

Pilot Policies and Innovation Vitality: Empirical Evidence from China's National E-commerce Demonstration Cities

Lin Chongyu¹, Li Dong¹, Guo Xin²

¹School of Customs and Public Administration, Shanghai Customs College, Shanghai, China

²School of Business Administration and Customs Affairs, Shanghai Customs College, Shanghai, China

Email address:

stlinchongyu@163.com (Lin Chongyu)

To cite this article:

Lin Chongyu, Li Dong, Guo Xin. Pilot Policies and Innovation Vitality: Empirical Evidence from China's National E-commerce Demonstration Cities. *Economics*. Vol. 12, No. 2, 2023, pp. 44-52. doi: 10.11648/j.econ.20231202.12

Received: May 4, 2023; **Accepted:** May 23, 2023; **Published:** May 29, 2023

Abstract: A national e-commerce demonstration city is a city with a relatively popular application of e-commerce and a high annual e-commerce transaction volume, with the aim of reducing energy consumption and developing a green economy. It is an attempt by China to actively explore a unique modernization path with Chinese characteristics. We believe that in the new era, the transformation of urban e-commerce can increase innovation vitality, create more opportunities for people to achieve prosperity, and become an important new practical approach to promote common prosperity. Based on the policy experiment of national e-commerce demonstration city pilot construction as the main entry point of the project, this paper explores the process and development facts of China's innovation policy pilot construction, combines theoretical and empirical analysis, and uses multidimensional data and multiple econometrics methods to analyze and evaluate the innovation vitality of urban e-commerce transformation region influenced by mechanism and policy. Our research finds that the transformation of urban e-commerce plays a crucial role in activating urban innovation vitality and enhancing the market drivers of innovation vitality. We must unwaveringly consolidate and develop the public sector of the economy and expand financing and market access mechanisms, which will help to enhance innovation vitality and gradually improve the ability of market participants to achieve prosperity, thus facilitating the exploration and realization of the road to common prosperity.

Keywords: National E-commerce Demonstration City, Electronic Commerce, Policy Pilot, Innovation Vitality

1. Introduction

Currently, the world is entering a period of economic development dominated by the information industry. In 2021, the President of China pointed out that the new round of technological revolution and industrial transformation is reconstructing the global innovation map and reshaping the global economic structure. It is necessary to highlight the leading and pillar roles, prioritize the cultivation and vigorous development of a group of strategic emerging industry clusters, and build new pillars in the industrial system. It is necessary to promote the deep integration of the Internet, big data, and artificial intelligence with the real economy, develop the digital economy, and promote the establishment of a unified national market.

E-commerce, as a new business operation mode, has brought production enterprises, circulation enterprises,

consumers, and governments into a "new world" of network economy and digital survival. Currently, with the development of social economy and information technology, e-commerce is rapidly influencing various fields of the economy and society, bringing about significant changes in the way people consume and how businesses produce and operate [8]. The establishment of e-commerce websites is conducive to realizing the modernization and informatization of enterprises, and can also make the connection between production and sales more closely [11]. E-commerce is a catalyst for reducing information acquisition costs and has a significant driving effect on innovation vitality growth. Information is a very important resource in modern society, and information acquisition costs mainly include time costs, material input costs, attention costs, and information service payment costs [3]. The emergence of the Internet and the rise of e-commerce have made information acquisition more and more convenient, and can also reduce the information

acquisition costs of intermediaries and stabilize cash flow, which provides a broad platform for personal innovation vitality. An excellent information acquisition mechanism is the foundation and key for enterprises to achieve the integration of business and finance [21].

The digital economy has clearly promoted the improvement of the quality of urban economic development and has helped to form an economic pattern of coordinated development between regions, becoming an important force for promoting high-quality development in China in the new era [29]. In the era of the digital economy, various new business models have emerged, playing an important role in promoting the transformation and upgrading of traditional industries, expanding channels for innovation and innovation vitality, and enhancing economic development vitality [7]. In the era of the digital economy, the key is to enhance technological innovation capabilities and innovation vitality. The development of e-commerce has significantly changed the traditional business model while improving business efficiency and facilitating people's lives [12]. The transformation of cities into e-commerce centers

not only includes the online trading of traditional goods, but also industrial products. This transformation is accompanied by the upgrading of the industrial chain, the ascent.

