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Exploring the role of china's civilized cities in attracting foreign direct investment. A way forward to sustainable socioeconomic development

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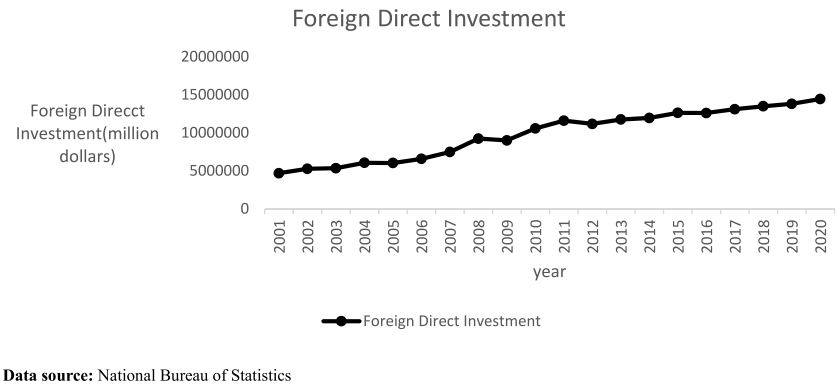
The cities dynamics and structures can be vital to attract foreign direct investment. Therefore, foreign investors prefer cities where they are confronted to lower volume or none of unexpected happening. The civilized locality is likely to be supportive in the operations of any business activity rendered by local or foreign firms. As the "highest honor" in the selection of cities, civilized cities have an important impact on attracting foreign direct investment. The paper attempts to evaluate the civilized cities as a quasi-natural experiment, and uses the staggered difference-in-difference model to evaluate the effect and mechanism of civilized cities evaluation on the FDI of selected cities. The results show that the honorary title of civilized city has a reputation of cumulative effect, and can significantly increase the scale of foreign direct investment in the city independent of the brands of low-carbon city, smart city, innovative city and pilot free trade zones. The three main ways to attract foreign investments can be materialized through enhancing urban infrastructure, attracting labor inflow and improving science and technology innovation.

KEYWORDS

civilized city, foreign direct investment, cumulative effect of reputation, staggered difference-in-difference model, China

1 Introduction

The Chinese foreign direct investment (FDI) exceeded to a trillion Yuan for the first time during 2021. The global FDI flows rebounded strongly, and are expected to exceed the levels seen before the New Crown epidemic, and UNCTAD forecasts that the outlook for global FDI growth in 2022 remains optimistic. During 2020, while FDI in many countries around the world almost fell sharply due to the new crown pneumonia epidemic, Still China capitalize well the FDI and the same increased to United States$212 billion, an increase of 14%, that made the country as the top ranked FDI country in the world.



Data source: National Bureau of Statistics

FIGURE 1
Trend of actual utilization of foreign direct investment in China.

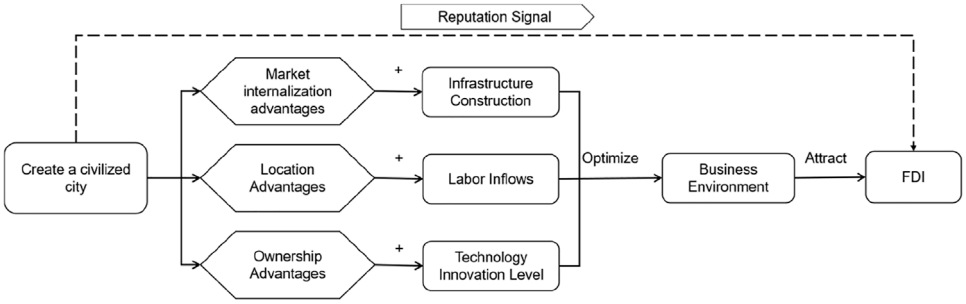


FIGURE 2
The theoretical mechanism of this paper is shown in Figure 2.

The level of foreign direct investment in China has continued to rise in the last 20 years (see Figure 1), but the problem of uneven regional investment distribution is becoming increasingly prominent, which is not only manifested between different regions or provinces, but also between cities. Therefore, a comprehensive and in-depth analysis of the uneven distribution of FDI utilization in Chinese cities plays an important role in solving the unbalanced development of domestic regions and promoting stable and sustainable socio-economic development (Lan et al., 2019; Jahanger et al., 2022; Yao & Ma, 2022).

In recent years, China has carried out the selection of national civilized cities, low-carbon city pilot policies, smart cities and innovative cities. Perhaps after evaluation the civilized cities are regarded as the most valuable city brands due to the complex measurement system and strict assessment criteria (Q. Chen & Mao, 2021; Q. Yang & Song, 2019). By 2020, a total of 146 prefecture-level cities have been awarded as civilized cities in six batches nationwide, a much higher number than in other city competitions (Q. Chen & Mao, 2021; Zhao & Wang, 2021). Civilized cities promote the progress of urban civilization in three aspects: "material" civilization, "human" civilization, and "institutional" civilization, and the government promotes the progress of urban civilization by investing financial resources, administrative authority, human resources, and social quality resources. By investing financial resources, administrative authority, human resources and social quality resources, the government aims to reduce transaction costs, create profit sources and promote the economic growth of the city (Lee et al., 2020). So, can the honorary title of civilized city further promote the stable growth of foreign direct investment? Does maintaining the honorary title of civilized city help attract FDI more? What is the mechanism by which the honorary title promotes the growth of FDI? Do differences in the financial level, administrative rank and geographical location of civilized cities affect the attractiveness of FDI? Answering these questions will provide a new perspective on how to attract high-quality foreign investment in areas that are not yet rated as civilized cities, and provide a basis for how civilized cities can

sustain the introduction of high-quality foreign investment (Jiang et al., 2022).

Therefore, this paper will focus on the following ideas: firstly, analyzing the mechanism of civilized city honorary title affecting foreign direct investment from the policy background; secondly, constructing a multi-period double difference model based on panel data of 234 prefecture-level cities in China from 2007-2017 to test the impact of civilized city honorary title on foreign direct investment; thirdly, testing the mechanism of civilized city affecting urban foreign direct investment; and finally, proposing policy recommendations to attract foreign direct investment from the perspective of creating civilized cities.

Figure 1 depicts that the FDI inflow to civilized cities in China is increasing from 2001 to present. This confirms that FDI first choice is always cities human, institutions and materials are civilized.

