

Article

How the Target Positioning of the S&T Innovation Platform Impacts Its Network Innovation Capability in China

Gulizhaer Aisaiti ^{1,2} , Qi Dong ¹, Ling Liang ³, Jiqing Xie ² and Jiaping Xie ^{1,2,*} 

¹ School of Business, Xinjiang University of Finance and Economics, Urumqi 830012, China

² College of Business, Shanghai University of Finance and Economics, Shanghai 200433, China

³ School of Business Administration, Shanghai University of International Business and Economics, Shanghai 201620, China

* Correspondence: jiaping@mail.shufe.edu.cn; Tel.: +86-18121417137

Abstract: The Scientific and Technological Innovation Platform (hereafter S&T innovation platform) accumulates rich innovation resources, co-ordinates the interest between multiple innovation subjects, promotes the sharing of innovation resources, and thus enhances the platform's network innovation capability. Therefore, based on the perspective of the target positioning of the S&T innovation platform, this paper explores the improvement path of the platform's network innovation capability. Through empirical research, we found that the target positioning of the S&T innovation platform helps to improve the platform's network innovation capability. The mediating mechanism of construction logic and transformational logic enhances the S&T innovation platform's network innovation capability. At the same time, this paper studies the influence of boundary factors, such as government guidance and market lead, on the network innovation capability of S&T innovation platforms and finds that the market lead moderating effect impacts the network innovation capability of S&T innovation platforms through commercial logic and transformational logic. The government guidance positively moderates the relationship between the target positioning of the S&T innovation platform and the commercial logic under construction logic. The moderating effect under the joint impact of market lead and government guidance enhances the network innovation capability of the S&T innovation platform using social logic and transformational logic. The novelty and uniqueness of the research are based on the innovation network theory, integrating construction logic and transformational logic, and enriching the boundary conditions to enhance the network innovation capability of the S&T innovation platform by introducing the roles of market lead and government guidance.

Keywords: S&T innovation platform; construction logic; transformational logic; S&T innovation network innovation capability



Citation: Aisaiti, G.; Dong, Q.; Liang, L.; Xie, J.; Xie, J. How the Target Positioning of the S&T Innovation Platform Impacts Its Network Innovation Capability in China. *Sustainability* **2023**, *15*, 716. <https://doi.org/10.3390/su15010716>

Academic Editor: Alina Badulescu

Received: 1 November 2022

Revised: 23 December 2022

Accepted: 26 December 2022

Published: 31 December 2022



Copyright: © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

With economic globalization and China's economy reaching a new normal, the importance and necessity of scientific and technological innovation have become increasingly significant. As the main force affecting the direction and trend of economic development, the network innovation capability of an S&T innovation platform will inevitably become an essential element of its sustainable development and competitiveness [1]. However, the increasing complexity of innovative technologies, the continuous increase in innovation cost, the rise in innovation risk and the lack of innovation resources have forced enterprises to break through their barriers. At the same time, they apply the S&T innovation platform to co-operate with different innovative entities and complement each other's advantages to achieve significant scientific and technological innovation and improve innovation performance and competitive advantages [2]. The concept of an "Innovation for platform" was first proposed by the Competitiveness Council of the United States,

which believed that an “Innovation Platform” refers to the essential resources (such as talent, capital, regulations, market, knowledge, etc.) in the process of innovation [3]. The open innovation platform is the foundation of establishing the S&T innovation platform. Open innovation represents the purposeful use of inward and outward flows to share knowledge and collaborate to accelerate internal innovation and enhance trade markets for external innovation exploitation [4,5]. An open innovation platform is a virtual place where users are invited by innovation seekers, such as supporters of online projects, to support projects through their ideas. Proponents, innovators or problem solvers address the challenges presented by submitting one or more ideas [6]. The economic, technical production, organizational, personnel and information factors form the development of open innovation platforms [7]. An S&T innovation platform is an innovative institution and organization that gathers innovation resources and supports and services scientific research and technology development activities. It has the following main characteristics: resource integration, functional co-ordination, open co-operation and innovation subject diversity [8].

The basic process of the network development of the S&T innovation platform is to reshape the innovation process according to its characteristics and gradually form a network covering the whole S&T innovation platform through factor flow, resource sharing and interaction and collaboration [9]. The target positioning of the S&T innovation platform is to give play to the advantages of science and technology resources; focus on core technologies and generic technologies within the platform; establish an S&T innovation network of resource sharing, complementary advantages, close collaboration, and mutual benefit; co-ordinate interest between innovation subjects on the platform; and achieve the development goals and profit goals [6]. In the network of the S&T innovation platform, the competitive and co-operative relationship between enterprises is close. With the deepening of collaborative innovation co-operation, the nonlinear relationship between innovation subjects continues to be maintained [10], making the relations between S&T innovation platforms more complex and unstable and demonstrating the need to enhance network innovation capability.