So, does the transformation of urban e-commerce drive the innovation vitality of cities? If this effect is proven, what is the underlying mechanism? What are the differences in the characteristics and spatial patterns of the impact of e-commerce on urban innovation vitality? Therefore, this paper takes the construction of national e-commerce demonstration cities as a starting point for quasi-natural experiments and uses multi-period difference-in-differences (DID) methods to examine the impact of national e-commerce demonstration city construction on innovation vitality and its mechanism. By comparing with non-national e-commerce demonstration cities, this paper investigates whether the construction of e-commerce demonstration cities can promote innovation vitality, proposes policy recommendations that are conducive to urban innovation vitality, and explores how to use policy preferences to serve urban economic development.



Figure 1. Spatial distribution of China's National E-commerce demonstration cities in 2011 [8].



Figure 2. Spatial distribution of China's National E-commerce demonstration cities in 2014 [8].

2. Literature Review

This article examines the impact of urban e-commerce transformation on innovation vitality and the pilot evaluation of China's e-commerce demonstration cities. In order to review the research progress in these three areas in recent years, the relevant literature is divided into the following three categories for commentary.

2.1. Research on Urban Innovation Vitality

Mass innovation vitality is not only an important source of power for promoting economic growth, but also an important way to increase and expand employment [28]. Innovation vitality is the source of China's economic development and an important national policy for China's economic transformation [9, 18]. Innovation vitality is a process of discovering, identifying, and executing business opportunities that have not yet been developed, and entrepreneurial opportunities come from the surrounding environment in which entrepreneurs are located, making innovation vitality a regional event [4]. Currently, academic research on urban innovation vitality mainly focuses on the innovation environment, with some scholars focusing on the factors that affect urban innovation vitality. Zhuang Delin et al. analyzed the main factors of the evolution of the network spatial structure of innovation investment cities [30]. Chen Shuaiyu [1], Zhao Chunying [31], Lei Ting, and Peng Tao [10] discussed the impact of innovation investment on urban innovation vitality from the perspectives of capital operation management and efficiency. Deng Linbin and Dongfang explored the impact of the reduction of information acquisition costs on urban innovation vitality from the perspective of information management [3]. Song Xiaohua et al. discussed the impact of information acquisition mechanisms on urban innovation vitality from the perspective of enterprise financial integration [21]. Ye Wenping et al. found that larger market size, stronger knowledge spillover effects, and lower intermediate input prices are important driving forces for attracting the mobile population, especially entrepreneurial individuals, to cities, thereby promoting entrepreneurial activity in cities [28]. Other scholars such as Florida and Gates, Zhou Yinggang [32], and others have focused on the impact of urban inclusivity on urban innovation vitality. Literature on urban innovation vitality provided some literature references for this project.

2.2. Research on E-commerce

With the development of socio-economy and information technology, e-commerce is rapidly affecting various fields of the economy and society, result in significant changes in the way residents consume and enterprises operate [8]. E-commerce is known as the "new engine" of foreign trade, with its overall proportion in China's foreign trade continuously rising and its driving force on economic development constantly strengthening, thus producing

increasing benefits for China's economic development [19]. According to Zeng Yiwu et al., based on data from the National Bureau of Statistics, the national e-commerce transaction volume increased from 26.1 trillion yuan to 37.21 trillion yuan from 2016 to 2020, with an average annual growth rate of 9.3%. According to the "2020 China E-commerce Report" by the Ministry of Commerce, during the "13th Five-Year Plan" period, China established bilateral cooperation mechanisms with 22 countries, creating a new business card for "Silk Road E-commerce" [33]. Additionally, Guo Siwei et al. enriched the research on e-commerce from the perspectives of exploring market demand potential, stimulating consumption means, and realizing industrial cluster upgrading [5], while Lv Xinfu explored various aspects of e-commerce website establishment [11].

2.3. Policy Pilots and Innovation Vitality-Related Research

Policy pilots are a unique and important mechanism of China's governance model and institutional reform [25]. Domestic scholars have conducted research on a series of policy pilots, such as innovation-oriented city pilots [13, 23], smart city pilots [14, 36, 37], national independent innovation demonstration zones [20, 24, 27], and free trade experimental zones [6, 17], among others. Policy pilots are a special and important mechanism in the process of Chinese policy practice, and also an important factor in explaining the success of China's reform, playing a vital role in promoting China's economic and institutional transformation.