2 Literature review

Studies on the factors influencing foreign direct investment (FDI) have mostly focused on the Eclectic Theory of International Production (OLI) and the New Economic Geography Theory (NEG). Since Dunning (1977) proposed OLI, the issue of location choice of FDI has been widely discussed in academic circles. Early studies mostly focused on the impact of location factors such as market size, infrastructure, and labor cost on FDI. First of all, the essence of FDI is the location of manufacturers, and the main goal of investors is to occupy the host country market, as a guarantee of demand, market size is one of the primary considerations of investors (Glickman & Woodward, 1988). Secondly, as a prerequisite for the development of production and business activities, the sophistication and completeness of infrastructure is also an important factor affecting the location of foreign investment (Coughlin et al., 1990; Loewendahl, 2001). Conclusions on the impact of labor costs on foreign investment entry have not been unified, with one view advocating that rising labor costs inhibit foreign firms' willingness to invest (Graham & Wada, 2002; Duanmu et al., 2022), while the other view suggests that high wage levels imply high human capital and high market potential, which are signals to attract foreign investment inflows (Akinlo, 2004). In 1991, Krugman (1991) New Economic Geography (NEG) theory analyzed the impact of agglomeration economies and increasing returns to scale on manufacturers' spatial economic activities from a microscopic perspective. Agglomeration can bring down the average production cost, which in turn generates external economies of scale and exemplary effects on the next foreign direct investment decision. While, Y. J. C. e. r. Chen (2009) and Usman et al. (2021) found that the agglomeration effect of FDI in China is significant. European and American manufacturing companies tend to adopt an "agglomeration" strategy to capture the market (Pei et lal., 2021).

In addition to the influencing factors mentioned above, institutional factors are also one of the factors that cannot be ignored when foreign investment is made. Foreign scholars earlier examined the impact of host country institutional environment on multinational enterprises' investment Froot and Stein (1991), after which some studies confirmed that the host country's institutional environment and policy normativity determine the attractiveness to their foreign investment (Choi et al., 2016; Bailey, 2018). Domestic scholars have examined the impact of changes in the institutional environment caused by pilot policies on FDI (Ruiming & Renjie, 2016). City selection activities such as smart cities NIE and LIU (2019), innovative cities Ge and Dong Ming (2021), and low-carbon cities Liu et al. (2020) all affect the location choice of foreign investment. However, little literature is available to provide empirical evidence on the impact of civilized city pilot policies on FDI.

Being awarded as a civilized city will promote the development of the city through the signal effect, scale effect, structural effect and livelihood effect. The signaling effect of civilized cities is mainly reflected in two aspects, one is the incentive effect on the promotion work of local officials. The successful creation of civilized cities will be recognized and honored by the central government as an important signal for national value allocation work (Bach, 2010; Wu & Change, 2017; L. J. T. A. R. o. P. A. Yang, 2019). On the other hand, it is an attractive effect on the labor force. Zhu et al. (2021) found that civilized cities imply a high level of infrastructure, culture and education, and social security, which are important signals to attract labor inflow. The scale effect of a civilized city is reflected in the fact that the process of creating a civilized city is a process of improving the overall construction level of the city and releasing the economic vitality of the city, and the brand effect of a civilized city can further pull the local economic and social development (Iefymenko & Innovation, 2020; Mather et al., 2020). The structural effect is demonstrated by the fact that civilized cities can provide a good external environment for the high-quality development of enterprises (Zhang et al., 2018; Zheng et al., 2021). By strengthening environmental regulations after being awarded as a civilized city, all people are mobilized to participate in improving local infrastructure construction, promoting technological innovation and industrial structure upgrading, and thus optimizing environmental quality (Q. Chen & Mao, 2021). The people's livelihood effect, on the other hand, is manifested in the fact that being elected as a civilized city can improve the living environment, increase job opportunities, and improve people's livelihood (Gong F. et al., 2018; Peng P. et al., 2018). However, combing through existing studies reveals that few scholars have examined the policy effects of foreign direct investment in civilized cities that have been awarded the title.

While promoting local governments to compete for political performance, the civilized city competition also focuses on the investment of social governance resources and the scientific allocation of public power to achieve balanced local economic and social development (Cashore, 2002; Tang et al., 2014). However, existing studies rarely focus on the relationship between FDI and civilized cities at the same time. This paper will explore new paths to attract FDI around the quasi-natural experiment of being rated as a civilized city, and provide inspiration for continuing to promote civilized city selection as well as attracting FDI. Compared with existing studies, this paper has the following main differences: 1) The relationship between civilized city selection and FDI is explored for the first time in terms of research perspective. Compared with city evaluation activities such as low-carbon pilot cities, smart cities and innovative cities, civilized cities are the products of advanced stages of economic development, and as the honorary title of cities with the highest comprehensive level, the title has a significant positive effect on FDI. According to the cumulative effect of reputation, it is found that maintaining the honorary title is more helpful to attract foreign investment. 2) Based on the Eclectic Theory of International Production, the mechanism of attracting FDI in civilized cities is analyzed from three perspectives: market internalization advantage, location advantage and ownership advantage. It is found that civilized cities can influence FDI through enhancing infrastructure construction, attracting labor inflow and upgrading science and technology innovation. 3) In terms of model design, considering the characteristics of multi-batch and progressive promotion of civilized city selection activities, we further control for trend changes due to treatment time length and treatment queue heterogeneity, and construct a staggered difference-in-difference model to represent the impact of being awarded the honorary title of the civilized city on FDI. 4) In terms of research content, the policy effects of low-carbon pilot cities, innovative cities and smart cities on FDI are compared and analyzed, and heterogeneity is analyzed around the financial level, administrative rank and geographical location of cities.

3 Policy background and impact mechanism

3.1 Policy background

With the accelerated urbanization process, China's population has shifted from rural areas to cities in large numbers, and the construction and accumulation of urban civilization has been incorporated into the government management. The Central Steering Committee for the Construction of Spiritual Civilization has launched a civilized city selection campaign, aiming to call for active activities to create civilized cities. The national civilized city (prefecture-level city) measurement content can be broadly divided into eight categories: government, legal system, market, humanities, life, social and ecological environment and working mechanism. Among the measurement indicators affecting business investment decisions include: improving the administrative approval system, reducing approval matters, strengthening the construction of the Internet government information and data service platform, establishing credit information interoperability and exchange and sharing platform, etc. Local governments are bound to take these indicators as a grip in the process of innovating civilized cities to create a good external environment needed for enterprise investment. Therefore, these indicators provide a typical factual basis for this paper to study the mechanism of creating a civilized city to influence foreign investment decisions. In addition, the dynamic adjustment mechanism of national civilized cities ensures the long-term validity of the selection policy and releases strong and reliable signals for enterprises' investment decisions. 2005 to 2020, the Central Civilization Commission announced the results of a total of six batches of national civilized cities selection. This paper takes this as an example to study whether being selected as a national civilized city can motivate foreign investment.