The S&T innovation platform gathers many innovation resources for enterprises, amplifies the synergistic effect between different enterprises, and enhances the collaborative innovation ability of enterprises. In addition, the S&T innovation platform can effectively reduce innovation input and improve innovation efficiency. Improving the network innovation capability of the S&T innovation platform is the most intuitive way to achieve the goal of the S&T innovation platform. Then, what is the impact of the S&T innovation platform on innovation performance? Based on the previous literature, it can be seen that the existing research in this field focuses on the relations between the S&T innovation platform and innovation performance. Research on innovation platforms mainly includes innovation network elements, innovation network embedment [9], and the network characteristics of the S&T innovation platform [11]. For example, an empirical study found that the resource gathering and network structure of an S&T innovation platform helps to improve its benefits, the increasing role of the platform’s network organization ability and its ability to apply resource integration [12]. Xie et al. (2017) [13] took the network characteristics of the S&T innovation platform as a research entry point and described the form and network characteristics of the S&T innovation platform network from the perspective of network embedding by reviewing and referring to research on knowledge networks, social networks, alliance knowledge, transaction costs and other aspects. Overall, the scholars generally agreed that the platform has a positive promoting effect on innovation performance; an S&T innovation platform can especially combine the interests of all parties of the value chain to increase the service efficiency of science and technology resources. Furthermore, it reduces costs and enhances science and technology innovation competitiveness and capability.

However, the complexity and dynamic characteristics of the collaborative innovation of the S&T innovation platform network inevitably lead to a high risk of innovation

activities and cause a high degree of instability in multisubject innovation activities [14]. Therefore, it will affect the overall network innovation capability, which hinders the innovation performance and competitive advantage of enterprises. The S&T innovation platform is a network support system that accelerates the industrial transformational process of scientific and technological patents and promotes the sharing and integration of industrial technology innovation resources. The S&T innovation platform achieves collaboration between multiple subjects through network relation and structure embeddedness, thereby enhancing the network innovation capability [15]. The S&T innovation platform provides many innovation resources for enterprises, enhances enterprises' collaborative effect, and enhances network innovation capability. In addition, the S&T innovation platform can effectively reduce investment in innovation, research and development costs and innovation efficiency. Based on the related research, we found few pieces of research on the relationship between target positioning, institutional logic and network innovation capability. Ample prior research has demonstrated the positive impact of the S&T innovation platform on innovation performance. Nevertheless, research on the S&T innovation platform is relatively scattered. Therefore, research on the S&T innovation platform target positioning on the platform network innovation capability is worthy of in-depth discussion.

This study attempts to answer the following three questions: (1) Does the target positioning of the S&T innovation platform promote the network innovation capability? (2) Can the target positioning of the S&T innovation platform impact the network innovation capability of the S&T innovation platform through different institutional logic (construction logic and transformational logic)? (3) What kind of boundary conditions of the target positioning of the S&T innovation platform influence the formation of the S&T innovation platform's network innovation capability? First of all, in the past, the relevant literature on the network innovation capability of the S&T innovation platform has yet to integrate different forms of institutional logic to improve the platform's network innovation capability. In this study, the influence of construction logic and transformational logic on the S&T innovation platform network innovation capability is shown for the first time. We systematically analyzed the differences between the two on the network innovation capability of the S&T innovation platform. At the same time, this paper introduces the effects of market lead and government guidance to investigate the moderating effect between the target positioning of the S&T innovation platform, and construction logic and transformational logic. The empirical results of this paper show that the target positioning of the S&T innovation platform significantly promotes the S&T innovation platform's network innovation capability. This makes it more conducive to integrating and utilizing different innovation resources, thus enhancing the S&T innovation platform's network innovation capability. Construction logic and transformational logic have an intermediary impact on the target positioning of the S&T innovation platform and its network innovation capability, respectively. The market lead moderates the S&T innovation platform's network innovation capability through commercial logic under construction logic. The market lead impacts the S&T innovation platform network's innovation capability through transformational logic. Government guidance impacts the S&T innovation platform's network innovation capability through the social logic of the construction logic. We organized the paper as follows. The next section describes the theoretical analysis and research hypothesis. As such, Section 2 presents the literature review and provides the research hypotheses, followed by a presentation of the data and methods in Section 3. The results are reported in Section 4, while the final section provides conclusions and discusses implications.