Wu Lin and Huang Zheng used the propensity score matching method to explore the impact mechanism of fiscal policies and policy information on the profit growth of innovation enterprises [26]. Zhou Yixiang discussed the impact of appropriate policy systems on innovation vitality from the perspectives of situational factors, policy supply-demand matching, and entrepreneurs' perceived value [34]. Chen Linlin et al. discussed the impact of economic policy uncertainty on the high-quality development of urban innovation vitality from the perspective of market entities [2]. Li Yao et al. explored the impact of a rational policy system and efficient implementation on enhancing the overall innovation vitality of a city from the perspective of innovation vitality financing [15]. Li Liying and Du Zhuo discussed the impact of network policies on urban innovation vitality from the perspective of the information economy [16]. Suolang Baizong studied the impact of the completeness of policy content on innovation vitality from the perspective of policy feedback theory [22]. Zhang Jinping et al. explored the impact of talent policies on the sustainable development of innovation vitality from the perspective of overseas human resources [35].

3. Empirical Model and Analysis

3.1. Empirical Strategies and Model Setup

The construction of national e-commerce demonstration

cities will result in regional differences between demonstration cities and non-demonstration cities during the sample period, as well as differences before and after the construction of demonstration cities. Therefore, these two differences provide a good quasi-natural experimental opportunity for this paper to evaluate the policy effects of national e-commerce demonstration city pilot policies on urban innovation vitality using the difference-in-differences (DID) method. This method can simultaneously control for the above two differences and more accurately identify the net effect of the creation of national e-commerce demonstration cities on urban innovation vitality. During the sample period, 70 cities were approved as national e-commerce demonstration cities in batches. Since these demonstration cities were approved in batches, the timing of the policy impact was not consistent. Therefore, this paper uses a multi-period DID method instead of a "one-size-fits-all" DID method. This paper borrows the setup method of Bertrand *et al.* (2004) and establishes the following DID model to investigate the impact of national e-commerce demonstration city construction on innovation vitality:

$$\ln Cev_{it} = \beta_0 + \beta_1 Eco_city_{it} + \gamma Control_{it} + \lambda_t + \mu_i + \varepsilon_{it} \quad (1)$$

In the model (1), "i" represents "city", and "t" represents "time". The dependent variable "Cev" measures the level of innovation vitality in cities, and this paper uses the number of newly established enterprises to measure it, taking the logarithm in the regression model. "Eco_city" is a dummy variable for the national e-commerce demonstration city pilot policy. When a city is approved as a national e-commerce demonstration city (in the year and thereafter), the variable takes the value of 1, otherwise, it takes the value of 0. It is the interaction term between the treatment group dummy variable and the dummy variable for the time of the national e-commerce demonstration city creation. Control represents a series of control variables. λ_t and μ_i represent year-fixed effects and city-fixed effects, respectively. ε is a random error term. This paper focuses on the coefficient β_1 of the core explanatory variable (Eco_city), which measures the impact of the national e-commerce demonstration city construction on the innovation vitality of cities. In addition, the standard errors of the regression results are clustered at the city level.

3.2. Data Sources

This study uses panel data from 286 prefecture-level and above cities in China from 2008 to 2020 as the research sample. During the sample period, 70 cities were approved as national e-commerce demonstration cities. Information on these cities was mainly obtained through the websites of the National Development and Reform Commission, the Ministry of Science and Technology, various provincial (municipal, autonomous region) government websites, and media reports. Innovation vitality data for cities were mainly obtained from the national enterprise credit information public disclosure system, which is the data source of the

enterprise search database. The enterprise credit information public disclosure data is compiled by the State Administration for Market Regulation and includes enterprise information such as name, establishment time, registered capital, legal representative, registered address, business scope, and industry. The new enterprise index used in this study is also based on the national enterprise credit information public disclosure system. Other related data mainly come from the China City Statistical Yearbook, China Regional Economic Statistical Yearbook, various provincial statistical yearbooks, Wind Information, and China Economic Information Database (CEIC).

Table 1 reports the descriptive statistics of the main variables. Panel B of Table 1 reports the t-test results for the innovative spirit of the two groups of samples: national e-commerce demonstration cities and non-demonstration cities. The results show that the innovation spirit of e-commerce demonstration cities is significantly stronger than that of non-demonstration cities, indicating that the level of innovation activity in e-commerce demonstration cities is relatively higher.