Since the reform and opening up, China has provided preferential subsidy policies for foreign enterprises by taking advantage of its own resources (Jinping, 2004). China has achieved from initial exploration to high-quality development in attracting foreign direct investment, the state has gradually established and improved various policies on foreign direct investment, the means of attracting foreign investment has shifted from preferential policies to investment facilitation, and the management of foreign investment has shifted from focusing on scale to both quantity and quality. In recent years, the state has also issued a series of policies to deepen the opening to the outside world, increase investment efforts, deepen the reform of investment facilitation and protection of the legitimate rights and interests of foreign investment, and other aspects of stable foreign trade and stable foreign investment initiatives to further facilitate foreign-invested enterprises.

The above policy background reveals that there are two points of interaction between the policy of creating civilized cities and the policy of foreign direct investment. First, the timing is that China's accession to the WTO coincided with the transition period when the idea of civilized cities was moving from theory to practice, and the level of FDI in China was steadily increasing during that period, and the pilot work of civilized cities was in full swing Table 1. Second, policy-wise, investment facilitation mainly emphasizes on simplifying the investment process, mostly through optimizing the regional business environment Yabin (2016), which is also an important element of government management innovation and the "management and service" reform. Creating a national civilized city is to further create a beautiful urban environment, improve social management, and provide

quality services to optimize the business environment (Wen et al., 2021). The above analysis shows that civilized cities and foreign direct investment have high coupling in terms of time and policy, which in turn inspires this paper to explore in depth the impact of the honorary title of civilized cities on foreign direct investment.

3.2 Impact logic analysis

Reputation, as an intangible asset for long-term survival, needs to be built up gradually by investment and will fade away if it is not maintained (Tadelis, 1999). Reputation information theory states that "reputation information is transformed and disseminated among various stakeholders, forming reputation information flows, systems, and even networks that can effectively limit information distortions, increase transaction transparency, and improve market efficiency, thereby reducing transaction costs". The signaling mechanism of the reputation system centralizes and reports the information of past transactions and effectively links it to the utility of the current stage and the future stage, and the good reputation of the current stage also means the high utility of the future stage (Mailath, 1998). Therefore, reputation signals have a certain cumulative effect. Only cities that have passed the re-evaluation for three consecutive years are awarded the title of "Civilized City Pacesetter", while individual regions with outstanding problems are given warnings or even have their honorary titles revoked, and are subject to sanctions that have an extremely negative impact on the city's reputation. The process of receiving the honorary title of the civilized city is the accumulation of regional reputation signals, and the punishment mechanism of "one vote no" for a civilized city is a kind of reverse incentive for the elected city, forcing the local government to strengthen self-restraint to continue to maintain the welfare effect brought by this intangible asset and maintain the healthy operation of the market. At the same time, the reputation signaling effect of the honorary title will bring high-quality resources and innovation factors to the city, which is also an important factor influencing the inflow of foreign capital. Accordingly, Hypothesis 1 is proposed.

Hypothesis 1. The honorary title of a civilized city helps to attract the inflow of foreign capital, and keeping the honorary title will have a stronger effect on attracting foreign capital.

3.3 Mechanism analysis

As a typical non-economic championship, civilized cities have a wide social influence in China, and the impact of non-economic championships on the city economy is mainly achieved through optimizing the business environment. The honorary title of the civilized city itself conveys the signal of a beautiful environment, complete facilities and high-quality services to the outside world, which is an important factor to enhance the attractiveness, influence and overall value of the city. "If you bloom, butterflies will come", the city's soft and hard strength together to improve, to attract foreign investment, high-end talent, advanced technology has a vital role. The success of creating a civilized city as an important carrier to optimize the business environment will directly affect the number of foreign investment introductions and the level of future economic development (Wen et al., 2021). The following will analyze the mechanism of civilized city honorary title influencing foreign direct investment from market internalization advantage, location advantage and ownership advantage, respectively.

3.3.1 Infrastructure development

The advantages of market internalization are mainly in reducing and diversifying risks, reducing transaction costs and information costs caused by uncertainty in the transaction process. The completeness of information infrastructure construction and the convenience of transportation construction reduce transaction costs to a certain extent and determine the flow of capital. The indexes of "urban planning and construction" and "urban management and public services" are set up in the index system of civilized cities, which include urban infrastructure, public transportation, digital construction, etc. Infrastructure construction not only provides cities with production factors required for economic development, but also reduces spatial transportation costs and transaction costs for the production and sale of products and access to factors, provides a favorable hardware and software environment for enterprise development and industrial agglomeration, creates a convenient business environment, improves regional competitiveness, and enhances the attractiveness of foreign direct investment (Chen et al., 2020). Civilized cities with relatively complete infrastructure construction and relatively high level of public services are more likely to attract foreign investment inflows.

3.3.2 Labor inflow

The Eclectic Theory of International Production suggests that direct investment in general tends to target lower labor cost regions in search of cost advantages. Population migration theory suggests that the economy, culture, and service supply of incoming places will pull labor at the macro-level (Van Hear et al., 2018; Van Hear et al., 2018). Civilized cities have set up assessment indicators such as "maintenance of citizens' rights and interests" and "national education" in the assessment index system, and their honorary titles imply a relatively fair, stable, and comfortable living environment, which demonstrates a high level of urban governance and public services to the labor force. The honorary title means a relatively fair, stable and comfortable living environment, which demonstrates to the workforce a high level of urban governance and public services. Civilized cities can provide medical care, education, housing and employment conditions, which are important signals to attract labor inflow

(Xia & Lu, 2015). The inflow of labor will bring high-quality talents, further reduce the average production cost of labor, and provide convenience for foreign enterprises (Fan & Hao, 2020; Zheng et al., 2021).

3.3.3 Level of scientific and technological innovation

Ownership advantage means that a region has or can obtain advantages that other regions do not have or cannot obtain, including regional technological advantages. The indexes of civilized cities set the indicators of "R&D expenditure as a percentage of GDP", "expenditure on science and education" and "international Internet penetration rate" to measure the city's technological this means that to create a civilized city, the government must pay attention to high-tech investment and the city as a whole must have a higher innovation capacity (Johnson, 2008). Being rated as a civilized city can lead to the relocation and concentration of factors such as high technology and high-level talent, promote technological innovation, lower production costs for enterprises to improve production efficiency, optimize the business environment, and thus improve the core competitiveness of the city to seize the advantage in high-quality competition and attract high-quality foreign investment inflows (Da-xue and Lian-ju, 2010; Dirks et al., 2010). Through the above analysis, the following Hypothesis 2 is proposed.

Hypothesis 2. The civilized city selection campaign can optimize the city's business environment to attract foreign capital inflows by taking advantage of market internalization, location and ownership, mainly in three aspects: enhancing city infrastructure construction, attracting labor inflows and upgrading science and technology innovation.