2. Theoretical Analysis and Research Hypothesis

2.1. Theoretical Analysis

The S&T innovation network theory originated from the social network theory [16], composed of systematic institutional arrangements and co-operative relationships. In the network, the innovation subjects (enterprises, universities/institutes, governments, financial institutions and intermediaries, etc.) continue to learn and progress through social

interaction, break through common technological barriers, and improve their innovation capability [9]. There are complementary characteristics of resources, structure and function among the innovation subjects, which provide the opportunity for combination and collaboration. Therefore, as a carrier of co-operation among heterogeneous organizations, such as government departments, economic organizations and S&T organizations, the S&T innovation network effectively improves innovation performance. With the deepening of innovation activities on the platform, members of an external knowledge network gradually formulate through social relations, making initially simple linear relations present rich and complex social network features [8]. In the S&T innovation platform network, co-operation and competition coexist among companies. With the deepening of the relationship between innovation subjects, the relationship between multiple subjects presents a non-linear trend. The S&T innovation platform network makes the relationship between multiple innovation subjects more complex, and it is necessary to co-ordinate the interest between various innovation subjects and enhance network innovation capability. Based on the innovation network theory, a network developed on the innovation platform has the characteristics of openness, integration and complementarity of resources. These can impact the institutional logic of the S&T innovation platform and improve the network innovation capability. Firstly, the S&T innovation platform network's openness comprehensively applies the inflow and outflow of external knowledge and internal knowledge and integrates internal and external innovation resources into a structure for R&D and commercialization [17]. Second, network resource integration benefits the company in an uncertain market environment and under resource constraints. It can identify, acquire, build, and reconfigure network resources such as human capital, cash, technology, and information, and enhance the innovation capability [18]. Finally, the network resource complementarity of the S&T innovation platform improves the innovation capability of enterprises, and co-operative relationships create more utility than a single organization [19]. Therefore, this paper regards the S&T innovation platform as the network, the platform institutional logic as the mediating mechanism, and the characteristics of the S&T innovation network as the starting point, and analyzes the relationship between the target positioning of the S&T innovation platform and the network innovation capability.

2.2. The Multisubject Perspective of the S&T Innovation Platform Target Positioning and Network Innovation Capability

The S&T innovation platform not only promotes innovational paradigm change, internal and external integration and rational allocation of innovation resources, but also becomes an important driving force for enterprise development and economic growth. The S&T innovation platform gathers enterprises, universities, and research institutes in the same technology field to accumulate innovative resources, such as science and technology, talents, innovation funds, and innovation policies. Its manifestations include S&T enterprise incubators, high-tech development zones, S&T parks, research and development, transformational functional platforms, etc. [10].

The target positioning of the S&T innovation platform is an extension of strategic positioning. According to strategic management theory, platform enterprises should first determine the ideal development state and value target of the platform enterprises according to the interest demands of their stakeholders, plan the strategic vision of S&T innovation platforms, and co-ordinate the goals and demands of multiple subjects [13]. Specifically, it is a process of selecting the development direction of the S&T innovation platform by considering the target needs of platform enterprises, universities/research institutes, government agencies, intermediary service agencies, financial institutions and other stakeholders in the platform, and redesigning the strategic positioning of a business model by combining the overall goals and phased goals. For example, enterprises hope to improve their competitiveness and profit level, and research institutions hope to transform their research results [20,21]. With different strategic objectives, the operational logic of the S&T innovation platform can also differ to meet the needs of different interests. Further,

the development direction and business functions of the S&T innovation platform are positioned, and the value balance and co-ordination between social and economic value are carried out to achieve a clear strategic direction [14]. Finally, it is necessary to plan the overall goals and milestone goals of the development of the platform enterprise, scientifically formulate the operation mode to win competitive advantage, and co-ordinate the goals with the behavior mode and enhance the network innovation capability [12]. Therefore, different S&T innovation platforms differ in their level of co-operation and closeness of the relationship between multiple subjects [22], and their strategic positioning goals differ in the degree of improving network innovation capability.

The network innovation capability of the S&T innovation platform refers to the sharing of superior resources and the complementary allocation of scarce resources through collaborative interaction among innovation subjects to achieve a $1 + 1 > 2$ resource utilization effect [23]. The theory of the S&T innovation network provides a theoretical lens to explain the relationship between the multisubject perspective of the S&T innovation platform target positioning and the network innovation capability. Harland (1995) [24] proposed that the S&T innovation network should consist of three essential elements: innovation actors, activities and resources, and the S&T innovation platform meets the crucial aspects of network formation. The S&T innovation platform can be applied to conduct an array of innovation activities and acquire and share human resources, innovation equipment, and innovation capital. As such, the S&T innovation platform formulates a network. The S&T innovation platform provides a suitable environment for innovators to exchange, interact, share, and disseminate valuable resources and information.

According to S&T innovation network theory, companies can construct their external knowledge network, promote the interaction between the main innovation body and knowledge sharing, the accumulation of innovation resources and the enterprise's internal resources integration. Therefore, we raised a hypothesis based on three perspectives: complementary innovation resources, integrated decentralized innovation, and sharing knowledge resources.

