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Do Honored Cities Achieve a Sustainable Development? A Quasi-Natural Experimental Study Based on "National Civilized City" Campaign in China

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Abstract: As a new model of urban governance with Chinese characteristics, the national honored cities from city evaluation competitions, represented by the "National Civilized City" campaign, has always been popular among Chinese cities. Can the honored cities of the campaigns achieve sustainable development, and how? Based on the five concepts of sustainable development, which are innovation, coordination, green, openness and sharing, this study sets up a comprehensive index to measure the sustainability of the growth of a city. Then, the data of 242 Chinese cities from 2011 to 2019 and the difference-in-differences (DID) approach are used to evaluate the impacts of the Civilized City honored in the campaigns on the sustainability of growth. The results show that: (1) the "Civilized City" honor promotes sustainable development in Chinese cities; (2) the mechanism analysis shows that the "Civilized City" honor contributes to the sustainability of growth by effectively promoting the level of industrial agglomeration in cities; (3) further heterogeneity analysis shows that the effect of the "Civilized City" honor on the sustainability of growth varies by city size, the administrative level and the location of the city. By providing the evidence of economic effects of the "Civilized City" honor, this research rationalizes the city campaigns run by the Chinese government and provides important enlightenment for the continuous improvement of the selection mechanism of the national honored cities to promote sustainable development.

Keywords: sustainable development; sustainability; the "National Civilized City" campaign (the NCC campaign); industrial agglomeration; difference-in-differences

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1. Introduction

With the emerging of global resource and environmental problems, the concept of sustainable development has gradually been accepted by the international community. The 70th session of the United Nations General Assembly in 2015 adopted the 2030 Agenda for Sustainable Development. Since then, all countries have made unremitting efforts on sustainable development in economic, ecological, social and other aspects, and achieved remarkable results [1].

China has constantly practiced and enriched the concept of sustainable development. Since the 21st century, China's urbanization rate has risen from 36.2% in 2000 to 64.7% in 2021 (National Bureau of Statistics of China: http://www.stats.gov.cn (accessed on 1 October 2022)). With the rapid process of urbanization and industrialization, Chinese cities have continued to improve both in size and modernization. The life of the people in Chinese cities has been greatly improved. Meanwhile, the continuous influx of rural population into cities and the expansion of urban built-up areas have inevitably brought about "urban diseases", such as traffic congestion, air pollution, urban crime and lagging development of public facilities. In order to improve China's urban ecological environment, build a livable and business-friendly city, improve the quality of life of residents, and comprehensively promote sustainable development, the Chinese government has launched

a series of city evaluation competitions, including, but not limited to, national civilized cities, national sanitary cities, and national garden cities. The winning cities have been listed in the national honor city list [2]. To become an honored city in these national honor city lists has become a hot pursuit of Chines cities. Among them, the "National Civilized City" is widely recognized as the most valuable, difficult and influential campaign of the national honor city list project in China [3].

The "National Civilized City" (NCC hereafter) campaign was launched in 2003 and is mainly held every three years. It aims to promote the coordinated development of material civilization, political civilization, spiritual civilization and ecological civilization, to improve the urban environment, to improve the degree of urban civilization, and to build a harmonious and livable city. As a new model of urban governance with Chinese characteristics, the campaign of NCC has had an important impact on economic and social development [4]. Therefore, we are interested in, in the context of the global urgent concern for sustainable development, does the campaign of NCC contribute to the sustainable development of Chinese cities? If so, what is the impact mechanism? Furthermore, are there differences in the impacts of the honored cities by city size, administrative level and location? What are the reasons for the differences? The answers to these questions will help us to scientifically and comprehensively understand the role of the NCC campaign in urban sustainable development, will provide important enlightenment for continuously improving the institutional construction of city evaluation competitions, such as the NCC campaign, and promoting the implementation path of sustainable development in Chinese cites.

This paper proceeds as follows. The current research on the city evaluation competitions, including the NCC campaign, and their impacts on sustainable development are comprehensively and systematically reviewed in the next section to provides a solid theoretical basis for this study. Section 3 provides a theoretical discussion of the impact and the underlying mechanism of the honor of the NCC on urban sustainable development. In Section 4, we describe our dataset and our empirical strategies. Section 5 presents the empirical results and the discussion. Section 6 concludes by summarizing the results and policy implications.

2. Literature Review

In order to promote sustainable development, it is a typical practice for many countries to set a "model city" through city competitions [5], and the effects of the city competitions have been widely studied. The literature provides evidence of the impacts of the city competitions on five macro aspects of urban development. First, as for the aspect of macroeconomic growth, Gomes and Librer (2016), by evaluating the economic effects of the European Capital of Culture program, found that the GDP per capita of cities awarded as Capital of Culture is 4.5% higher than that of non-Capital of Culture cities, and that the economic growth effect persists for more than five years [6]. In contrast, Steiner et al. (2015) concluded that while the GDP per capita of Capital of Culture cities is higher than average, there was no significant causal effect [7]. As for the impact of the NCC campaign on macroeconomic growth in China, Huang and Zhou (2020) found that the economic growth effect of the NCC campaign is pronounced in China, especially for the five consecutively honored cities [2]. The contribution of the NCC campaign to economic growth of the honored cites has been confirmed by Yao et al. (2021) [8]. Further, the heterogeneity of the effect of the NCC campaign revealed by Qiao and Huang (2020) showed that the NCC campaign promotes economic growth only for cities with a high administrative level. It inhibits the economic growth of low administrative level cities [9]. Second, the NCC campaign has impacts on industrial development. Chen and Mao (2021) pointed out that the honored city is beneficial to the development of the tourism industry and enhanced the vitality and development prospects of the tourism economy [10]. Liu (2021) found that the honor of a "Civilized City" would help to upgrade the industrial structure by improving urban technological innovation capabilities and total factor productivity [11].

The third aspect is the impact on resources and environment. Li et al. (2020) discovered that the NCC campaign significantly improved the energy efficiency of resource-based cities in China [12]. Lu et al. (2020) provides supportive evidence of the contribution of the honor of a "Civilized City" in improving the urban environment and further reveal the mechanism of technological innovation and upgrading of industrial structure [13]. Huang (2022) also show that the honor of a "Civilized City" would help to reduce carbon emissions by influencing industrial structure [14]. Moreover, evidence shows that the NCC campaign not only helps to reduce local pollution emission intensity, but also has significant positive spatial spillover effect (Xu, 2020) [15]. Finally, the NCC campaign can affect the population flow and employment. Zhu et al. (2021) concluded that the NCC campaign helps the honored city to attract population inflow [16]. However, scholars do not agree on the impact of promoting employment. For example, Gong et al. (2018) argued that the NCC campaign helps improve people's living environment but does not attract more inflow of resources and create more jobs [17]. In contrast, based on the data of the China Mobility Monitoring Survey, Chen et al. (2018) found that both the employment rate and the satisfaction of the migrant population in the honored cities are significantly higher than the non-honored cities [18].