Table 1. Descriptive statistics of major variables.

variable	N	mean	sd	min	max
Urban innovation	4260	4.360	1.940	0	11.05
E-commerce city pilot	4260	0.120	0.320	0	1
PSTE	4260	0.0100	0.0200	0	0.210
IS	4260	0.950	0.540	0.0900	5.350
FDI	4260	0.0200	0.0200	0	0.210
Pcr_a	4260	16.05	7.150	0.390	60.07
lifa	4260	0.810	0.450	0.0100	5.670
Human_cap	4260	0.0200	0.0200	0	0.190
Industrial	4260	1.400	0.700	0	17.65
Green development	4260	86.16	23.06	0	100

This paper selected the panel data of 286 Chinese cities at or above the prefecture level from 2008 to 2020 as research samples. During the sample period, 70 cities have been approved as national e-commerce demonstration cities. Information about demonstration cities is mainly obtained through the websites of the National Development and Reform Commission and the Ministry of Science and Technology, the websites of provincial (municipal) governments and media reports.

The dependent variable of this article is innovation vitality. Following the approach of Mao Wenfeng and Lu Jun (2020), the specific measurement used is the "Langrun-Longxin Innovation and innovation vitality Index" compiled jointly by the National Development Research Institute of Peking University and Longxin Data Research Institute, which uses the number of invention patent applications in the system to measure the level of city innovation vitality. Specifically, the number of invention patent applications in a given year is taken, added by one, and then the logarithm is taken for measurement purposes.

The core explanatory variable is the virtual variable of the national e-commerce city pilot, i.e., when a city is approved as a national e-commerce city pilot, the value for that year and subsequent years is 1; otherwise, it is 0. This virtual variable is actually the interaction term of the e-commerce city pilot virtual variable grouping and policy time virtual

variable. Because the national e-commerce city pilots were approved in batches during the period from 2009 to 2017, the time virtual variables for different e-commerce demonstration cities are not exactly the same.

In addition, this article controls for other variables that affect urban innovation vitality based on existing research, including the proportion of science and technology expenditures (PSTE), industrial structure (IS), foreign direct investment (fdi), per capita road area (Pcr_a), fixed asset investment level (lifa), human capital (Human_cap), industrialization level (Industrial), and green development. PSTE is measured by the proportion of science and

technology expenditures to government expenditures; IS uses the ratio of the tertiary industry to the secondary industry; fdi is measured by the proportion of actual foreign investment to GDP; Pcr_a is measured by dividing the area of urban roads by the population of the city; fixed asset investment level is measured by the proportion of fixed asset investment to GDP; Human_cap is measured by the proportion of ordinary undergraduate and graduate students to the total population, i.e., the number of college students per ten thousand people; Industrial is measured by the proportion of industrial output value to GDP; and green development is measured by the harmless treatment rate of domestic waste.

3.3. Baseline Regression Results and Analysis

Table 2. Benchmark regression results.

	(1)	(2)	(3)	(4)	(5)
E-commerce city pilot	1.6950*** (0.0677)	0.8943*** (0.0634)	0.7228*** (0.0538)	0.5954*** (0.0525)	0.6272*** (0.0502)
PSTE		36.8168*** (1.5526)	27.0296*** (1.3306)	23.5407*** (1.2628)	22.7218*** (1.2079)
IS		1.1076*** (0.0456)	0.5462*** (0.0411)	0.2085*** (0.0415)	0.2183*** (0.0403)
FDI			-6.2783*** (1.0325)	-8.3847*** (0.9823)	-8.2257*** (0.9404)
Pcr_a			0.1195*** (0.0030)	0.0997*** (0.0030)	0.0845*** (0.0029)
lifa				0.7345*** (0.0361)	0.5298*** (0.0373)
Human_cap				16.8355*** (2.1474)	14.4784*** (2.0583)
Industrial					0.1599*** (0.0264)
Green development					0.0108*** (0.0006)
_cons	4.1654*** (0.0175)	2.6589*** (0.0475)	1.5541*** (0.0580)	1.4037*** (0.0593)	0.7007*** (0.0691)
N	4260	4260	4260	4260	4260
R2	0.136	0.342	0.533	0.586	0.623

Note: *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

To verify the relationship between the construction of national e-commerce demonstration cities and urban innovation vitality, this study uses a double difference model with two-way fixed effects and gradually adds control variables for regression analysis. Table 2 reports the estimation results. The first column of Table 2 shows that when only controlling for regional and time-fixed effects without adding other control variables, the estimated coefficient of *Eco_city*, which is the focus of this study, is negative at the significance level of 1%; as the control variables affecting urban innovation vitality are gradually added in columns (2)–(3), the correlation of the estimated coefficient of *Eco_city* increases. According to the results in column (5), after a city becomes a national e-commerce demonstration city, its innovation vitality increases by an average of about 62.7%. This indicates that, under other conditions, the level of innovation vitality in e-commerce demonstration cities is higher than that in non-e-commerce demonstration cities, implying that the construction of e-commerce demonstration cities promotes urban innovation

vitality, which verifies the research hypothesis proposed in this study.