First, the multisubject perspective of the S&T innovation platform's target positioning is to fulfill the various stakeholders' needs and accumulate different innovation subjects to form the network and promote innovation capability. The frequent interaction between the main subjects [25,26], shared talents, funds, and equipment innovation resources can reduce the time for the multiple subjects to obtain resources and the cost of capital, thus promoting the S&T innovation platform's network innovation capability. The S&T innovation platform makes up for the shortage of primary innovation subjects and enhances network innovation capability.

Secondly, the multisubject perspective of the S&T innovation platform's target positioning can integrate decentralized innovation resources, allocate significant innovation resources to specific links of strategic significance, and effectively improve the ability of the innovation chain to allocate resources [26,27]. More specifically, the S&T innovation platform can integrate innovation elements [28], co-ordinate the innovation process, provide innovation service support, and stimulate co-operation between innovation subjects [29].

Finally, the multisubject perspective of the S&T innovation platform's target positioning can obtain knowledge and technology resources faster and at a lower cost through the agglomeration effect of talent, capital, and facilities. The critical innovation subjects on the S&T innovation platform promote knowledge sharing, transfer and creation through knowledge acquisition, knowledge transfer, and knowledge application and give full play to the "externality" and "spillover effect" of knowledge, thus forming knowledge advantages. Knowledge flow efficiency directly affects the multisubject perspective innovation's success or failure [29]. Strengthening knowledge sharing helps to open the resources and information of each platform to attract more partners to join and promote the co-ordinated development of the S&T innovation platform network. Based on the above analysis, this paper puts forward the following hypothesis:

H1: *The multisubject perspective of the S&T innovation platform's target positioning has a significant positive impact on the S&T innovation platform's network innovation capability.*

2.3. The Mediating Role of Construction Logic

There are two ways to establish China's National Independent Innovation Zone (hereafter NIDZ). On the one hand, to improve the innovation level of the existing parks, the park form can be upgraded through established industrial and high-tech zones, that is, the upgraded NIDZ. On the other hand, in industrial areas and high-tech zones, to promote social and economic development and transform the power of social and economic development, it is necessary to embed the innovation-driven development mode; that is, to build a new NIDZ. At the same time, the operation mechanism of the NIDZ involves market lead, government guidance, and other factors (as shown in Figure 1). Establishing the NIDZ's different forms of innovation networks for scientific and technological innovation, and the specific organizational form of innovation networks, is the mode of the S&T innovation platform.

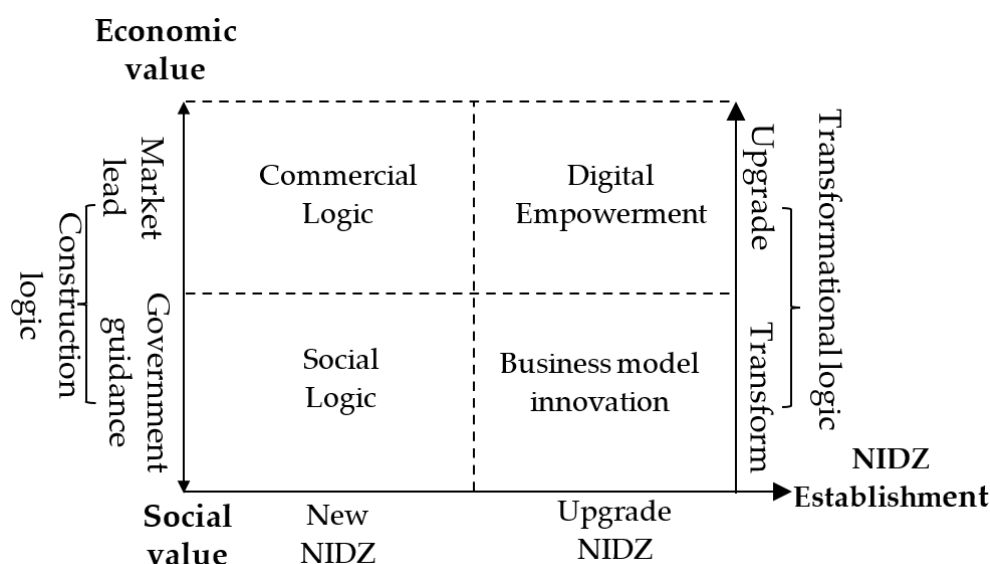


Figure 1. The relation between construction logic and transformational logic.

There are differences in establishing NIDZs, high-tech zones upgraded to NIDZs, and industrial parks upgraded to NIDZs [30,31]. Therefore, there are also differences in the S&T innovation platform construction process. When a high-tech zone is upgraded to a NIDZ, since it already has innovation characteristics, the S&T innovation platform will improve its innovation efficiency through a digital enabling mechanism after it becomes a NIDZ [32]. However, the original business model of the industrial park is production and manufacturing, which can prove a challenge to meet the innovation needs of enterprises. Therefore, it is urgent to upgrade and improve the business model of the S&T innovation platform to improve the network innovation capability. In an upgraded NIDZ, digital empowerment and business model innovation promote each other, constituting the transformational logic of the S&T innovation platform (see Figure 1). To achieve the innovation-driven effect, the establishment of the NIDZ also needs to build a new S&T innovation platform. To share technology innovation, the S&T innovation platform stakeholders need to highlight the maximization of social value, and the government leads the construction. Some S&T innovation platforms are for commercial technology development, and their stakeholders mainly pursue maximizing the economic value.