Besides the impacts on the macro-aspects, scholars also evaluated the impact of the NCC campaign on the behaviors and performance of enterprises from a micro perspective. Zhang et al. (2021) and Wang et al. (2022) both believe that the inherent requirements of the NCC campaign make the environmental performance of enterprises located in civilized cities higher than that of enterprises in uncivilized cities [19] and can improve corporate social responsibility to a certain extent [20]. By bringing about the improvement of infrastructure, the improvement of humanistic quality, and the standardization and transparency of the system in the honored cities, the NCC campaign helps to reduce the transaction cost, diversify the financial resources, promote the total factor productivity and labor productivity of enterprises, to increase the profits of the enterprises [21–23]. However, in contrast, Zheng and Zhang (2016) [24] took the "China Industrial Enterprise Database" as a sample and found that the NCC campaign significantly inhibited the profits of enterprises in the honored cities.

The above literature studies the important role of city competitions, such as the NCC campaign, in social and economic development from a certain aspect of the impact of the urban development, such as development scale, industrial structure, ecological environment, social livelihood and corporate performance. It is unknown whether the city competitions can promote the sustainable development of cities. Sustainable development is not only the result of economic development, but also focuses on the process and mode of development, including economic growth, environmental protection, resource allocation efficiency and social welfare [25,26]. Measuring sustainable development capacity requires a comprehensive evaluation system with multi-indicators.

To complete the literature gap, this paper aims to make contributions from the following three aspects. First, this study constructs an index of sustainable development from five dimensions of innovation, coordination, green, openness and sharing at the city level, and uses quasi natural experiments to explore the impact of China's NCC campaign on urban sustainable development. Second, it explores the transmission mechanism of the NCC campaign to urban sustainable development with industrial agglomeration as the intermediary variable. Third, this paper discusses the heterogeneity of the impact of the NCC campaign on the sustainable development in terms of the city size, the administrative level, and the location.

3. Research Hypotheses

As discussed in the above section, the NCC campaign in China promotes the overall and high-quality development of the city by promoting industrial development, improving the resource environment, enhancing population mobility and employment, and improving the level of enterprise productivity, it is expected that:

Hypothesis 1. *The NCC Campaign Promotes Sustainable Development in the Honored Cities.*

The sustainable development strategy has been fully implemented in China. Industrial development is still the core implementation carrier to achieve this strategy and goal. Industrial agglomeration is an important way to promote the sustainable development of regional economy by effectively exerting the positive externalities of enterprise production activities and integrating production factors. Urban civilization includes 'material' civilization, 'human' civilization and 'institutional' civilization [27]. The 'material' civilization means the improvement and optimization of public facilities in terms of "hardware", such as transportation and network information infrastructure. Storeygard (2016) pointed out that the improvement of these public facilities is conducive to the smooth flow of information and logistics between economic entities, reducing transaction costs and improving production efficiency, and promoting the spatial concentration of economic entities and factors [28]. Similarly, Krugman (1991) pointed out that the reduction of transportation cost is one of the main driving forces of industrial agglomeration [29]. In the process of building a civilized city, cities have also increased their efforts to introduce talents leading to 'human' civilization. For example, before and after Wuhan was rewarded as a national civilized city, it launched relevant policies to attract and seize talents, such as launching the project of "Employment and Entrepreneurship in Wuhan for One Million College Students ", relaxing the Hukou policy, and promoting preferential policies for housing purchase and rental. As a result, from 2015 to 2020, the net inflow population of Wuhan reached nearly three million. Taking Guanggu Valley, a high-tech industry cluster, as an example, the proportion of employees with bachelor's degree or above rose rapidly from 44.6% to 64.5%. The gathering of human resources will improve the level of industrial agglomeration and provide talent guarantee and support for the sustainable development of the city.

The 'institutional' civilization more reflected in the optimization of the "software" environment for economic and social development. The participation in the city competition will require the city government to carry out a good job in "decentralization, management and service" and strive to improve the service quality and efficiency. The NCC campaign can improve the standardization and transparency of the policy [23]. Thus, the improvement of civilization of institutions plays a positive role in shaping a good business environment and promoting the settlement and gathering of enterprises. Relevant literature shows that the improvement of urban civilization helps to optimize the market environment [21], reduce information asymmetry among enterprises, and reduce market transaction costs [22], thus promoting the agglomeration of enterprises and industries.

Industrial agglomeration contributes to sustainable development. Firstly, industrial agglomeration promotes diversified division of labor and creates technology and knowledge spillovers through mechanisms, such as sharing, matching and learning [30], and the resulting technological innovation and improvement in production efficiency promote urban sustainable development. Secondly, due to the development of digital technologies, such as the Internet, the sharing, matching and learning mechanisms of technology and knowledge are transmitted more rapidly throughout the highly dense space, thus forming a knowledge network that helps to enhance the regional technological innovation capacity [31], which is the core driving force of sustainable development. Thirdly, industrial agglomeration can promote the advanced industrial structure, and reduce the differences between regions and between urban and rural areas through the public policies aiming for rural revitalization. Fourthly, industrial agglomeration can effectively reduce resource consumption pollutant emissions [32], which promotes green development. Fifthly, with the concentration of labor that accompanies industrial agglomeration, it is inherently required to further improve the urban public services and it has naturally lead to the expansion of market size which effectively utilize the scale effect [33]. Last but not the least, industrial agglomeration enhances the financial capacity of the city that enables the city government to provide the infrastructure and public services shared by all citizens [34]. The enhanced social welfare is one of the inherent aspects of sustainable development.

Based on the above analysis, the following hypothesis was formulated:

Hypothesis 2. *The NCC Campaign Contributes to a City's Sustainable Development by Improving Its Industrial Agglomeration.*

4. Data and Empirical Design

4.1. An Index of Sustainable Development

The 17 Sustainable Development Goals (SDGs) were approved in September 2015 by the 193 Member States of the United Nations and provided a framework of sustainable development for environmental sustainability, social inclusion, economic development, peace, justice, good governance and partnership [35]. Based on 115 indicators under the 17 SDGs, the sustainable development index of each member country has been constructed. The global average SDG index score has increased steadily, except for a decline driven to a large extent by the outbreak of the COVID-19 pandemic in 2020 [36]. In terms of content, SDGs' development goals cover three aspects: social, economic and environmental, which provide a systematic framework and approach for regional sustainable development assessment. Scholars mostly evaluate sustainable development at the national level [37]. However, there is not such a workable indicator to measure the sustainable development capacity of cities. In 2015, Chinese President Xi Jinping proposed the five major development concepts of "innovation, coordination, green, openness and sharing", which cover multiple dimensions of economic development, structural and efficiency evaluation, economic and ecological coherence, and social and livelihood welfare, and have become the guiding ideology for a new development model of Chinese cities. In essence, these five concepts cover the content of sustainable development. Specifically, innovation is not only one of the goals of SDGs, but also the dynamic mechanism of achieving sustainable development. Coordination focuses on solving the problem of unbalanced development, and balanced development requires the coordination of economic development, social livelihood and environmental protection, responsible production and consumption, and balance between urban and rural areas. To make a green development path is an inevitable requirement for sustainable development. Openness means coordinating domestic and international forces to achieve development, and the realization of all SDGs requires concerted efforts among countries and international organizations. Sharing focuses on social equity and justice, which means inclusive growth and letting members of society share the fruits of development without leaving anyone behind. This is consistent with several SDGs.