4. Policy Recommendations

"Trial before popularization" is a successful practice in promoting reform in China. It is relatively safe to carry out pilot trials in some areas, gain experience and reach consensus, and then spread the experience and practices of the pilot reforms. National e-commerce demonstration city construction, as an innovative policy pilot to promote urban e-commerce, is a vivid embodiment of the advantages of the "experimental field" system in the process of promoting Chinese modernization, and also an important practice to lead all the people to start a business and become rich. In the new era, China's economy has shifted from a stage of high-speed growth to a stage of high-quality development, which puts forward new and higher requirements for mass innovation vitality and innovation. The implementation of the pilot policy will not only promote the development of

e-commerce, but also promote innovation activities in the pilot cities, stimulate the innovation vitality of entrepreneurs, promote the all-round development of people, gradually realize the common prosperity of all people, and provide a new path for China to move towards the connotation, intensification and modernization of the high-quality development road.

On the basis of literature and institutional background review, with the help of the quasi-natural experiment of national e-commerce demonstration cities, this paper takes the panel data of Chinese cities from 2005 to 2018 as the research sample, and uses the entry of new enterprises to characterize the innovation vitality of entrepreneurs. The influence of the construction of national e-commerce demonstration city on innovation vitality and its mechanism is studied by using the multiphase difference method, and the interaction and internal logical relation between the two are revealed. On the basis of this research, it puts forward the following conduction path of "4+2+2" Chinese e-commerce pilot policy, which integrates innovation vitality, ability and synergy.

4.1. Releasing Policy Dividends and Stimulating Innovation Vitality -- "4" Policy-Innovation Vitality Transmission Path

4.1.1. Implementing the Digital Economy Development Strategy and Unswervingly Following the Chinese-Style Modernization Path

In recent years, the digital economy, supported by digital technology and with data resources as its key element, has flourished and become a key force in reshaping the economic competitiveness of various countries and the global competition pattern. Major countries in the world have taken digital economy as a major opportunity to seize the new round of scientific and technological revolution and industrial transformation. They have formulated strategies and plans to build new national competitive advantages and seize the commanding heights of international competition. Unswervingly implementing the digital economy development strategy is not only the basis for stimulating innovation vitality, but also the key to strengthening the overall role of spatial planning at the national level and unswervingly promoting Chinese-style modernization.

4.1.2. We Will Expand the Channels for Increasing People's Employment and Income, and Strive to Stabilize and Increase People's Income and Make Them Prosperous

To expand people's income and expand effective employment space through multiple channels, we should adhere to innovation-driven development, constantly tap the potential of new industries, new forms and models of e-commerce, constantly create new "rice bowls", and improve the quality and expansion of employment. At the same time, it is also necessary to strengthen policy support and guidance services, further optimize the innovation environment, and promote high-quality e-commerce innovation vitality, so as to promote the construction of the labor market and the improvement of the employment service system, realize the

continuous expansion of people's employment space and income channels, and promote common prosperity.

4.1.3. Let the Government Play Its Macro-Control Role and Improve the Security and Governance System of the Digital Economy

The government should establish and improve the market supervision mechanism, protecting the innovation behavior of entrepreneurs, focusing on solving the problems of capital, technology, market and so on needed for innovation activities, so as to provide guarantee for stimulating the innovation vitality of the region. At the same time, the government should actively improve the business environment. On the one hand, actively promote the construction of information infrastructure, accelerate the deployment of new network infrastructure in cities with high information level, and continue to promote the level of Internet broadband access in cities with low information level to improve the level of information. On the other hand, attention should be paid to increasing human capital input, strengthening the flow of talents between regions and improving the level of human capital in the construction of e-commerce demonstration cities.