The four visions of Figure 1 represent different operational mechanisms. According to Thornton and Ocasio's (2008) [29] definition, institutional logic refers to the rules, norms and values shared by society, which determine the goals of an organization as well

as its strategies and behaviors to achieve its goals. In the context of an S&T innovation platform, the construction logic comprises two parts: government guidance social logic and market lead commercial logic [29–31]; while social logic emphasizes democracy and autonomy, solving social problems and creating social values, commercial logic emphasizes commercial practice, efficiency and profit maximization. The transformational logic of the S&T innovation network refers to reconstructing the platform’s revenue structure and cost structure, conducting business model innovation, and enhancing the innovation capacity of the platform through digital empowerment. Business model innovation refers to the business activities and operation development based on profitability and resources to realize the profits of the enterprise, partners and customers [32]. Digital empowerment refers to the effective application of digital technology to develop innovation and enhance digital capabilities, emphasizing the company’s mastery and application of digital skills [30].

Studies on hybrid organizations have explored the influence of multiple logics (e.g., social logic and commercial logic) from two theoretical perspectives of promoting and inhibiting effects, and accordingly formed the “conflict perspective” and “integration perspective”. (1) The conflict perspective holds that multiple organizational logics will lead to internal conflicts. (2) The integration perspective believes that multiple logics within an organization can realize mutual integration and coexistence that is conducive to more lasting and sustainable innovation and the development of the organization [33–36]. In this paper, we believe that commercial and social goals are complementary rather than competitive, and the S&T innovation platform has more redundant resources to face potential conflicts. Therefore, managers and employees in the S&T innovation platform have a stronger ability and richer experience to face conflicts and tensions. From the early stage to the later stage of development, the S&T innovation platform needs to apply different institutional logic to improve the platform’s network innovation capability. To better describe the connection and difference between the operational logic of the S&T innovation platform, this paper puts forward Table 1.

Table 1. The description of institutional logic.

Institutional Logic		Construction Logic		Transformational Logic	
Classification	Social Logic	Commercial Logic	Digital Empowerment	Business Model Innovation	
Characteristics	Maximization of social welfare	Commercial profit maximization	Homogeneity, replicability, iteration, and programmability	Novelty, complementarity, uniqueness, efficiency	
Difference	Puts social value first	Puts commercial value first	Put digitalization first	Puts value co-creation first	
Similarity	Improves the operational efficiency of S&T innovation platforms	Improves the operational efficiency of S&T innovation platforms	Improves the operational efficiency of S&T innovation platforms	Improves the operational efficiency of S&T innovation platforms	
Dominant factor	Government guidance	Market orientation	Market orientation	Market orientation	

2.3.1. Commercial Logic

In today’s increasingly competitive business environment, the S&T innovation platform can only promote and improve enterprise innovation performance by continuously enhancing commercial value. The commercial logic of the S&T innovation platform reflects the institutional logic that the S&T innovation platform puts the economic interests of enterprises first in the operation process and obtains competitive advantages through economic performance [37–39]. The essential consideration is the trade-off between cost and gain and the prediction of competitive advantage, position and pattern change in multisubject innovation activities.

Glynn and Lounsbury (2005) [40] proposed that commercial logic is shown when an organization pursues profit, resulting in market-oriented behavior characteristics. Aisaiti et al.

(2021) [30] pointed out that commercial logic is intermediary in co-ordinating the consensus of customers, suppliers, employees, government, competitors and investors. Specifically, the commercial logic of the S&T innovation platform is conducive to gathering science and innovation resources and talents, which can reduce the cost of technology transactions and R&D of enterprises and ultimately improve the profit level of each innovation subject. In addition, the commercial logic of the S&T innovation platform avoids the “free-riding” phenomenon of enterprises to a certain extent. It creates a good market environment by improving the competitive market advantages of the innovation subjects in the S&T innovation platform [13]. Therefore, the S&T innovation platform promotes the flow and spillover of innovation resources by showing commercial logic. Based on the above analysis, this paper puts forward the following hypothesis:

H2a: *Commercial logic under construction logic has a mediating effect mechanism between the multisubject perspective of the S&T innovation platform’s target positioning and its network innovation capability.*

2.3.2. Social Logic

Social logic refers to highlighting social needs, attaching importance to applied value, focusing on applied research and technological research to solve specific problems, evaluating and rewarding research results based on social contribution, and emphasizing the governance logic of scholarship in economic and social development [40]. For S&T innovation, social logic advocates that the pursuit of innovation by enterprises is not only the purpose but also a value concept that serves society. It regards research as a source of trust for the public, emphasizes the transformational application of scientific and technological achievements, and reflects the value judgment of enterprises in pursuing innovative activities. The social logic of the S&T innovation platform is embodied in the practical problems of social innovation and development based on social needs, focusing on the research and development of new technologies and new methods to help people solve practical problems.