4 Research design and data description

4.1 Data source and processing

Since 2005, civilized cities have been selected six times, and a total of 146 prefecture-level cities have been awarded the title of civilized cities. Considering the data availability, the time range of the study is fixed at 2007–2017, and the sixth batch of awarded cities are not included. Also referring to the studies of Hu and Shi (2021), and Jin et al., 2020, the nine civilized cities evaluated in the first batch were excluded, considering that the first batch of civilized cities was selected earlier and the selection criteria and norms were not yet perfected. Referring to the study by C. Zhang et al., 2021, considering that the fifth batch of civilized cities was announced in November 2017, the implementation time within the sample period was less than 1 year, which may not reflect the actual effect of the policy, so they were excluded from the sample. Finally, county-level cities, municipalities directly under the central government and cities with more serious data deficiencies are excluded. That is, this paper finally uses data from 234 prefecture-level cities from 2007–2017, with a total of 59 civilized cities in three batches selected in 2009, 2011, and 2015 as the experimental group and the remaining prefecture-level cities as the control group for empirical analysis. The experimental group and the control group are widely distributed in all provinces (regions) in China, and there are large differences in economic, industrial and other development levels, which can better avoid sample selectivity bias.

4.2 Model design

Given that the civilized city selection activity is progressive, the experimental groups in the sample receive treatment at inconsistent times, presenting multiple cohorts, and this study contains three batches of approved civilized cities, denoted by C = 1, 2, and 3. The heterogeneity of the treatment effects across time is due to the staggered timing, and thus the estimation bias. Therefore, under the premise that the experimental and control groups satisfy the assumption of parallel trends, this paper further controls for trend changes due to treatment duration and treatment cohort heterogeneity by referring to Goodman-Bacon (2021) and De Chaisemartin and d'Haultfoeuille (2020) constructs the following model to represent the effect of being awarded the honorary title of the civilized city on foreign direct investment.

$$FDI_{it} = \lambda_t + \mu_i + \gamma_g + \sum_{c=1}^{C}\sum_{p=1}^{P_c}\beta_{cp}DID_{cpit} + \varepsilon_{it}$$

where i and t denote city and time, respectively; FDI_{it} denotes the city FDI size; P refers to the longest duration for which cohort c receives treatment, DID_{cpit} is an indicator variable indicating whether an observation belongs to cohort c while receiving treatment in period p; β_{cp} denotes the average treatment effect in period p for cohort c; $control_{it}$ is a series of control variables, and ε_{it} is a random error term. In addition, this paper controls for both city fixed effects μ, year fixed effects λ, and treatment group fixed effects γ. The overall average treatment effect (i.e., including all treatment cohorts and durations) is given by:

$$\sum_{c=1}^{C}\sum_{p=1}^{P_c}\beta_{cp}P\left(D_{cpit} = 1|D_{it} = 1\right)$$

4.3 Variable descriptions

4.3.1 Explained variables

Foreign direct investment (FDI). The actual amount of foreign investment utilized by cities in the current year is

TABLE 1 Parallel trend tests.

	(1)
	FDI
pre6	0.1039
	(1.0235)
pre5	0.0103
	(0.1036)
pre4	0.0197
	(0.1706)
pre3	0.0051
	(0.0498)
pre2	−0.0631
	(−0.6755)
Current	0.1436
	(0.9549)
Controls	YES
Individual fixed effects	YES
Year fixed effects	YES
Processing Time*Group	YES
N	2574

*, **, and *** indicate significant at the 10%, 5%, and 1% significance levels, and values in parentheses are t-values.

chosen to be measured, converted to RMB and price deflated according to the average exchange rate of previous years while taking logarithms to avoid problems such as heteroscedasticity.

4.3.2 Core explanatory variables

Civilized city policy variables (DID). Based on the list of approved civilized cities released by "China Civilization Network", a policy dummy variable is constructed to portray the impact of the honorary title of the civilized city on FDI, which takes the value of 1 in the year when the civilized city is awarded, i.e., the year after, and 0 vice versa.

4.3.3 Control variables

Based on the research of scholars such as C. Wang et al. (2022), relevant variables were selected to control for city-level influencing factors, mainly including economic level (GDP), intensity of government fiscal expenditure (GOVERN), degree of financial development (FINANCE), investment in real estate development (ASSET), propensity to consume (APC), human capital (QLAB), industrial structure (INDUSTRY), capital-labor ratio (K/L), topographic relief (DEGREE), and fiscal balance ratio in 2007 (FISCAL_RATIO07). Except for the civilized cities policy variables, which were obtained from the list of civilized cities published by "China Civilization Network", the data of the remaining variables were obtained from the China City Statistical Yearbook, China Regional Economic Statistical Yearbook and provincial statistical yearbooks. The names, calculation methods and statistical indicators of all variables are shown in Table 2.

5 Empirical results and analysis

This firstly presents the results of the benchmark regression test for foreign direct investment in civilized cities with the honorary title, followed by a parallel trend test and a series of placebo tests to further prove the robustness of the benchmark regression results, and then examines the mechanism of the role of civilized cities with the honorary title in foreign direct investment in three aspects: infrastructure construction, labor inflow and science and technology innovation level. Finally, the heterogeneity of the sample is tested by grouping with the financial level, administrative level and geographical location of cities.

5.1 Baseline regression results

In this paper, a staggered difference-in-difference model is constructed to test the impact of civilized city honorary title on foreign direct investment, and Table 3 shows the regression results of model (1). Columns 1) and 2) are the results of uncontrolled treatment length and treatment cohort heterogeneity estimation, and columns 3) and 4) are the results of controlled treatment length and treatment cohort heterogeneity estimation.

The preliminary results confirm that the honorary title of the civilized city has a significant positive effect on foreign direct investment. The title of the civilized city does not happen overnight, and most of the cities need to participate for several consecutive terms to be awarded the title, which implies that the city has a high comprehensive development strength. The impact on foreign direct investment is firstly on the economic level, the prerequisite for the evaluation is to maintain economic development for two consecutive years above the national average, and economic factors are the primary consideration for foreign investors to choose the investment location, so the high level of economic development of civilized cities with high quality also provides a market guarantee for foreign enterprises. In addition to the assessment of the city's economic development level, the development of public services, labor force employment and social security are also important elements of the assessment. The honorary title of civilized city conveys to the outside world the improvement of the city's governance ability, as well as the improvement of the "hard environment" such as

TABLE 2 Descriptive statistical analysis of the variables.