4.1.4. Dynamic Adjustment of E-commerce Pilot City Policies, Giving Play to the Advantages of the Pilot System with Chinese Characteristics

According to the empirical evidence, the pilot policies of e-commerce demonstration cities can help promote the inflow of FDI, but we also found that there are some problems in the selection of pilot cities, assessment standard system and dynamic supervision mechanism. First, it is necessary to improve and introduce the norms and standards for the selection of e-commerce demonstration pilot cities as soon as possible, so as to fundamentally eliminate the arbitrariness of the selection of e-commerce pilot cities, and concentrate the limited resources on cities with the potential to build e-commerce. Secondly, the current Evaluation Index System of National E-commerce Demonstration Cities (Trial) should be improved and supplemented accordingly. For example, the second-level index of incubation capacity of e-commerce new business forms can be considered under the first-level index of e-commerce development level, and the specific and quantifiable second-level index should be further given under the first-level index of e-commerce development environment. Prevent the subjective arbitrariness of scoring. Third, build a dynamic supervision mechanism for e-commerce demonstration cities to ensure the establishment of e-commerce demonstration cities to achieve the established goals.

4.2. Accurately Helping Industries and Improving Innovation Ability -- "2" Industry-Innovation Vitality Transmission Path

4.2.1. Improving the Suitability of the Coordinated Development of E-commerce, and Optimizing and Upgrading Digital Infrastructure

Focus on maintaining the balance of e-commerce development and matching digital economy with local

competitive advantages. It is necessary to rely on e-commerce to effectively release the development advantages of different regions, adapt to local conditions, make up for the shortcomings of regional development, so as to use e-commerce to promote regional economic development. Taking the central and western regions as an example, due to the small scale and insufficient financial resources of urban e-commerce transformation in the central and western regions, to improve the innovation vitality of the cities in the region, we should first increase the investment of supporting funds in the central and western regions, and promote the construction and improvement of urban Internet infrastructure.

4.2.2. Give Full Play to the Radiating and Driving Role of Central Cities to Promote the Development of Urban E-commerce in All Regions

E-commerce strategies need to be closely coordinated with regional and urban networks with central cities as the core nodes. The development strategy of digital economy and the allocation of data resources should be matched with the local space network to avoid the disorderly spread of digital technology. First, we will guide the deep integration of e-commerce development with high-value-added services. Pilot cities should actively encourage enterprises to make full use of Internet big data analysis, comprehensively diagnose the direction of consumers' demand for high-end services, and launch corresponding service products. Second, promote the e-commerce of traditional industries to enhance the added value of the industry. For example, traditional industries are encouraged to actively access e-commerce platforms, effectively reducing the profit erosion of traditional channels, and thus improving the added value of traditional industries. Actively improve the informatization level of development and human capital investment.

4.3. Industrial Integration and Development to form Innovation Synergy -- "2" Integration of Government and Enterprises - the Transmission Path of Innovation Vitality

4.3.1. Promote the "Go-Getter Government" and Establish an Inter-Regional E-commerce Development Linkage Mechanism

First, when formulating the local e-commerce development strategy, the local government should not only choose the appropriate digital industry development and digital technology application according to its own digital foundation, but also take into account the e-commerce and structural status of neighboring areas to determine its own positioning in the overall. Make full use of local and neighboring areas in the process of promoting the development of e-commerce complementarity and mutual promotion effect to promote the development of regional economy. Second, we need to make overall plans for the long-term layout of regional innovation capacity upgrading and deepening reform of regional innovation systems and mechanisms. Enterprises are the main body of regional innovation activities, and the improvement of innovation ability needs a large amount of capital investment,

enterprises are in urgent need of sound incentive mechanisms and reasonable profit distribution rules to provide institutional protection. The government should increase support for innovation activities, build a bridge between enterprises, universities and the government to promote each other, effectively protect innovation behavior, and guide the implementation of innovation achievements.

4.3.2. Explore the "Efficient Market" and Build a Unified National Market with the Digital Economy as the Starting Point

Make good use of the regional e-commerce network, expand the industry to the whole country, form the overall digital economy driving mechanism with the domestic super-large market as the carrier, through the interactive development of regional digital economy, comprehensively build the national unified big market, realize the integrated development of industries, and enhance the innovation vitality of the city.

On the one hand, accelerate the development of digital finance to meet the financial needs of efficient economic development in an all-round way. Under the circumstance that the development of digital finance can improve the efficiency of urban economy, it is necessary to take advantage of the opportunity of the construction of "digital China", promptly formulate the development strategy of digital finance at the national level and the city level, and fully release the digital dividend to stimulate the efficient development of economy. It is necessary to pay attention to the balanced development of different dimensions of digital finance, enhance the digitization degree of digital finance by strengthening the construction of digital infrastructure, and provide new driving force for improving the efficiency of urban economy.