Social logic helps tech start-ups gain trust from social logic stakeholders, thereby increasing the S&T innovation platform’s network innovation capability. The social logic evaluation criterion of the S&T innovation platform is to emphasize the practical relevance of innovative behaviors and their contribution to economic and social development, to improve social logic, and to regard research as a mean to solve social problems. The social logic of the S&T innovation platform requires enterprises to take the initiative to promote social development, improve the quality of human life, serve social development and progress, and realize the value of innovative technologies in their innovation activities. The social logic evaluation standard of the S&T innovation platform emphasizes the practical relevance of innovation behaviors and their contribution to economic and social development, has the goal of improving social welfare, and regards research as a means to solve social problems. The social logic of S&T innovation platforms requires enterprises to take the initiative to promote social development, improve the quality of human life, serve social development and progress, and realize the value of innovative technologies in innovation.

At the same time, the S&T innovation platform belongs to the public space. The enterprises must consider when innovation activities platform the rights of stakeholders, from the objective of increasing corporate social responsibility, keep the enterprise in the face of innovation activities more open and inclusive, and then promote the S&T innovation platform’s network innovation capability [13]. Therefore, it is necessary to improve the social logic of the corporate social responsibility of the S&T innovation platform, enhance the positive evaluation and acceptance of the S&T innovation platform users and the public and government departments for S&T innovation enterprises, and realize the S&T innovation platform’s network innovation capability. Based on the above analysis, this article proposes the following assumption:

H2b: *The social logic under the construction logic has a mediating effect mechanism between the multisubject perspective of the S&T innovation platform target positioning and the S&T innovation platform's network innovation capability.*

2.4. The Mediating Role

2.4.1. The Mediating Role of Transformational Logic

The transformational logic of the S&T innovation platform refers to reconstructing the platform's revenue and cost structure and carrying out iterative innovation of the business model. Additionally, the transformational logic improves the innovation level of the platform, and the intelligence and customization of information services through the digital sharing of equipment resources, to improve the business efficiency of science and innovation services and further promote the transformation and upgrading of the existing network of S&T innovation platforms [41].

Digital technology has the essential characteristics of homogeneity, programmability, iteration and replicability, which can break the boundaries of organization, industry and geography, reduce the cost of enterprise innovation, and improve the S&T innovation platform's network innovation capability [17]. Therefore, the mediating role of transformational logic is mainly reflected in the following aspects: first, there is a certain physical distance between members within the innovation platform network, and applying digital technology homogeneity can realize real-time data sharing, the flow of business information flow, the resource sharing of organizations and technical service integration, and reduce the cost of enterprise of innovation resources and communication cost between members. Improving the efficiency of communication and information exchange and expanding the scope of communication are conducive to collaborative innovation among different members [42].

Second, the programmability of digital technology enables digital products to be restructured according to users' needs [43], resulting in many derivative innovations in digital process innovation, thus improving the S&T innovation platform's network innovation capability. Third, through the iterative reconstruction of the digital technology innovation scene, innovative products and timely information updates improve the management efficiency and organization value to form a new strategic mode. The strategic model provides specific knowledge of digital innovation vision, action plan and strategy, forming a shared understanding through full communication among multiple subjects within the innovation platforms [20]. The iterative capability of the S&T innovation platform is driven by innovation and fully adopts digital interconnection science innovation facilities to realize social sharing and digital access to the internet to adjust the co-creation of the business model [9]. Fourth, the replicability of digital technology helps enterprises share data, codes, programs and systems, formulate differentiation strategies and goals and build competitive advantages [44]. The close collaboration between the innovation platform and the enterprises it runs can realize value co-creation. Value co-creation can enable an individual enterprise to achieve innovative performance that cannot be achieved alone [45].

Based on the above analysis, this paper puts forward the following hypothesis:

H3: *Transformational logic has a mediating effect mechanism between the multisubject perspective of the S&T innovation platform's target positioning and the S&T innovation platform's network innovation capability.*

2.4.2. The Moderating Effect of Market Orientation and Government Guidance

Innovation is an essential engine for the high-quality development of the Chinese economy. The government and the market both play important roles in allocating innovative resources. The development of the S&T innovation platform is simultaneously promoted by endogenous forces led by the market and exogenous forces guided by the government, and achieves "1 + 1 > 2" development benefits [46,47]. Lin (2017) [48] proposed that the key

to China's innovative development lies in the dual role of government and efficient market, making it an organic, complementary and mutually reinforcing pattern. In this regard, the relationship between the government as the "visible hand" and the market as the "invisible hand" in resource allocation has also become the focus of academic research. Therefore, this study further explores the moderating effect of market lead and government guidance.