It can be seen that these five development concepts are essentially consistent with the concept of sustainable development. Moreover, Chinese scholars have already used these five development concepts as a framework to build an index to evaluate the quality of economic growth at different scales of regions [38,39]. Therefore, this paper constructs an index of sustainable development at the city level by taking the five development concepts as the primary indicators and each one is further specified to several secondary indicators (Table 1 for details). The data are from the *China City Statistical Yearbook*, *China Statistical Yearbook On Environment*, and other statistical yearbooks of different regions.

Table 1. Indicators for the index of sustainable development.

Primary Indicators	Secondary Indicators	Unit	Indicator Attributes
Innovation Development	Number of invention patent applications granted	number	Positive indicators
Coordination Development	Urban-rural income gap	ratio	Negative indicators
	Rationalisation of industrial structure	index	Negative indicators
	Green total factor productivity	index	Positive indicators

Table 1. *Cont.*

Primary Indicators	Secondary Indicators	Unit	Indicator Attributes
Green Development	Harmless disposal rate of domestic waste	%	Positive indicators
	Integrated utilization rate of general industrial solid waste	%	Positive indicators
	PM2.5	micrograms per cubic meter	Negative indicators
Openness Development	Total imports and exports	1,000,000 RMB	Positive indicators
	Road passenger traffic	10,000 people	Positive indicators
	Digital Inclusive Finance Development Index	index	Positive indicators
Sharing Development	Number of hospital beds per ten thousand people	Number of beds/10,000 people	Positive indicators
	Education expenditure per capita	RMB/person	Positive indicators
	Number of Internet users	1000 households	Positive indicators

Innovation, as a source of power for economic development, should not only focus on the number of patents, but also on the quality of patents. Among the three types of patents (invention patents, utility model patents and design patents), invention patents are the most valuable and most directly reflective of innovation ability. Therefore, in this paper, the number of granted invention patents is chosen to measure the city's innovation development.

Coordination means to achieve balanced development between urban and rural areas, between industries, and between economic growth and environmental protection. Accordingly, three indicators are selected to represent the three types of balance relations. The urban–rural income gap, which is the ratio of urban per capita income to rural per capita income, is used to measure the level of coordination development between urban and rural areas. Following the practice of Gan et al. (2011), the Theil index, which represents the rationalization of industrial structure, is used to evaluate the degree of coordination among the three industries [40]. To measure the balance between economic growth and environmental restriction, we construct a green total factor productivity. Following the practice of Yu and Zhang (2021), the measure is based on the SBM model widely used by scholars, combined with the GML index, using labor, capital and energy as input factors, the actual GDP as the expected output, and industrial wastewater and sulfur dioxide emissions as unexpected outcomes [41]. Specifically, the labor input is the number of people employed in each city, the capital input is measured using the perpetual inventory method with a depreciation rate of 9.6% (using 2004 as the base period) and the energy input is electricity consumption. Green, namely ecological development guided by the idea of "green mountains are golden mountains", has become one of the important aspects for evaluating the level of urban governance and high-quality economic development in recent years. This paper integrates the practices of Jin et al. (2019) [42] and Zhao et al. (2020) [43] and choose the harmless treatment rate of domestic waste, the comprehensive utilization rate of general industrial solid waste, and PM2.5 as indicators of green development.

Openness, as an important driving force of China's economic and social development, is a mechanism of internal and external linkage for sustainable development. In addition to the two usual indicators, total import and export volume and highway passenger traffic volume, this paper also includes the Digital Inclusive Finance Index. This is because with the development of the digital economy, digital inclusive finance has a significant role to play in promoting enterprises' export trade and improving the open economic system [44,45]. At the same time, as digital inclusive finance has effectively alleviated the information asymmetry problem of financial services through big data technology, it improves the efficiency of capital allocation [46]. The Digital Inclusive Finance Index compiled by the Digital Finance Research Centre, led by Peking University, is used in this study [47].

Sharing, aiming to improve the quality of people's lives and leaving no one behind, is a superiority of Chinese socialism. The quantity and quality of public services and infrastructure are important factors affecting people's well-being [48]. Therefore, the number of hospital beds per capita, education expenditure per capita, and the number of Internet users are selected as measures of sharing development.

There are several methods to construct an index based on various factors, such as principal component analysis, entropy weighting method, composite index method, vertical and horizontal pulling gearing method, etc. Each method has its own advantages and suitability for different scenario settings. This paper follows the principal component analysis method used by Zhao et al. (2020) to synthesize the index of sustainable development Sd_{it} [43]. The first step is to normalize the values of the secondary indicators listed in Table 1, among which taking their inverse values for those of negative indicators. The second step is to conduct the principal component analysis using the normalized panel data. The resulting KMO statistic value was 0.80 and the p-value of Bartlett's spherical test was 0.00, indicating suitability for principal component analysis. Then, five principal components with eigenvalues greater than 1 were selected, and the cumulative variance contribution of the five principal components was 73.29%. Finally, taking the corresponding proportion of these five principal components in variance contribution as the weight, calculate the weighted average of these principal components, that is, the index of sustainable development (*Sd*). The statistics of the index of sustainable development will be reported in the section of data description.

4.2. Data and Statistics

In December 2021, the Blue Book of Sustainable Development: China's Sustainable Development Evaluation Report (2021), issued by the China International Economic Exchange Center and the Earth Research Institute of Columbia University, pointed out that from 2015 to 2019, China's sustainable development level showed a steady increase year by year [49], with significant economic strength, general improvement of people's livelihood, overall improvement of resources and environment, and significant consumption and emission control effects. The effect of governance and protection is gradually highlighted. Therefore, we want to know whether the effect of China's sustainable development after 2015 is intrinsically related to the NCC campaign in China.

Since the NCC campaign started in 2003 and held every three years, there are some cities that have been awarded the honor of NCC before the study period of this paper, 2011–2019. In order to avoid the cross interference of city campaigns in different years, we take the NCC campaign in 2015 as the research object and exclude the cities honored in other years' campaigns. The cities with serious missing data are removed and a few missing data are filled by the method of interpolation. As a result, a panel data of 242 cities from 2011 to 2019 are left in the empirical study. The data sources are the *China City Statistical Yearbook* and some statistical yearbooks of different regions.