On the other hand, we should speed up efforts to improve the digital financial service system for innovation and innovation vitality and enhance the vitality of innovation and innovation vitality. The vitality of innovation and innovation vitality contributes to the improvement of urban economic efficiency, and also strengthens the positive impact of digital finance development on urban economic efficiency. At present, we should earnestly implement the strategy of mass innovation vitality and innovation and continue to promote mass innovation vitality and innovation at a deeper and broader level. Relying on the rapid development of digital finance and diversified digital financial services, such as digital credit, digital insurance and digital payment, the company actively connects the financial service demand of innovation and innovation vitality activities, stimulates the vitality of innovation and innovation vitality, and drives the effective improvement of urban economic efficiency.

Acknowledgements

This paper is one of the phased results of the project "Does urban E-commerce Transformation promote urban innovation Vitality -- Based on Empirical Evidence of National

E-commerce Demonstration Cities" (Project No. 202210274002). Shanghai Customs College National College Students Innovation and Innovation Vitality Training Program.

References

- [1] Chen Shuaiyu. (2021). Risk Assessment and Control of Venture capital Enterprises. *Science and Technology Information* (35), 143-145.
- [2] Chen Linlin, Lu Chongyang & Han Zhihong. (2021). The Impact of Economic policy Uncertainty on Self-employment. *Time Finance* (23), 34-36.
- [3] Deng Lingbin & Dongfang. (2006). Research on the cost and strategy of information resource acquisition. *Information Science* (12), 1828-1831+1840.
- [4] Feldman Maryann P. (2001). The Entrepreneurial Event Revisited: Firm Formation in a Regional Context. *Industrial and Corporate Change* (4).
- [5] Guo Siwei, Zhang Mingang, Wang Qing & Zhu Xianqiang. (2018). The "New Engine of Foreign Trade" under the New Normal: the development of cross-border e-commerce and the transformation and upgrading of traditional foreign trade. *The Economist* (08), 42-49.
- [6] Han Ruidong & Bo Fan. (2019). Study on the influence of Pilot Free trade Zones on capital flow -- Based on the perspective of quasi-natural experiment. *International Studies in Finance* (07), 36-45.
- [7] Ju Xuenan, Zhao Xuankai & Sun Baowen. (2020). What trade costs have been overcome by cross-border e-commerce platforms? -- Empirical evidence from "Dunhuang network" data. *Economic Research* (02), 181-196.
- [8] Liu Naiquan, Deng Min & Cao Xiguang. (2021). Does urban E-commerce promote green and high-quality development? -- A quasi-natural experiment based on the construction of national e-commerce demonstration cities. *Study of finance and economics* (04), 49-63.
- [9] Li Caipeng. (2021). Research on Rural economic development promoted by peasants returning to their hometowns to start businesses under the background of domestic great cycle. *Agricultural Economics* (11), 100-101.
- [10] Lei Ting & Peng Tao. (2020). The impact of Venture Capital participation in corporate governance on the investment efficiency of listed enterprises. *Contemporary Economics* (10), 70-74.
- [11] Lv Xinfu. (2021). Research on innovative ways of operation mode of e-commerce websites for small and medium-sized enterprises. *China merchants* (22), 37, 39.
- [12] Liu Yi, Ren Yawen, Ma Li & Wang Yun. (2022). Progress, problems and strategic thinking on the innovative development of the Guangdong-Hong Kong-Macao Greater Bay Area. *Progress in Geography* (09), 1555-1565.
- [13] Li Zheng & Yang Siying. (2019). Can innovative City Pilot Improve the level of urban innovation? *Economic Trends* (08), 70-85.
- [14] Li Z C. (2019). Multiple logic of policy pilot promotion: Based on the analysis of China's smart city pilot. *Journal of Public Administration* (03), 145-156+175.
- [15] Li Yao, Liu Jing & Zhang Yuqi. (2021). Construction and Empirical Analysis of Supply and demand Matching Model of College students' entrepreneurship Policy. *Trade Show Economics* (12), 102-105.
- [16] Li Liying & Du Zhuo. (2021). Research on Online Employment and Entrepreneurship Policies for College Students. *Heilongjiang Human Resources and Social Security* (09), 138-140.
- [17] Li Guanghui. (2017). The status quo and rules of China's Free Trade Zone. *Northeast Asian economic studies* (02), 19 to 31.
- [18] Ma Tian & Li Junhai. (2021). Research on the "TCM +" model of college students' entrepreneurship. *Chinese market* (24), 5-6.
- [19] Meng Longcai & Shi Rong. (2022). SWOT Analysis on the development of cross-border e-commerce industry in China. *China market* (01), 6-8.
- [20] Mazongguo & Zhang Hui. (2019). Strategic thinking on promoting high-quality development of National Independent Innovation Demonstration Zones. *Macroeconomic Management* (07), 47-54.
- [21] Song Xiaohua, Han Jialing, Pan Jixuan, Kou Yingfang, Liu Hong & Wang Jing. (2021). Research on information acquisition mechanism based on the integration of industry and finance. *Accounting communication* (16), 102-105.
- [22] Solang Baizong. (2021). Research on the path to improve the effect of Entrepreneurship Policy -- from the perspective of Policy Feedback Theory. *Investment and Entrepreneurship* (24), 43-46.
- [23] Wang Baoqian & Luo Weifeng. (2018). Innovation Performance Evaluation of National Innovation-oriented Cities: A Case study of Yangtze River Delta. *Urban problems* (01), 34-40.
- [24] Wang Shuang. (2017). Evolution trajectory and prospect of national Independent Innovation Demonstration zones. *Reform* (05), 82-94.
- [25] Wu Yipin & Lu Jian. (2018). Research on the Difference of Policy Pilot Results: Based on the empirical analysis of the Central Push pilot from 2000 to 2012. *Journal of Public Administration* (01), 58-70+156.
- [26] Wu Yilin & Huang Zheng. (2018). Empirical Research on Entrepreneurship Policy based on Propensity score Matching Method: A Case study of fiscal and tax policy Evaluation. *Macroeconomic Research* (09), 123-138+175.
- [27] Xiong Xi&Wei Xiao (2016). Evaluation of Innovation Capability of National Independent Innovation Demonstration Zones - Taking 10 National Independent Innovation Demonstration Zones in China as Examples *Economic Geography* (01), 33-38.
- [28] Ye Wenping, Yang Xueru & Zhu Cioran. (2018). Does entrepreneurial activity affect well-being? A comparative study of cultural and institutional environment. *Nankai Management Review* (04), 4-14.
- [29] Zhao Tao, Zhang Zhi & Liang Shangkun. (2020). Digital economy, entrepreneurial activity and high-quality development: Empirical evidence from Chinese cities. *Management World* (10), 65-76.