(1) The moderating role of the market lead

In market lead S&T innovation platforms, enterprises attract substantial market profits and actively carry out innovation activities [47]. The commercial logic is strengthened to improve the success rate of innovation activities and increase their ability to control resources. Under market leadership, enterprises search for knowledge through multiple channels and a wide range according to market dynamics and customer demand and conduct in-depth integration and utilization to improve innovation performance [48].

The enterprise can effectively search and integrate market knowledge, reduce R&D costs and improve knowledge utilization efficiency. With the market lead, the S&T innovation platform can reduce the time and capital cost of searching, obtaining and sorting market information for S&T innovation platform members, enhancing the relationship between the multisubject perspective of the S&T innovation platform target positioning and commercial logic, and improving the S&T innovation platform network innovation performance.

Market lead can broaden the search scope for enterprises to obtain market demand information, the capital and resources invested in forming market demand for innovation activities and the organizational structure and value network constructed by enterprises [49], whose value network promotes the flow and spillover of innovation resources. Under market lead, enterprises can better understand and meet customers' specific needs. Previous studies found that market lead is conducive to meeting stakeholders' needs, such as customers, and improving corporate social performance [30]. For example, Bhattarai et al. (2019) [45], based on the empirical analysis of 164 British social enterprises, found that market lead can improve companies' social and economic performance. The transformational logic of digital technology has the characteristics of immediacy, is conducive to speeding up the development end, middle end and downstream user interaction, and use feedback to speed up the innovation subject to obtain information and resources [48,49]. The innovation subject can be involved in the process of interaction by integrating information, increasing the S&T platform's network innovation capability [50]. At the same time, under market lead, digital technology has transparency characteristics which can alleviate the problems caused by information asymmetry, improve the identity of innovation subjects, and achieve value co-creation [36]. Based on the above analysis, this paper proposes the following:

H4: *The market lead moderating effect impacts the S&T innovation platform's network innovation capability through commercial logic under construction logic.*

H5: *The market lead regulation effect impacts the S&T innovation platform's network innovation capability through social logic under construction logic.*

H6: *The market lead regulation effect impacts the S&T innovation platform's network innovation capability through transformational logic.*

(2) The moderating effect of government guidance

Government guidance refers to the intervention of different organizations through the formulation and promulgation of policies and regulations, or a series of administrative measures with the government as the main body, aiming to make up for market failures by intervening in the market behaviors of companies [46].

Government guidance will impact the behaviors of S&T innovation platform members, and platform members can achieve their goals by adjusting their strategies and behaviors with the support of government policies. Governments can influence markets through the "visible hand" of industrial policy. For example, the government sends

signals to the market through industrial policies and guides companies to make decisions in line with government planning and guidance. The government guides resource factors to the industries it wants to develop and guides social resources to support industries [47].

Government financial support, such as financial subsidies, is the purpose of innovation policy to promote an organization's innovation capability, increase productivity, enhance the company's competitive advantage, and create a good innovation environment for enterprise innovation [48]. A good innovation environment is conducive to enhancing its profits and, in turn, promoting the formation and development of commercial logic. In the process of government guidance, the government continuously updates and improves its mechanism of operation through the power of technology, and provides high-quality, accurate and comprehensive public services through close co-operation with enterprises and the use of its industrial resources and customer resources [49]. Therefore, the government is conducive to promoting the formation of social logic.

With the government's guidance, through the orderly flow, effective governance and safe sharing of data, a data-centered operation mechanism is constructed to break the constraints of traditional systems and mechanisms. It better adapts to the urgent needs of the people for more efficient and accurate government services and then promotes the formation of social logic [50]. The government and administrative departments rely on digital technology to formulate the information disclosure mechanism and management mechanism of the S&T innovation platform, promote the balance between commercial development and privacy protection, co-ordinate the interesting relationship between enterprises on the platform, and avoid the formation of a monopoly [51]. The institutional environment created by the government affects digital capabilities such as digital connectivity, digital aggregation, and intelligent analysis, enhancing innovative competitive advantages and improving the S&T innovation platform's network innovation capability [52,53]. The conceptual framework showed in Figure 2.

H7: The government guidance moderating effect impacts the S&T innovation platform's network innovation capability through commercial logic under construction logic.

H8: The government guidance regulation effect impacts the S&T innovation platform's network innovation capability through social logic under construction logic.

H9: The government guidance regulation effect impacts the S&T innovation platform's network innovation capability through transformational logic.