Various control variables are included: (1) the level of economic development (*lngdppc*). Economic level is the foundation of sustainable development capability. Therefore, the per capita GDP (natural logarithm) is selected as the variable of city economic development level. (2) Population density (*lnpop*). It is used to control the influence of the scale effect brought by population concentration and the natural number of population density is chosen to measure. (3) Financial market size (*finance*). As an important factor of production, financial support is a booster for sustainable economic development. It is measured by the ratio of total deposits and loans of financial institutions to regional GDP. (4) Fiscal decentralization (fisde), as an index to measure the autonomy of local governments in allocating resources, has an important impact on urban economic development, public service supply and residents' welfare. It is measured by the ratio of budgetary revenue to budgetary expenditure.

To test the second hypothesis, the mechanism of the effect of the NCC campaign on sustainable development is to improve the city's level of industrial agglomeration, a variable of

industrial agglomeration is need. Location entropy is a common method used to measure the level of industrial agglomeration. Referring to the practice of Liu et al. (2019) [33], the industrial agglomeration level of a city is the weighted average of the location entropy of the three major industries (primary, secondary and tertiary industries) in the city, where the weights are the weights of these industries calculated by the entropy method. Specifically:

$$agg_{it} = \sum_{j=1}^{3} w_{jit} * \frac{I_{it}/Ia_i}{\sum_i^N I_{it}/\sum_i^N Ia_{it}} \quad (1)$$

where agg_{it} denotes the level of industrial agglomeration in city i in year t. I_{it}/Ia_i represents the proportion of the output value of a particular industry in city i in year t of the total output value of its city. Where $\sum_i^N I_{it}/\sum_i^N Ia_{it}$ represents the proportion of the output value of a particular industry in all cities to the total output value of the country. w_{jit} is the weight of a particular industry in city i in year t, which calculated by the entropy method and j = 1, 2, 3 representing primary, secondary and tertiary industries, respectively. The higher value of agg_{it}, the higher level of industrial agglomeration.

The descriptive statistics of all variables are shown in Table 2.

Table 2. Variable list and statistic descriptive.

Variable Category	Variable Name	Observations	Average	Standard Deviation	Minimum Value	Maximum Value
Explained variables	Index of sustainable development (Sd_{it})	2178	0.110	0.775	−2.622	6.310
Core explanatory variables	Civilized City (D_{it})	2178	0.069	0.253	0	1
Intermediate variables	Level of industrial agglomeration (agg_{it})	2178	1.129	0.232	0.676	2.323
Control variables	GDP per capita (lngdppc)	2178	10.55	0.606	8.730	13.19
	Population density (lnpop)	2178	5.683	0.911	1.628	7.923
	Level of financial development (finance)	2178	2.319	1.149	0.629	21.30
	Fiscal decentralization (fisde)	2178	0.422	0.197	0.069	1.541

4.3. Empirical Design

Difference-in-difference (DID) is used to evaluate the impact of the NCC campaign on urban sustainable development at city level. The basic regression equation used in the model was as follows:

$$Sd_{it} = \beta_0 + \beta_1 D_{it} + \beta_j X_{it} + \mu_i + \sigma_t + \varepsilon_{it} \quad (2)$$

where the explained variable Sd_{it} represents the index of sustainable development in city i in year t. D_{it} is the core explanatory variable and takes the value of 1 if that city i was granted the honor of "Civilized City" in year t, otherwise it takes the value of 0. X_{it} is a vector of the control variables introduced in the Section 4.2. μ_i are the individual solid effects, σ_t is the time fixed effect, and ε_{it} is the standard error.

In addition to assessing the direct effect in Equation (2), in order to explore the mechanism of the impact of the NCC campaign on urban sustainable development, the industrial agglomeration is taken as a mediating variable. Based on the baseline regression, the following model is constructed to identify the mediating effect:

$$agg_{it} = \alpha_0 + \alpha_1 D_{it} + \alpha_j X_{it} + \mu_i + \sigma_t + \varepsilon_{it} \quad (3)$$

$$Sd_{it} = \gamma_0 + \gamma_1 D_{it} + \gamma_2 agg_{it} + \gamma_j X_{it} + \mu_i + \sigma_t + \varepsilon_{it} \quad (4)$$

where agg_{it} represents the industrial agglomeration level of each city, α_1 represents the coefficient of the influence of a "Civilized City" on the level of industrial agglomeration, and γ_1 is the effects of NCC on the sustainability of the city development after adding the mediating variables, and γ_2 represents the coefficient of the impact of the industrial agglomeration on the sustainable development. The coefficients of α_1, γ_1, γ_2 and the significance of these regression coefficients are used to determine whether there is a mediating effect.

5. Empirical Results and Discussions

5.1. Results of Base Model

Table 3 reports the results of the impact of being an NCC on the index of sustainable development. In model (1), without control variables, it can be found that the estimated coefficient of the core explanatory variable, whether or not the city is rated as a "Civilized City" (D_{it}), is positive and significant. After the inclusion of the control variables, the results of model (2) show that the coefficient of D_{it} is still significantly positive at the 1% level, indicating that, compared with non-NCC, being awarded the honor of NCC contributes to the sustainable development of the NCC city. In other words, the NCC campaign in China makes cities that have won the title of NCC more outstanding in terms of urban sustainable development than cities that have not won the title of NCC. This supports Hypothesis 1. It can also be seen that the control variables of GDP per capita, population density and degree of financial development have a significant positive effect on sustainable development, indicating that the higher the GDP per capita, the more concentrated the population and the deeper the degree of financial development, the higher the sustainable development. The influence of these control variables on urban sustainable development is consistent with our expectations. However, the degree of fiscal decentralization has a negative effect on sustainable development. This may be related to the promotion mechanism of local officials in China. Because the superior government takes economic growth as an assessment of the performance of local governments, local government officials make excessive investment to stimulate economic growth, resulting in high local debt and low investment efficiency. This excessive financial autonomy is not conducive to sustainable urban development.

Table 3. Regression results of the effect of an NCC on the index of sustainable development.

Variables	Sd	
	(1)	(2)
D_{it}	0.177 ***	0.129 ***
	(4.43)	(3.62)
lngdppc		0.327 ***
		(6.23)
lnpop		1.479 ***
		(5.84)
finance		0.024 ***
		(3.36)
fisde		−0.222 **
		(−2.14)
Constant term	−0.122 ***	−11.938 ***
	(−20.89)	(−8.53)
City fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
N	2178	2178

Note: *t*-values with coefficients of variables are reported in parentheses, and ***, ** and * denote regression results passing significance tests at 1%, 5% and 10% confidence levels, respectively. Same as in the tables below.