name	variable descriptions	mean	sd
FDI	The actual amount of foreign investment utilized by cities in the year (billion yuan)	38.2772	75.3174
DID	The civilized city = 1, the opposite = 0	0.1228	0.3282
GDP	GDP per capita (thousand dollars)	39.3723	29.1357
GOVERN	Local fiscal general budget expenditure (billion yuan)	237.4755	218.8435
FINANCE	Deposits with financial institutions/loans with financial institutions*100	171.8827	57.4814
ASSET	Real estate development investment/GDP*100	198.2338	348.4869
APC	Total retail sales of social consumer goods/total wages of employees *100	364.9411	138.6743
QLAB	Elementary school students number*6 + general secondary school students number*9 + general higher school students number*15	22.4401	0.4105
INDUSTRY	Secondary industry value added as a proportion of GDP	49.1092	10.5
K/L	Total investment in fixed assets/employees number in urban units (million yuan)	26.4302	15.472
DGREE	Urban terrain undulation degree	3.9585	5.3641
FISCAL_RATIO07	Ratio of local revenue to fiscal expenditure in 2007	2.9036	2.1995

Data source: China City Statistical Yearbook, China Regional Economic Statistical Yearbook. The regression below takes logarithm treatment for variables with larger magnitude.

infrastructure and municipal construction, and the "soft environment" such as public services and ecological civilization. All of the above conditions will have an important impact on the location choice of foreign investors, who prefer to choose areas with a high level of economic development to ensure market demand, and also prefer to choose areas with sufficient supply of production materials to ensure the development of production and business activities. Therefore, civilized cities are more likely to attract foreign investors as cities with a higher level of comprehensive development.

5.2 Test of the cumulative effect of reputation

Considering that the honorary title of the civilized city is granted in batches, this study takes the second, third and fourth batches of approved cities as the main research subjects. Is there any difference in the effect of the honorary title of civilized cities on attracting FDI from different batches? Is there a cumulative effect of reputation on the honorary title of civilized cities? In order to test the above questions, this paper examines the effects of different batches of civilized city honorary titles on foreign direct investment respectively.

From the results in Table 4, it can be witnessed that the influence of the honorary title of the civilized city on foreign direct investment satisfies the cumulative effect of reputation. All three batches of civilized city honorary titles have a significant positive effect on foreign direct investment, but the coefficients of the third and fourth batches of civilized city honorary titles have a decreasing effect on foreign direct investment compared to the second batch of civilized cities. As an intangible asset and resource that cannot be ignored, the reputation of a city is essentially a reflection of its comprehensive service level. The reputation effect will force the city to strengthen the economic and civilization construction and improve the government service level. The annual review will provide a reverse incentive to the city's public services and administrative supervision, help improve market operation efficiency and transaction transparency, and reduce transaction costs. And under the reputation effect, civilized cities with a better social image are more likely to obtain high-quality resources, reduce information search and screening costs, and ease financing constraints to enhance regional production efficiency. At the same time, the central and local governments hope that the first-awarded cities can play a "demonstration effect" for the second-awarded cities and provide experience for them to learn from, and this "demonstration effect" will also provide great incentives for the first-awarded cities to make efforts to retain the honorary title of the civilized city. This "demonstration effect" will also provide a great incentive for the first-awarded cities to work hard to retain the honor of being a civilized city, and under the reputation effect, local governments will better adapt to the policy and promote regional productivity growth by investing in innovation and creating a quality business environment for foreign companies to facilitate investment.

5.3 Parallel trend test

To satisfy difference-in-difference model that the experimental group and the control group have the same trend of change before the implementation of the policy, it is necessary to identify whether

TABLE 3 Baseline regression results.

	(1)	(2)	(3)	(4)
	FDI	FDI	FDI	FDI
DID	0.3065**	0.2792*	0.2576*	0.3615**
	(2.0871)	(1.7548)	(1.7097)	(2.0108)
GDP		0.6333**		0.6391**
		(2.5053)		(2.4327)
GOVERN		0.4138		0.3997
		(1.6235)		(1.6030)
FINANCE		0.0017*		0.0017*
		(1.7862)		(1.8383)
ASSET		0.0149***		0.0153***
		(2.8776)		(2.9793)
APC		0.0008*		0.0009**
		(1.8357)		(2.0406)
QLAB		0.3787		0.4019
		(1.1710)		(1.2341)
INDUSTRY		0.007		0.0051
		(0.4789)		(0.3461)
K/L		0.0160***		0.0164***
		(2.9982)		(3.0509)
DGREE		−0.0452**		−0.0455**
		(−2.5407)		(−2.5312)
FISCAL_RATIO07		0.0335		0.0024
		(0.6622)		(0.0414)
Individual fixed effects	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES
Processing Time*Group	NO	NO	YES	YES
N	2574	2574	2574	2574

*, **, and *** indicate significant at the 10%, 5%, and 1% significance levels, and values in parentheses are t-values.

the size of foreign direct investment in this study has an upward trend before the implementation of the civilized city policy and this trend is not affected by the implementation of the policy. The solution to this doubt is to conduct a parallel trend test to ensure that there is no significant difference in the size of foreign direct investment in different cities before the implementation of the civilized city policy, then this selectivity bias is considered to have not caused bias in the estimation results. In this paper, we refer to Amore et al., 2013 treatment and construct time dummy variables interacted with policy variables using the year in which the civilized city was awarded and the previous 6 years into the following model regression.

$$FDI_{it} = \lambda_t + \mu_i + \gamma_g + \sum_{c=1}^{C}\sum_{p=1}^{P_c}\beta_{cp} pre_j cpit + \sum \beta_i control_{it} + \varepsilon_{it}$$

where *pre_j* is the interaction term of the time dummy variable and the policy dummy variable for the year in which the civilized city was awarded and the previous 6 years, $j \in \{0, 1, 2, 3, 4, 5, 6\}$, $j = 1$ indicates the year before the policy implementation, and β_κ is used as the benchmark time point. To identify whether there is a gap in the level of foreign direct investment in different cities relative to the benchmark time point if the estimated coefficient β_κ is not significant, it means that there is no significant difference in the level of foreign investment between the experimental group and the control group before the policy implementation, and the model passes the parallel trend test. The test results are shown in Table 4, the coefficients of all variables are not significant, indicating that there is no significant difference in foreign direct investment in cities before the implementation of the policy, which means that the rise in the scale of foreign direct investment is influenced by the creation of civilized cities, verifying the parallel trend hypothesis of the double difference model, so it is reasonable to believe that the honorary title of civilized cities expands the scale of foreign direct investment.

5.4 Robustness test

In order to further test the robustness of the civilized city policy effect, this paper conducts robustness tests from the following aspects.