- [30] Zhuang Delin, Wang Pengpeng, Xu Jilan & Zhang Di. (2020). Spatial Structure Evolution of urban network of venture capital in China: Based on the analysis of four investment stages. *Geography science* (08), 1256-1265.
- [31] Zhao Chunying. (2021). Risk Analysis and Management Strategy Research of Venture capital. *Investment and Entrepreneurship* (12), 37-39.
- [32] Zhou Yinggang, Meng Lina & Lin Xueping. (2020). Urban Inclusiveness and Entrepreneurial Choice of Labor Force: Based on the micro perspective of Floating population. *Finance and Trade Economics* (01), 129-144. (in Chinese).
- [33] Zeng Yiwu, Guo Hongdong & Jin Songqing. (2018). Is E-commerce beneficial to farmers' income? -- Evidence from Shuyang, Jiangsu Province. *Chinese Rural Economy* (02), 49-64.
- [34] Zhou Yixiang. (2022). Model Construction and evaluation of the effect of entrepreneurial policies on new ventures: supply-demand matching and perceived value perspective. *Science Research Management* (02), 18-26.
- [35] Zhang Jinping, Liu Tingting, and Meng Yanfeng (2022). Text analysis and optimization suggestions for the policy system of introducing overseas talents and entrepreneurship in Shanxi Province *Journal of Central North University (Social Sciences Edition)* (02), 111-116.
- [36] Zhang Longpeng, Zhong Yilin & Tang Zhiwei. (2020). The Impact of smart city Construction on urban innovation capacity: A quasi-natural experiment based on China's smart city pilot. *Soft Science* (01), 83-89.
- [37] Zhan Yong & Li Shan. (2022). Smart City Construction, entrepreneurial vitality and high-quality economic development: An analysis from the perspective of green Total Factor Productivity. *Study of finance and economics* (01), 4 to 18.