5.2. Robustness Tests

5.2.1. Parallel Trend Test

To test the robustness of the DID results, the "parallel trend hypothesis" should be tested. This is to ensure that the treatment and control groups have the same trend of change

before the event of the NCC campaign. The event study method estimating the common trend before the event and the dynamic effect after the event by Jacobson (1993) [50] and Li et al. (2016) [51] was used.

$$Sd_{it} = \beta_0 + \sum_{t=2011}^{2019} \beta_j Y^j D_{it} + \beta_k X_{it} + \mu_i + \sigma_t + \varepsilon_{it} \quad (5)$$

Y^j in Equation (5) is a set of year dummy variables and $j = 0$ in the year 2015. Thus, Y^{-3} and Y^4 correspond to year 2012 and 2019, respectively. The estimated coefficients of the interaction terms between the year dummies with the treatment group dummy variables, β_j, are reported in Figure 1.

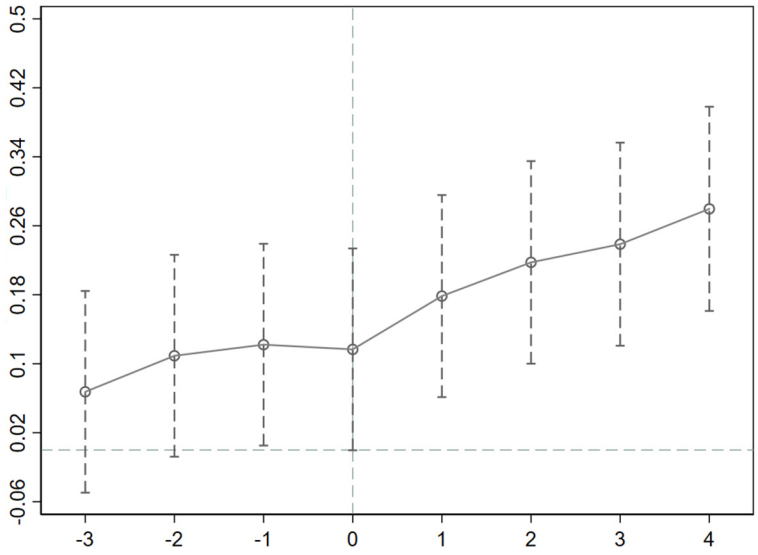

Figure 1. Parallel trend test.

It is shown that the estimated coefficients for 2012 to 2015, although positive, are not significant, indicating that there was no significant difference between the NCC cities and non-NCC cities before the NCC campaign. This suggests the data satisfy the parallel trend hypothesis. The estimated coefficients from 2016 to 2019 are significantly greater than zero at the 95% confidence level. It is suggested that after being awarded the honor of NCC, the level of sustainable development increases. Moreover, the coefficients show an increase trend with time. The effect of the honor of an NCC on the city's sustainable development increases over time. We believe that this is in line with the path of sustainable development. This is because the civilization of 'material', 'human' and 'institutions' in a "Civilized City" is accompanied by technological progress, industrial agglomeration, resource allocation efficiency and other improvements that contribute to the high-quality development of the city. This positive influence has a self-reinforcing effect, thus promoting the sustainable development of the city.

5.2.2. Placebo Test

We apply two approaches to conduct a placebo test. First, the groups of treatment cities and control cities are randomly generated. In order to make the impact of the NCC on a specific city become random, both the treatment and control groups were randomly selected in the full sample. A total of 30 sample cities were selected as the treatment group each time and the base model was run (model (2) in Table 3). The random sampling was repeated 500 times and the distribution of the obtained coefficients of the core explanatory variable D_{it} and its p-values are shown in Figure 2. The dashed vertical line in Figure 2 is the actual estimated coefficient from model (2) in Table 3. It is shown that the results of

placebo tests are close to zero and are significantly different from the coefficient of from model (2) in Table 3.

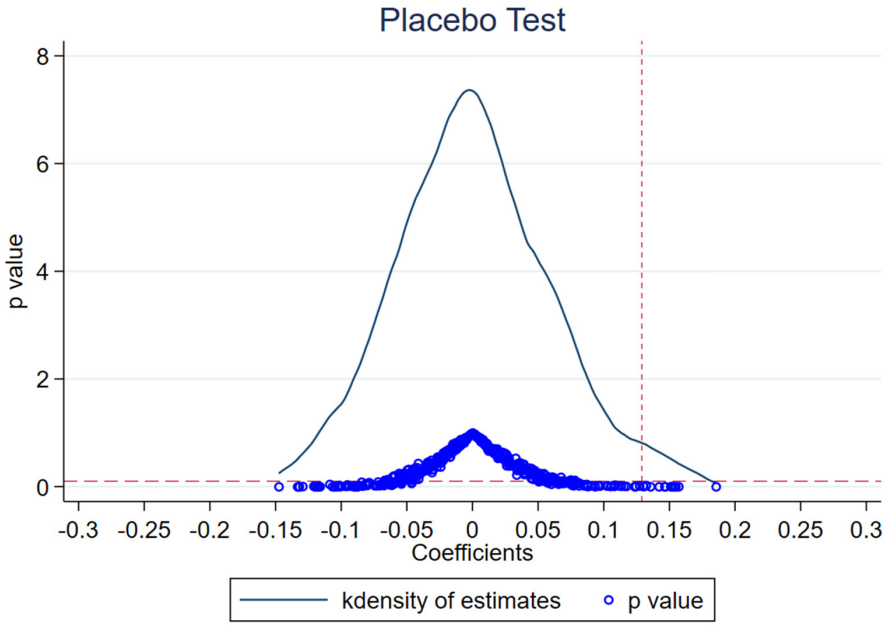

Figure 2. Results of placebo tests.

The second method is the counterfactual analysis. To perform the counterfactual analysis, advance the time node of the NCC campaign one year, two years and three years ahead, respectively. Specifically, suppose there were the NCC campaigns in 2012, 2013 and 2014, and keep the cities of the treatment group unchanged but exclude the observations in 2015 and after. The results in Table 4 show that the estimated coefficients (D_{it}) are not significant. It shows that the estimated effect of the NCC campaign on the index of sustainable development in the above base model is from the honor of the NCC in 2015, rather than the efforts made by the city government to participate in the campaign, such as more favorable talent policy. This again verifies the effectiveness of the result of the base model.

Table 4. Robustness test results: counterfactual tests.

Variables	Sd		
	2012	**2013**	**2014**
D_{it}	0.092	0.081	0.073
	(1.12)	(1.47)	(1.60)
Constant term	1.005	1.185	1.276
	(0.34)	(0.40)	(0.42)
Control variables	Yes	Yes	Yes
City fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
N	968	968	968

5.2.3. Endogeneity Problem

The NCC is not a typical random behavior since the honored cities are cities that had good performance in terms of economic development and environmental regulation before the campaign. Therefore, the method of DID cannot solve the problem of selection bias and lead to the problem of endogeneity. To address this issue, a comparable control group is constructed by including the honored cities in the next NCC campaign, which are the honored cities of the NCC campaign in 2017. In this way, the treatment group and the control group are comparable before the event in terms of qualification, urban governance and other factors influencing sustainable development. Thus, the endogeneity problem caused by the selection bias in the sample can be alleviated. As shown in the results of model (1) in Table 5, where the "Civilized Cities" in 2017 were selected as the control group[j], the positive effect of the honor of the NCC in 2005 is still significant at the 5% level, indicating that the finding that the honor of the NCC promotes sustainable development is very robust.