5.4.1 PSM + DID

Considering that there may be sample selectivity bias between civilized and uncivilized cities, which affects the estimation results, this paper adopts the propensity score matching method (PSM) to re-match the control group to reduce the sample selection bias, and then uses the matched samples for difference-in-difference estimation. Referring to Jin et al. (2020), the control variables in the model 1) above are used as covariates, and the "k (k = 4) nearest neighbor matching" test is done year by year. The regression results in column 1) of Table 5 show that the honorary title of the civilized city still has a significant positive impact on foreign direct investment, which proves the feasibility of the PSM-DID method and the robustness of the underlying regression results.

5.4.2 Substitution of explanatory variables

The robustness of the regression results is further tested by using the variable replacement method, and the ratio of the actual amount of foreign investment utilized in cities to the year-end household population is used to express the scale of foreign direct investment in cities and included in the model regression, which controls the heterogeneity of regional population size to a certain extent. The results are shown in column 2) of Table 5. It can be found that after replacing the explanatory variables, the impact of the honorary title of civilized cities on FDI remains significant, but the coefficient

TABLE 4 Test of the cumulative effect of the reputation of civilized cities

	(1)	(2)	(3)
	Second batch	Third batch	Fourth batch
	FDI	FDI	FDI
DID	0.8356*	0.6209***	0.3500*
	(1.7379)	(2.6635)	(1.8972)
Controls	YES	YES	YES
Individual fixed effects	YES	YES	YES
Year fixed effects	YES	YES	YES
Processing Time*Group	YES	YES	YES
N	2574	2574	2574

*, **, and *** indicate significant at the 10%, 5%, and 1% significance levels, and values in parentheses are t-values.

TABLE 5 Robustness tests

	(1)	(2)	(3)	(4)	(5)	(6)
	PSM + DID	Substitute variable	Including the fifth batch	Winsorize regression	Placebo testing	Reverse causality testing
DID	0.3615**	0.3376**	0.3424**	0.3542**	0.0518	
	(2.0108)	(2.3838)	(2.1521)	(1.9682)	(0.0792)	
L2.FDI						0.0046
						(1.4900)
Controls	YES	YES	YES	YES	YES	YES
Individual fixed effects	YES	YES	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES	YES	YES
Processing Time*Group	YES	YES	YES	YES	YES	NO
N	2574	2574	2574	2574	2574	2574

*, **, and *** indicate significant at the 10%, 5%, and 1% significance levels, and values in parentheses are t-values.

decreases compared with the baseline regression, which on the one hand proves that the role of the honorary title of civilized cities in attracting foreign investment is real, and on the other hand indicates that the honorary title has a stronger impact on the overall development level of cities than the per capita development level, and using the overall level to measure the city It is more direct to measure the development of a city by its overall level.

5.4.3 Adding the fifth batch of civilized cities

In order to ensure the completeness of the analysis, the fifth batch of civilized cities is included in the sample for robustness testing. The regression results are shown in column 3) of Table 5, where the coefficients of the core explanatory variables are still significantly positive, further supporting the robustness of the baseline regression results. The regression coefficients have decreased, further indicating that the policy implementation effect response is not complete since that the latest batch of civilized cities has not been implemented for 1 year within the sample period, which also confirms the reasonableness of the sample treatment in this paper.

5.4.4 Tailoring treatment

In order to exclude the interference of data outliers on the regression results, this paper carries out the so-called 1% treatment on the relevant variables, and according to the estimated results in column 4) of Table 5, the magnitude and significance of the estimated coefficients of the core explanatory variables do not change significantly at this time, indicating that the baseline regression results in Table 3 are not affected by the data outliers.

5.4.5 Placebo test

In order to further argue that the increase in the size of foreign direct investment is brought about by obtaining the honorary title of the civilized city, the empirical results of this study are not randomized, and the following placebo test is conducted. Referring to Hsiao and Zhou (2019), the counterfactual test was constructed by repeating random sampling 1000 times and randomly changing the list of civilized city inductees, and the corresponding empirical test was conducted using model (1). If the result remains significantly positive, it indicates that the level of foreign direct investment is not affected by the honorary title of the civilized city. The results are shown in column 5) of Table 5, where the coefficients of the core explanatory variables are not significant, confirming that the influence of the honorary title of the civilized city on foreign direct investment is not from the influence of random factors, indicating that the results of the benchmark regression are robust.

6 Excluding other policy influences

Considering that similar city rating policies emerged during the same period of civilized city selection, and there has been relevant literature discussing the impact of low-carbon pilot cities, smart cities, innovative cities and Free Trade Zones (FTZs) on foreign direct investment. In order to exclude the interference of other city evaluation policies and examine whether other city honors have incentive effects on foreign direct investment, this paper refers to Hu and Shi (2021) and Jin et al. (2020), incorporates the four policies of low-carbon pilot cities, smart cities, innovative cities, and FTZs into the model 3) to demonstrate the net effect of civilized cities on foreign direct investment. If the coefficients of the core explanatory variables in the regression results are not significant, the attraction of civilized cities to foreign investment is considered not independent and the underlying regression results are not robust.

$$FDI_{it} = \lambda_t + \mu_i + \gamma_g + \sum_{c=1}^{C}\sum_{p=1}^{P_c}\beta_{cp}DID_{cpit} + \alpha_1 DT_{it} + \alpha_2 ZH_{it} + \alpha_3 CX_{it} + \sum \alpha_i control_{it} + \varepsilon_{it}$$

In model (3), DT reflects the role of low-carbon pilot cities in FDI, ZH reflects the role of smart cities, CX reflects the role of innovative cities, and ZM reflects the role of FDI in FTZs. The results are shown in Table 6, columns (1), (2), 3) and 4) are the regression results after including the four policies in turn, and column 5) is the combined impact result. It can be seen that the civilized city can attract FDI independently of other policies, but it is not the only honorary title that affects FDI; the policy effect of the civilized city honorary title exists simultaneously in the low-carbon pilot cities. Specifically, the policy effect of the civilized city honorary title on FDI is significantly positive when all four policies are included separately, and after including all policies, the estimation results show that the civilized city honorary title still has a significant positive effect on FDI, and the signal effect of smart city, innovative city and pilot free trade zone on attracting FDI is not significant, but the low-carbon pilot city has a significant inhibitory effect on FDI, which may be due to the fact that low-carbon pilot cities strengthen the pollution emission constraints on enterprises and raise their production costs, which to some extent inhibit the entry of foreign firms.

TABLE 6 Regression Results Excluding the Effect of other Policies

	(1)	(2)	(3)	(4)
	FDI	FDI	FDI	FDI
DID	0.3265**	0.2617*	0.2941*	0.2833*
	(2.1203)	(1.8340)	(1.9498)	(1.8890)
DT	−0.2685**			−0.2975**
	(−2.0291)			(−2.2521)
ZH		0.0637		0.0981
		(0.5975)		(0.9111)
CX			−0.0370	0.0200
			(−0.2781)	(0.1632)
Controls	YES	YES	YES	YES
Individual fixed effects	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES
Processing Time*Group	YES	YES	YES	YES
N	2574	2574	2574	2574

*, **, and *** indicate significant at the 10%, 5%, and 1% significance levels, and values in parentheses are t-values.

