001*** (-4.79)		-.0001*** (-55.68)
Constant	-0.3048*** (-3.182)	1.2572*** (11.39)	-0.7723*** (-12.861)	1.3564*** (13.67)
Controls	Y		Y	
FE	Province		Province #Year	
Endogeneity Test	13.384***		7227.48***	
Observations	52,869		52,869	
F Statistics	1052.70***		3100.53***	
WeakIV Test	13.02***		7165.53***	

Notes: Entrepreneurial status is a binary dummy: 0 (non-entrepreneur) and 1 (entrepreneur), with either IV-Probit or Logit constrained by the CGSS design. If entrepreneurship were assumed as a process continuum—from entrepreneurial intent, decision-making, preparedness, or partial participation, to eventual success—a 0-to-1 (100%) continuous variable and a linear model would substitute the binary specification. However, due to data availability, this pro-process specification cannot realise on actual entrepreneurial probability; instead, a hypothetical 0–100% continuous variable and a 2SLS model is tested. The results basically remain consistent.

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Appendant Table 8. Propensity Score Matching Check

Variables	(1) Entrepreneur	(2) Trust
Trust	0.8937*** (13.453)	
Rice Civilisation		-0.0001** (-2.103)
Constant	-3.9518*** (-8.005)	2.9470*** (21.413)
Controls	Y	
FE	Province #Year	
Endogeneity Test	10.16**	
Athrho	-1.7082***	
Observations	28,579	

Notes: Entrepreneurial status seems influenced by self-selection and other non-random factors. Social groups engaging in entrepreneurship might exhibit merit educational attainment, tight entrepreneurial networks, steady fundraising, or other differences at the individual-group levels compared to non-entrepreneurs. The individual propensity to entrepreneurship can be modelled as a function of one's age, gender, health, household size, education, income, and whether with social security, real estate, cadre parent, or urban hukou (see Appendant Figure 3). To tackle the individual-group bias, propensity score matching is employed in additional validation. The results basically remain consistent.

Appendant Table 9. Winsorisation Check

Variables	(1) Entrepreneur	(2) Trust
Trust	0.9288*** (150.408)	
Rice Civilisation		-0.0001*** (-56.041)
Constant	-2.3815*** (-20.821)	1.3582*** (13.450)
Controls	Y	
FE	Province #Year	
Endogeneity Test	5362.50***	
Athrho	-1.7672***	
Observations	52,869	

Notes: Abnormal extreme values might exist within the dataset. To further validate the regression results, a two-sided 1% winsorisation was applied. This check substitutes values of variables below the 1st percentile with the 1st percentile, and those above the 99th percentile with the 99th percentile. The results basically remain consistent.

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Appendant Table 10. Explanatory Variable Check

Variables	(1)	(2)
	Entrepreneur	
Social Activity Frequency	0.0374*** (4.370)	
Social Distrust		-0.8921*** (-133.930)
Constant	-3.6294*** (-20.717)	2.3397*** (20.816)
Controls	Y	Y
FE	Province #Year	Province #Year
Observations	52,869	52,869

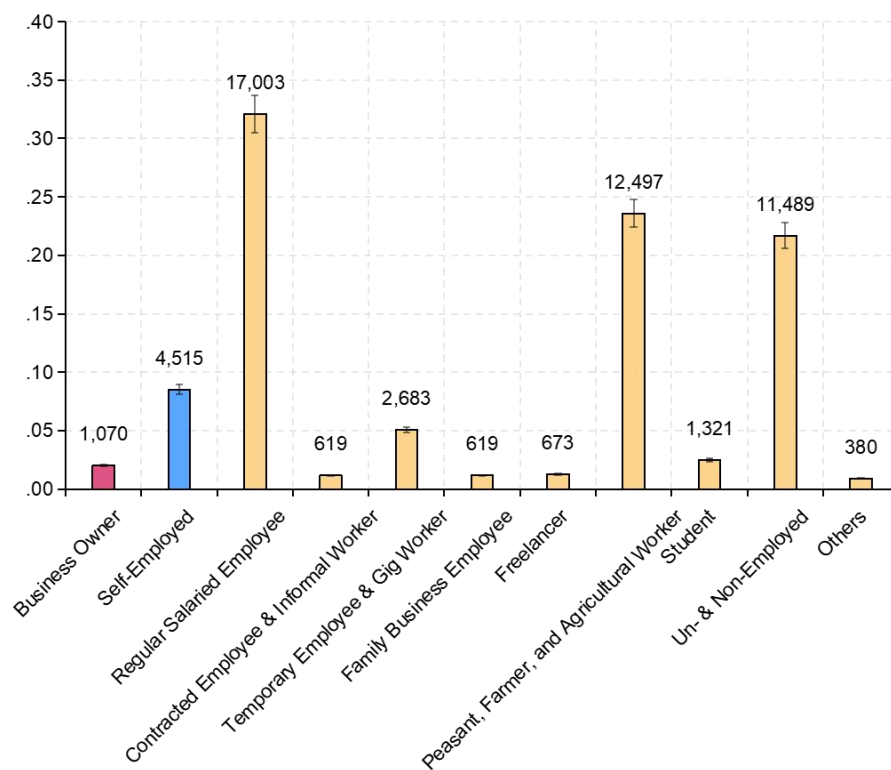
Notes: Beyond substituting the response variable in Table 4, the explanatory variable, trust, is also substituted to check the robustness. Social activity frequency is a representative variable, as a higher frequency of social interactions implies the capability and range of an individual's social networking and welcome familiarity with others, serving as a foundation for social trust. Therefore, social activity frequency can to some degree validate the role of social trust. Conversely, distrust, as the inverse of the endogenous explanatory trust, is used to verify the regressions from a contrary perspective (Kwon & Sohn, 2019). The coefficient of social activity frequency is significantly positive, and distrust is significantly negative—basically consistent.