Table 5. Robustness test results: control the effects of endogeneity.

Variables	Different Control Groups	Control Provinces Fixed Effects	
	(1)	(2)	(3)
D_{it}	0.083 **	0.129 ***	0.083 **
	(2.02)	(3.62)	(2.24)
Constant term	−19.816 ***	−11.938 ***	−8.632 ***
	(−8.51)	(−8.53)	(−4.91)
Control variables	Yes	Yes	Yes
Province × Year	NO	NO	Yes
City fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
N	585	2178	2178

Note: (2) in Table 5 is the result of the benchmark regression.

The geographical distribution of the civilized cities is very uneven in China. The number of "Civilized Cities" at prefecture level in the economically leading provinces, especially Guangdong, Zhejiang and Jiangsu, is significantly higher than that of other provinces. This is because these provinces have advantages in many aspects, such as industrial agglomeration, urban governance and economic development. Therefore, in order to avoid endogeneity problems in the causality judgments of this paper due to the 'first mover advantage' of these provinces [42], the province fixed effects and the interaction terms between province and year are further controlled to alleviate the influence of macro system environment on the competition for the "Civilized City" and the results are reported in the last column of Table 5. It is shown that the result of positive effect of the NCC is still robust after controlling the systematic differences in macro factors.

5.3. Mechanism Analysis

Theoretically, it is hypothesized that the NCC campaign contributes to a city's capacity of sustainable development by improving its level of industrial agglomeration. To verify the mediating effect of industrial agglomeration, empirical models based on Equations (3) and (4) are constructed and the results are presented in Table 6.

Table 6. Results of the mediating effect of the industrial agglomeration.

Variables	Agg (1)	Sd (2)
D_{it}	0.004 ***	0.113 ***
	(3.42)	(3.26)
agg		4.333 ***
		(7.65)
Constant term	−0.551 ***	−9.551 ***
	(−10.81)	(−7.10)
Control variables	Yes	Yes
Urban fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
N	2178	2178

First, as suggested by the positive and significant coefficient of D_{it} in model (1) in Table 6, being a "Civilized City" contributes to promoting industrial agglomeration at the city level. In the NCC competition, the improvement of "hardware" facilities, such as transportation, network and information, coupled with the optimization and improvement of "software", such as innovation environment and business environment, plays a significant role in promoting the agglomeration of industries.

Then, both the estimated coefficients of D_{it} and agg_{it} in model (2) are positive and significant. On the one hand, it is shown that the higher the level of industrial agglomeration in the city, the more it can promote the sustainable development of the city. On the other hand, the positive effect of NCC on the sustainability of city development is still significant after adding the mediating variables. In other words, industrial agglomeration plays a mediating role in the effect of the NCC campaign on the city's capacity of sustainable development, which supports Hypothesis 2.

5.4. Heterogeneity Analyses

5.4.1. Heterogeneity by City Size

As defined by a Notice on Adjusting the Criteria for Classifying Cities by Size issued by the State Council of China in 2014, the cities with a population size above five million are super cities, and those with a population of over one million and under five million are big cities. Accordingly, we classify the cities into three groups, super cities, big cities and small cities, based on the data of the urban resident population in the 2019 *Urban Construction Statistical Yearbook* published by the Ministry of Housing and Urban-Rural Development. All three categories have sample cities that have been awarded the honor of the NCC in 2015. The core explanatory variable D_{it} is interacted with the dummies of city size in the regressions to explore whether the effect of the NCC campaign varies across cities by size. The results in Table 7 show that, compared with non-NCC, the effect of the honor of the NCC in "super" and "big" cities is positive and more significant, while it is negative but insignificant in the "small" cities. Moreover, the effect in the "super" cities is the biggest. The possible reason is that industrial agglomeration is more pronounced in larger, more densely populated cities. While a few small- and medium-sized cities have been awarded the title of "Civilized City", their urban functions are more concentrated in building a livable city, such as the cities of Weihai, Jinhua and Taizhou, which are all well known as livable cities. Moreover, advanced service industries and technology-intensive industries are not sufficiently developed in small- and medium-sized cities in China, which mainly take over the lower-end industries spilled from the super and big cities. Thus, these small- and medium-sized cities have insufficient innovation ability and openness, which hinder their sustainable development.

Table 7. Results of heterogeneity by city size.

Variables	Sd		
	(1)	(2)	(3)
D_{it} × super	0.793 ***		
	(4.07)		
D_{it} × big		0.176 ***	
		(4.23)	
D_{it} × small			−0.028
			(−0.55)
Constant term	−12.432 ***	0.176 ***	−13.049 ***
	(−5.04)	(4.23)	(−5.31)
Urban fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
N	2178	2178	2178

5.4.2. Heterogeneity by the Administrative Level

China has a large number of cities and has developed an administrative hierarchy of cities. There are significant differences in the inflow of resources, decision-making power and the effectiveness of governance by different administrative levels. Specifically, the higher the administrative level, the more favorable the inflow of production factors and the more advanced in the level of economic development. Therefore, the impact of the NCC on the level of sustainable development may vary by the administrative level. To explore this heterogeneity, this paper distinguishes the cities with a higher administrative level from those with a lower administrative level. The cities of higher administrative level include provincial capitals and sub-provincial cities, while all others are categorized as lower administrative level cities. The interactions between the dummies of the administrative level with the honored cities are introduced into the regressions. The results in Table 8 show that for provincial capitals and sub-provincial cities, the honor of the NCC significantly improve the level of sustainable development, while for lower-ranked cities, the effect of the NCC on sustainable development, although also positive, is not significant. The possible reasons include the facts that NCC cities with higher administrative levels have abundant resources that can be deployed, high resource allocation efficiency, and higher level of industrial agglomeration. However, for NCC cities with low administrative levels, due to their own development conditions, the governance capacity does not well match the inherent requirements of sustainable development, limiting the role of the honor of the NCC in promoting sustainable development.

Table 8. Results of heterogeneity by the administrative level.

Variables	Sd	
	(1)	(2)
D_{it} × higher	0.463 ***	
	(2.60)	
D_{it} × lower		0.015
		(0.23)
Constant term	−11.679 **	−12.966 ***
	(−5.79)	(−5.22)
City Effect	Yes	Yes
Time fixed effects	Yes	Yes
N	2178	2178

5.4.3. Heterogeneity by Region

China is a vast country with uneven social and economic development by region. There are significant differences in population and industrial agglomeration in the eastern, central, western and northeastern regions of China. Therefore, the influence of the NCC campaign in different regions on sustainable development may be heterogeneous. The results in Table 9 show that the impact of the NCC on sustainable development is the most prominent in the central China, both in terms of significance and the value of the coefficient. The honor of the NCC also promotes sustainable development in the eastern area. However, for the western and northeastern cities in China, there are no significant effects of the NCC campaign on sustainable development. This may be related to the relatively lagging development of China's western and northeastern regions. For example, cities in northeast China experienced economic downturn, continued population outflow and severe ageing of the population in recent years.