6.1 Mechanism test

Based on the results of the previous empirical analysis, it is found that being awarded the honorary title of the civilized city can attract foreign enterprises to invest and expand the scale of foreign investment. Through what mechanism does this honorary title have an impact on foreign direct investment? Is it consistent with the previous theoretical analysis? To investigate the mechanism behind the effect, the following model is constructed for identification testing.

$$Mediator_{it} = \lambda_t + \mu_i + \gamma_g + \sum_{c=1}^{C}\sum_{p=1}^{P_c}\beta_{cp}DID_{cpit} + \varepsilon_{it}$$

Where Mediator is the mechanism variable, based on the previous analysis, measured mainly in terms of infrastructure development, labor inflow and science technology innovation Level, and other variables are consistent with the model (1).

TABLE 7 Regression results of mechanism test

	(1)	(2)	(3)
	ROAD	LABOR	INTERNET
DID	5.4571*	0.0706**	24.5774**
	(1.6871)	(2.5481)	(2.3263)
Controls	YES	YES	YES
Individual fixed effects	YES	YES	YES
Year fixed effects	YES	YES	YES
Processing Time*Group	YES	YES	YES
N	2574	2574	2574

*, **, and *** indicate significant at the 10%, 5%, and 1% significance levels, and values in parentheses are t-values.

TABLE 8 Heterogeneous effects of civilized cities on foreign direct investment in different cities

	Group	DID		N
Economic level	Higher level	0.4248**	(2.3132)	1287
	Lower level	0.1831	(0.6189)	1287
Administrative grade	Higher grade	0.4030**	(1.9753)	374
	Lower grade	0.3874	(1.4257)	2200
City Location	Eastern Region	0.2244*	(1.6690)	825
	Central Region	0.3505**	(2.1819)	1221
	Western Region	0.5436	(0.7107)	528

*, **, and *** indicate significant at the 10%, 5%, and 1% significance levels, and values in parentheses are t-values.

Table 7 shows the results of testing the impact mechanism of civilized city honorary title on foreign direct investment. Columns 1) to 3) test the impact of the honorary title of the civilized city on infrastructure construction, labor inflow, and the level of science and technology innovation, respectively. This paper measures the level of urban infrastructure construction (ROAD) by the year-end actual paved road area share, urban labor force inflow (LABOR) by the number of urban unit employees at the end of the period, and urban science and technology innovation level (INTERNET) by the number of Internet broadband access households. The results in column 1) show that the honorary title of the civilized city can enhance the construction of urban infrastructure and thus expand the scale of foreign investment. This result indicates that in the process of participating in the creation of civilized cities, local governments increase their motivation to invest financially in public services and improve the level of urban public services. As an agglomeration center of material civilization, convenient road transportation in cities provides a solid material basis for reducing market transaction costs. As the saying goes, "To get rich, first build roads", convenient transportation is a necessary condition for economic development. High-quality road traffic construction can carry the high pressure of urban logistics and population passage, and efficient and convenient transportation and communication network is also an important manifestation of urban modernization. Fast information and communication facilities are conducive to speeding up the sending and receiving of information, improving work efficiency, saving communication costs of foreign enterprises, and becoming an important factor in attracting foreign investment.

Column 2) shows that the honorary title of the civilized city can effectively attract the inflow of labor. There is a certain economic growth effect of labor inflow. The most intuitive expression from the supply perspective is that labor inflow can increase the labor supply, accumulate human capital and enhance the innovation ability of cities. At the same time, the inflow of labor will lower the average wage level, which is also an important factor in forming the city's production cost advantage and an important driving force in attracting investment from foreign enterprises. From the perspective of demand, the large inflow of labor force will drive the city's consumption demand and further expand the market scale, which is undoubtedly the strongest attraction for foreign investors.

Column 3) regression results show that the honorary title of the civilized city helps to enhance the city's technological innovation ability. The assessment index of the civilized cities puts forward clear requirements for urban innovation, and technological innovation is the main driving force of urban development, especially in the era of prevalent intelligent technology, technological innovation ability reflects the technological level of cities to a certain extent, and higher innovation ability makes capital and labor match foreign investment at a higher level, and improves social labor productivity and efficiency of production factors use. By changing the supply and demand structure to drive industrial restructuring and promote sustainable economic development, it can also ease the contradiction between supply and demand of resources, manage environmental pollution, optimize the city's business environment and improve the convenience of foreign investment.

6.2 Heterogeneity analysis

In general, the honorary title of the civilized city can significantly promote the development of foreign direct investment in cities, but due to the different resource endowments and regional development strategies, there are significant differences in the development levels between different regions. Therefore, this paper examines the heterogeneous effects of different civilized cities' honorary titles on FDI from three aspects: economic level, administrative level and geographical location of cities.

6.2.1 Urban economic development Level

The median regional GDP of each city in 2007 was used as the boundary to divide the sample into two groups of high and low economic levels for regression. Table 8 shows that the honorary title of the civilized city has a more significant role in promoting FDI in cities with higher levels of economic development. The possible reason is that cities with a high level of economic development can absorb more human, material and financial resources and have a higher level of urban investment facilitation construction, which helps civilized cities play the role of honorary title signal to attract foreign investment. On the contrary, cities with the relatively low levels of economic development, relatively insufficient capital stock and relatively weak technical base, have relatively weak absorption capacity for foreign investment, which leads to the less obvious role of the honorary title of civilized city in attracting foreign direct investment.

6.2.2 City administrative level

According to the city level, provincial capitals, sub-provincial cities and larger cities are defined as high-ranking cities and the rest of the cities are low-ranking cities, and group regressions are conducted. The results in Table 6 show that for high-ranking cities, the honorary title of civilized city boosts the level of FDI, while this effect is not significant in low-ranking cities. The reason may be that the higher the administrative rank, the greater the political influence of the city, the more redistributed resources it receives, and the more it is "favored" by the central government in terms of financial subsidies, trade market openness, and FDI introduction. At the same time, cities with a higher administrative rank enjoy more resources at their disposal and possess more high-quality public resources, such as education, medical care, transportation, etc., which attract more people to gather and promote urban development and further provide market demand for foreign investors. On the contrary, cities with lower administrative levels have more difficulty in acquiring resources, have lower resource allocation capacity, have a larger gap with high-ranking cities, and the policy effect of the pilot is relatively weak.