Appendant Table 11. Control Variable Check

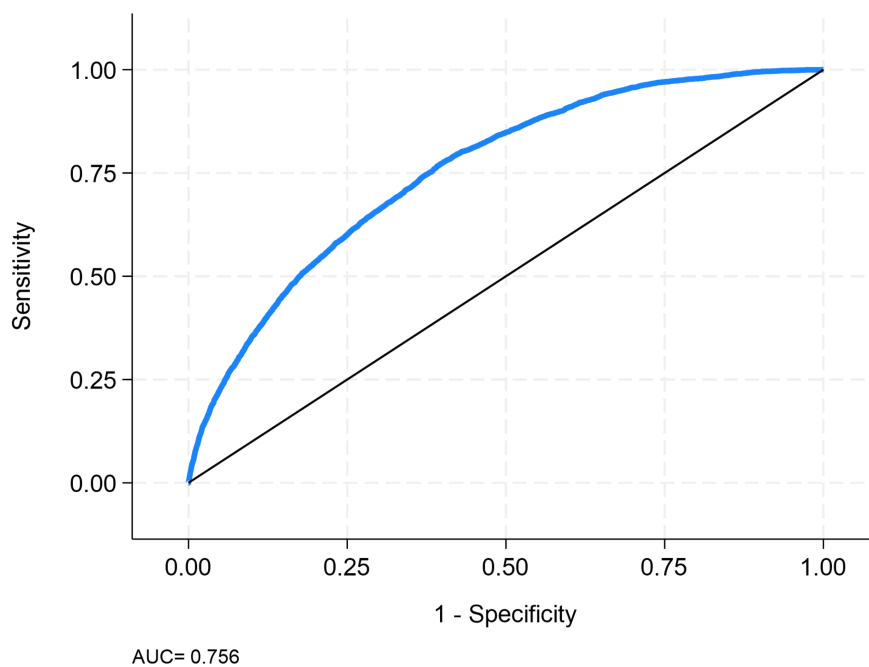
Variables	(1)	(2)
	Entrepreneur	Trust
Trust	0.9067*** (135.472)	
Rice Civilisation		-0.0001*** (-55.064)
Constant	-9.5467*** (-11.508)	5.1006*** (7.392)
Controls	Y	
FE	Province #Year	
Endogeneity Test	4109.70***	
Athrho	-1.5898***	
Observations	52,869	

Notes: The relationship between social trust and entrepreneurial status might be influenced by complex individual-level control variables. To tackle the complexity, the check incorporates squared interaction terms for key controls such as age, income, and education. The interaction terms enable the model to capture potential non-linearities and cross-effects between demographics and their impact on entrepreneurial probability. For instance, the influence of age might be inverted-U-shaped. Such nuanced modelling deepens our understanding of demographic characteristics. The results basically remain consistent.

Appendant Figure 1. *Occupational Structure of China 2011–2021*



Appendant Figure 2. *Sensitivity and Specificity Check*



Notes: The model demonstrates strong predictive power in entrepreneurial status. The overall classification accuracy is 89.45%, with remarkable specificity in negative case classification (99.93%). The AUC value (0.756) indicates the robust applicability and capability in distinguishing entrepreneurs and non-entrepreneurs within our data structure.

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Appendant Figure 3. *Propensity Score Matching Check*