Table 9. Results of heterogeneity by region.

Variables	Sd			
	(1)	(2)	(3)	(4)
D_{it} × east	0.094 *			
	(1.95)			
D_{it} × central		0.228 ***		
		(3.70)		
D_{it} × west			0.094	
			(1.16)	
D_{it} × northeast				−0.138
				(−0.77)
Constant term	−12.068 ***	−12.437 ***	−12.471 ***	−12.435 ***
	(−8.45)	(−8.67)	(−8.67)	(−8.66)
Urban fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
N	2178	2178	2178	2178

6. Conclusions

The five major development concepts of "innovation, coordination, green, openness and sharing" proposed by Chinese President Xi Jinping are consistent with the concept of sustainable development in connotation, which provides ideas for building the sustainable development capability index of Chinese cities. The panel data of 242 cities in China from 2011 to 2019 and the DID method are used to test the effect and mechanism of the NCC campaign on sustainable development. The empirical study shows that there is a positive effect of being honored cities in the NCC campaign and the effect is robust. Mechanism analysis shows that competing for the honor effectively promotes the city's industrial agglomeration, so as to boost sustainable development. In addition, heterogeneity analysis shows that the effect varies by city size, the administrative level, and region. The effect of the NCC campaign on sustainable development is more evident in cities with a bigger city size, a higher administrative level, and cities in the eastern and central areas in China.

It is acknowledged that there may be other mechanisms influencing the effect of the NCC campaign on sustainable development. This paper has only explored the mechanism of the industrial agglomeration, and future research will need to continue to explore other mechanisms.

The National City Honor List, represented by the NCC campaign, is an important governance model for Chinese cities. This study finds that this governance model is of great significance for sustainable development. Therefore, firstly, it is important to fully acknowledge and adhere to the implementation of city competitions, such as the NCC campaign. Secondly, the central government should continuously improve and optimize the selection mechanism. It is effective to give full play to the agglomeration

economic effect of big cities, cities with high administrative levels, and eastern and central cities through competition. What is more critical is to encourage the backward regions to continuously improve their sustainable development level and narrow the regional differences by tilting resources to the backward regions, so as to achieve sustainable development nationwide. Finally, the integration of metropolitan areas and the formation of a unified market are the development directions of the country. The city competitions, such as the NCC campaign, should serve this direction. Therefore, it is necessary to break through the development model emphasizing the points of cities. While emphasizing the city's own development ability, the evaluation indicators should highlight the relationship between the city and the region, including the evaluation indicators for the integration of the city into the metropolitan area, so as to form a multi-regional linkage and grid type sustainable development pattern.

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References

1. Kroll, C.; Warchold, A.; Pradhan, P. Sustainable Development Goals (SDGs): Are we successful in turning trade-offs into synergies? *Palgrave Commun.* **2019**, *5*, 140. [CrossRef]
2. Yi, C.; Bi, T.; Huang, Z.; Fan, Z. Spatio-temporal Dynamics and Influencing Factors of National City Glory Lists: From the Perspective of Multi-honor Joint Creation. *J. East China Normal Univ. (Humanit. Soc. Sci.)* **2022**, *54*, 155–171+176.
3. Liu, S. The Incentive of "Commendation" in Policy Implementation—Taking the Establishment of A Civilized City in China as An Example. *Chin. Public Adm.* **2019**, *2*, 72–78.
4. Huang, S.; Zhou, Z. Non-economic tournaments and economic growth: An analysis based on the "five consecutive" national civilized cities. *Res. Financ. Econ. Issues* **2020**, *7*, 3–13.
5. Li, B. Top-down place-based competition and award: Local government incentives for non-GDP improvement in China. *J. Chin. Gov.* **2018**, *3*, 397–418. [CrossRef]
6. Gomes, P.; Librero, A. Evaluating three decades of the European Capital of Culture programme: A difference-in-differences approach. *J. Cult. Econ.* **2018**, *42*, 57–73. [CrossRef]
7. Steiner, L.; Frey, B.; Hotz, S. European Capitals of Culture and life satisfaction. *Urban Stud.* **2015**, *52*, 374–394. [CrossRef]
8. Yao, P.; Zhang, Z.; Sun, J.; Yan, H. Does City Brand Promote City Development? A Quasinatural Experimental Study Based on "National Civilized City". *J. Financ. Econ.* **2021**, *47*, 32–46.
9. Qiao, J.; Huang, Z. The impact of civilized city selection on urban economic growth: Promotion or suppression?-A quasi-natural experiment from civilized city selection. *Modern Financ. Econ.-J. Tianjin Univ. Financ. Econ.* **2020**, *40*, 98–113.
10. Chen, Q.; Mao, Y. Do City Honors Increase Tourism Economic Growth? A Quasi-Natural Experimental Research Study Based on "Civilized City" Selection in China. *Sustainability* **2021**, *13*, 12545. [CrossRef]
11. Liu, Z.; Liu, C. Research on the effect of civilized city on the upgrading of industrial structure: A quasi-natural experiment from the selection of civilized city. *Ind. Econ. Res.* **2021**, *1*, 43–55+85.
12. Li, B.; Han, Y.; Wang, C. Did civilized city policy improve energy efficiency of resource-based cities? Prefecture-level evidence. *Energy Policy* **2022**, *167*, 113081. [CrossRef]
13. Lu, J.; Zhao, Y.; Su, Y. "Civilized City" Selection and Environmental Pollution Control: A Quasi-natural Experiment. *J. Financ. Econ.* **2020**, *46*, 109–124.
14. Huang, G.; Zhao, G.; Huang, N. Appraisal-and-Commendation Policy and Carbon Emissions: Evidence from the National Civilised City Program in China. *Front. Energy Res.* **2022**, *10*, 955910. [CrossRef]
15. Xu, Z. How Does Evaluation and Recognition Promote Pollution Control? Empirical Evidence from the Evaluation of Civilized Cities. *J. Public Adm.* **2020**, *13*, 151–169+213.