6.2.3 Urban location

China is a vast region with large disparities in economic development levels between regions. In order to test whether there is a significant difference in the effect of civilized city honorary title on foreign direct investment among different regions, this paper regresses the eastern, central and western regions in groups respectively. The results are shown in Table 6, which shows that the honorary title of civilized city in the east and central regions has a significant positive effect on foreign direct investment, while the effect of the civilized city in the west is not significant. By virtue of its geographical location, preferential market-opening policies and cheap resources, the eastern region has become an important agglomeration center for economic and social development, which happens to be the main reason why the market is more open to the outside world and more likely to attract foreign investment. At the same time, cities in the east and central regions have higher management levels and more complete marketing channels, and have inherent advantages in introducing and mastering advanced science and technology equipment, and are more receptive to foreign enterprises, which is conducive to foreign investors to invest in the region. The western region, however, suffers from inconvenient transportation, a lower level of infrastructure construction and human capital, and a weaker foundation for urban development, which causes the pilot policy to introduce foreign direct investment is not obvious.

7 Discussion based on findings of the study

While going through the reported results it has been obtained that the honorary title of the civilized city is playing a key role in attracting FDI. As it is evident that FDI is attracted by some of the characteristics of the villages i.e. the city characterized by the attributes of being low carbon city, smart city, city of innovation and city of pilot free trade zone. The previous literature also document that civilized cities whatever it is specially is can be vital to attract the FDI (Ruiming & Renjie, 2016; Z. Wang et al., 2021). The honorary title of the civilized city has also connection with the reputation of the city. The longer existence of the village been known for the quality of many attributes specially reputation is providing attractiveness signal to the foreign investors. The literature support similar findings of the reputation of the village as source of attraction for FDI (Gong J. et al., 2018; Peng S. et al., 2018). Our results report that while exploring the mechanism analysis with focus on honorary title of the civilized city encourage market internalization, help to locate the ownership title, make the city environment business friendly that play pivotal role to attract foreign investment. As the mechanism effect make the urban infrastructure construction as FDI supportive, make deliberate labor inflow and continuously improve the technological innovation of the city which carry an impactful effect in bringing FDI. Many others also view that mechanism effect is pivotal to encourage FDI (Ge and Dong Ming, 2021). Our results in term of heterogeneous aspect of the civilized cities underpin that cities characterized by well administration, provincial capital and highly developed in term of economic development and also possess locational advantage are likely to attract foreign investors. The geographical location is playing significant role

in promoting the inflow of foreign investment, like the Chinese cities (Civilized Cities) in the east and central regions promote the introduction of FDI compared with the western regions. There are numerous studies in the body of knowledge that explored the heterogeneous effect of civilized cities in promoting FDI as vital source (Gao et al., 2022).

8 Conclusion and policy recommendations

Foreign investors first select country for their investment, and then evaluate various cities in the country based on numerous factors, i.e. facilities, law and order, economic profile, people civilization, existing enterprises, government intervention, labor force, technological innovation, and geographical location etc. As the "highest honor" in city selection activities, the civilized city is an important vehicle for optimizing the business environment and directly affects the amount of investment attracted to a city. Based on the panel data of prefecture-level cities from 2007 to 2017, this paper evaluates the impact of the honorary title of the civilized city on foreign direct investment and its mechanism of action using a staggered double-difference model. It is found that the honorary title of the civilized city significantly increases the scale of foreign direct investment in the city, and this policy effect remains under the effect of the low-carbon city, smart city, innovative city and pilot free trade zone policies. The honorary title of the civilized city has a cumulative effect on reputation, and the longer the honorary title lasts, the stronger the attractiveness to foreign investment. The results of the mechanism analysis show that the honorary title of the civilized city can play the advantages of market internalization, location and ownership, optimize the business environment of the city, and attract foreign investment by enhancing the level of urban infrastructure construction, attracting the inflow of labor, and improving the level of science and technology innovation in the city. The analysis of the heterogeneous results shows that, in terms of economic development level, the honorary title of the civilized city has a more significant effect on promoting FDI in cities with higher economic development level; in terms of administrative level, provincial capitals, sub-provincial cities and "larger cities" are more attractive to foreign enterprises; in terms of geographical location, compared with the western region, civilized cities in the east and central regions significantly promote foreign investment. In terms of geographical location, the civilized cities in the east and central regions promote the introduction of FDI compared with the western regions. Combining the results of the above empirical analysis, this paper proposes the following recommendations.

Firstly, the honorary title of the civilized city should be played and maintained to enhance the attractiveness of the city. Transform the competitiveness of civilized cities into productivity and improve the city's ability to attract foreign investment. Actively participate in the evaluation and competition, infrastructure construction, optimize urban factor allocation, reduce enterprise production costs, and provide guarantees for the high-quality development of the foreign direct investment. Emphasize the ability of civilized cities to attract talents, establish a sound mechanism to guarantee talents, ensure adequate labor supply and improve urban production efficiency. Increase investment in technological innovation, improve the ability of enterprises to innovate independently and establish the honorary title of civilized city to establish the image of the city and improve the core competitiveness. The policy effect and reputation accumulation effect of the civilized city evaluation and recognition will motivate the government to "compete for people's livelihood", motivate citizens to participate and work together to maintain the honorary title, give full play to the reputation mechanism of the civilized city, improve the efficiency of the market economy, promote the city's sustainable high-quality development, and become the internal motivation to attract foreign direct investment. It is an intrinsic motivation to attract foreign direct investment.

Second, optimize the city's business environment and reduce market transaction costs. Strengthen the construction of urban soft and hard environments, enhance, create a good investment environment, and improve the convenience of foreign investment.

Third, cities of different development levels and grades should adopt differentiated foreign investment introduction strategies according to local conditions. Enhance the financial support of cities, increase the investment in social public services and production factors, build a good financing environment, and reduce the transaction and operation risks of foreign-funded enterprises. Give full play to the advantages of administrative level and geographical location of cities to achieve a reasonable allocation of resources, optimize the business environment of cities, and promote the high-quality development of the foreign direct investment.

Fourth, China should make desperate efforts to enhance the size and number of civilized cities with a view to encourage more attraction of FDI as this will be termed as a stepping stone to be more prolific in term of obtaining sustainable socioeconomic development. Moreover the government of China should focus on the central and eastern regions as well to achieve highest level objectives. Future studies to compare the different civilized cities of the world known for the attraction of FDI.

Data availability statement

The raw data supporting the conclusion of this article will be made available by the authors, without undue reservation.

Author contributions

JH: Conceptualization, Methodology, Writing Original draft: ZC, Data curation, Software, AR Visualization, Investigation Supervision and MZ Supervision, Writing- Reviewing and Editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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