16. Zhu, J.; Wang, Y.; Hou, L. How can the civilized city evaluation promote labor inflow? Quasi-natural experimental evidence from prefecture-level cities in China. *Ind. Econ. Res.* **2021**, *3*, 43–56.
17. Gong, F.; Li, B.; Lu, H. Analysis of the Livelihood Effect of Civilized Cities: Quasi–natural Experimental Evidence from Prefecture–level Cities. *J. Yunnan Univ. Financ. Econ.* **2018**, *34*, 3–17.
18. Chen, J.; Wu, Y.; Li, P. City Brand and Migrants' Job Location Choice. *J. Financ. Econ.* **2022**, *48*, 140–154.
19. Zhang, C.; Liu, Q.; Ge, G. The impact of government intervention on corporate environmental performance: Evidence from China's national civilized city award. *Financ. Res. Lett.* **2021**, *39*, 101624. [CrossRef]
20. Wang, Y.; Hou, L.; Zhu, J. How does the Establishment of Civilized Cities Generate "the Blood of Enterprise Morality"? Based on the Perspective of Corporate Social Responsibility. *J. Financ. Econ.* **2022**, *48*, 64–78.
21. Luo, D.; Tang, Q. The Performance of Institutional Environment Evidence from China's Private Listed Companies. *Econ. Res. J.* **2009**, *44*, 106–118.
22. Shi, D.; Hu, K.; Chen, J. Does urban civilization promote the high–quality development of enterprises? A research based on the perspectives of environmental regulation and transaction cost. *Ind. Econ. Res.* **2019**, *6*, 27–38.
23. Wu, H.; Wu, S.; Chen, F. Urban civilization, Transaction costs and Firm's Fourth Profit Source-Evidence from the Private Listed Companies and National Civilized Cities Base on KPSM-DID Method. *China Ind. Econ.* **2015**, *7*, 114–129.
24. Zheng, W.; Zhang, D. National Civilized City and Enterprise Performance: Micro Evidence Based on PSM-DID Method. *Ind. Econ. Res.* **2016**, *5*, 37–46.
25. Yang, Y.; Zhang, P. Logic, Measurement and Governance in China's High-quality Economic Development. *Econ. Res. J.* **2021**, *56*, 26–42.
26. Williams, C.; Millington, C. The diverse and contested meanings of sustainable development. *Geogr. J.* **2004**, *170*, 99–104. [CrossRef]
27. Jin, J.; Bao, Z. On the meaning of order in urban civilization. *Tianjin Soc. Sci.* **2011**, *2*, 4–9.
28. Storeygard, A. Father on Down the Road: Transport Costs, Trade and Urban Growth in Sub-Saharan Africa. *Rev. Econ. Stud.* **2016**, *83*, 1263–1295. [CrossRef]
29. Krugman, P. Increasing returns and economic geography. *J. Political Econ.* **1991**, *99*, 483–499. [CrossRef]
30. Marcus, B.; Robert, R.; Wang, P. Knowledge exchange, matching, and agglomeration. *J. Urban Econ.* **2006**, *60*, 69–95.
31. Hao, Y.; Cheng, S. Industrial Agglomeration, Technological Innovation and Economic Growth of Urban Agglomeration in the Middle Reaches of Yangtze River. *J. Ind. Technol. Econ.* **2019**, *38*, 41–48.
32. Zeng, D.; Zhao, L. Pollution havens and industrial agglomeration. *J. Environ. Econ. Manag.* **2009**, *58*, 141–153. [CrossRef]
33. Liu, X.; Zhang, P.; Shi, X. Industrial Agglomeration, Technological Innovation and High- quality Economic Development: Empirical Research based on China's Five Major Ur ban Agglomerations. *Reform* **2022**, *4*, 68–87.
34. Guo, W.; Huang, F. Industrial agglomeration and economic growth quality—An empirical analysis based on panel data of 82 countries worldwide. *Econ. Theory Bus. Manag.* **2021**, *41*, 37–51.
35. Gigliotti, M.; Schmidt-Traub, G.; Bastianoni, S. The Sustainable Development Goals. In *Encyclopedia of Ecology*, 2nd ed.; Elsevier Inc.: Amsterdam, The Netherlands, 2019; Volume 4, pp. 426–431.
36. United Nations. *The Sustainable Development Goals Report*; Cambridge University Press: Cambridge, UK, 2021.
37. Xu, Z.; Chau, S.; Chen, X.; Zhang, J.; Li, Y.; Dietz, T.; Wang, J.; Winkler, J.A.; Fan, F.; Huang, B. Assessing progress towards sustainable development over space and time. *Nature* **2020**, *577*, 74–78. [CrossRef] [PubMed]
38. Liu, Y.; Tian, C.; Cheng, L. Measurement and comparison of the level of high-quality development of the world economy. *Economist* **2020**, *5*, 69–78.
39. Huan, Z.; Yu, H. How does industrial co-agglomeration affect high-quality economic development? Evidence from Chengdu-Chongqing Economic Circle in China. *J. Clean. Prod.* **2022**, *371*, 133485.
40. Gan, C.; Zheng, R.; Yu, D. An Empirical Study on the Effects of Industrial Structure on Economic Growth and Fluctuations in China. *Econ. Res. J.* **2011**, *46*, 4–16+31.
41. Yu, S.; Zhang, J. The Calculation and Convergence Analysis of Provincial Green Total Factor Productivity in the Yangtze River Economic Belt. *Reform* **2021**, *4*, 68–77.
42. Jin, P.; Peng, C.; Song, M. Macroeconomic uncertainty, high-level innovation, and urban green development performance in China. *China Econ. Rev.* **2019**, *55*, 1–18. [CrossRef]
43. Zhao, T.; Zhang, Z.; Liang, S. Digital Economy, Entrepreneurship, and High-Quality Economic Development: Empirical Evidence from Urban China. *J. Manag. World* **2020**, *36*, 65–76.
44. Manova, K.; Yu, Z. How Firms Export: Processing vs. Ordinary Trade with Financial Frictions. *J. Int. Econ.* **2016**, *100*, 120–137. [CrossRef]
45. Teng, L.; Ma, D. Can Digital Finance Help to Promote High-quality Development? *Stat. Res.* **2020**, *37*, 80–92.
46. Zhang, M.; Xie, S.; Qiang, H.; Zheng, L. Digital Financial Inclusion and Export of SMEs: Timely Help or Additional Improvement. *J. World Econ.* **2022**, *45*, 30–56.
47. Zhang, X.; Wan, G.; Zhang, J.; He, Z. Digital Economy, Financial Inclusion, and Inclusive Growth. *Econ. Res. J.* **2019**, *54*, 71–86.
48. Wei, M.; Li, S. Study on Measuring of Economic High-Quality Development Level in China in the New Era. *J. Quant. Tech. Econ.* **2018**, *35*, 3–20.

49. Zhang, H.; Gou, D.; Wang, J. *Evaluation Report on the Sustainable Development of China*; Social Science Literature Press: Beijing, China, 2021.
50. Jacobson, L.; LaLonde, R.; Sullivan, D. Earnings Losses of Displaced Workers. *Am. Econ. Rev.* **1993**, *83*, 685–709.
51. Li, P.; Lu, Y.; Wang, J. Does Flattening Government Improve Economic Performance? Evidence from China. *J. Dev. Econ.* **2016**, *123*, 18–37. [CrossRef]