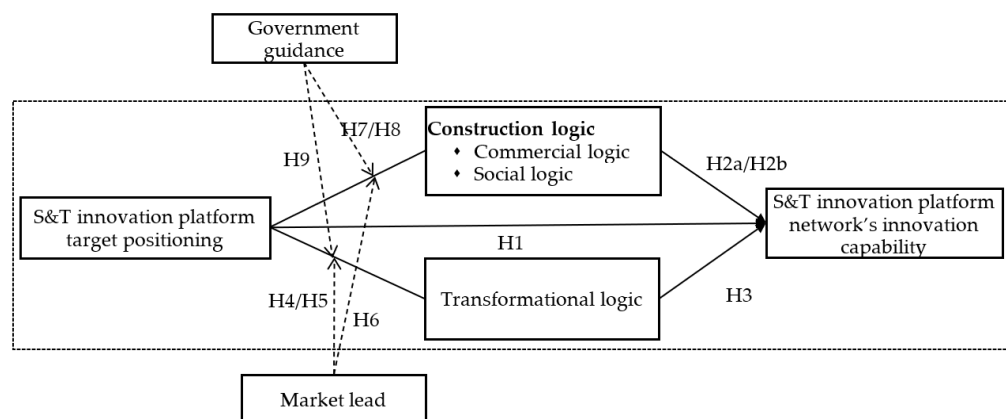


Figure 2. Conceptual framework.

3. Research Design

3.1. Research Sample

We selected the research samples from high-tech enterprises related to S&T innovation platforms in developed regions such as Beijing, Shanghai, Guangzhou and Shenzhen,

China. The main reasons for choosing high-tech enterprises in the S&T innovation platform in developed areas are as follows: First, as the four most developed regions in China, the governments of the four regions pay special attention to the critical role played by innovation in maintaining their leading positions in the region, have built world-class NIDZs, and set up S&T innovation centers, gathering high-end talents and many S&T innovation platforms. Secondly, the innovation level of the S&T innovation platform in the developed eastern regions such as Beijing, Shanghai, Guangzhou, and Shenzhen is already at the forefront of the world, and its operating procedures are relatively mature. However, the development of the S&T innovation platform in the central and western regions is still in the primary and exploration stage due to resource constraints such as geographical location. Therefore, a discussion of the S&T innovation platforms in the developed eastern regions is crucial for developing S&T innovation platforms in the central and northwest areas of China.

We mainly collected the data through interviews and questionnaires. We interviewed the manager of each S&T innovation platform to obtain relevant ideas for the questionnaire design. Hence, the interview content mainly involved the current situation of developing the S&T innovation platform. The questionnaire adopted the Likert five-point scale, and the measurement items mainly applied the scale from published academic papers at home and abroad. We designed the questionnaire according to the research content of this paper and the relevant information collected in the survey interview. We invited three experts in the relevant fields to modify the questionnaire. Before distributing the questionnaire, the study team contacted the surveyed enterprises to explain the purpose of the study and the relevant research content and received relevant support for data collection. We collected the questionnaire using both online and offline methods.

We sent out the questionnaire to the senior management of high-tech enterprises of the S&T innovation platforms in an anonymous manner. We asked respondents to fill out platform names to avoid repeated questionnaires. Due to the pandemic's impact in China, cities without research group members collected data by filling out questionnaires online.

The questionnaires of this study were sent and received from July 2021 to May 2022, which lasted for ten months, and involved 53 S&T innovation platforms in the developed areas of the east, such as Beijing, Shanghai, Guangzhou, and Shenzhen, with a total of 874 questionnaires distributed. We received 655 questionnaires, excluding unqualified incomplete and abnormal fillings. We obtained 600 valid questionnaires and 55 invalid questionnaires, with an effective recall rate of 68.65%. According to statistics, the questionnaire recall rate of each S&T innovation platform exceeded half, which met the basic requirements of this study.

3.2. Research Measurement

The measurement items in this paper mainly refer to mature scales in academic papers. We designed the questionnaire according to the research content of this paper and the relevant information collected from the research interviews. We invited the research group's three experts in related fields to revise the questionnaire, as shown in Table 2. The control variables include the company's annual income (AI). The company's scope was divided into five groups: 1 million and below, 1 million to 10 million, 10 million to 15 million, 50 million to 100 million, and more than 100 million. The second factor was the nature of the enterprise (NE). We divided this into five groups: state-owned, privately funded, foreign-funded, joint venture, and others. The third factor was enterprise size (SE), divided into four groups: less than 100 people, 100 to 499 people, 500 to 999 people, and more than 1000 people. The goal positioning of the S&T innovation platform is to enhance its network innovation capability. Therefore, the target positioning of the platform can be reflected by the perspective of multiple subjects. For details please refer Appendix A.

Table 2. Variable measurements.

Variable	Potential Variables		Variable Measurements	
	Name	Symbol	Item	References
Independent Variable	Multisubject perspective of the S&T innovation platform target positioning	IPT	The S&T innovation platform emphasizes financial strength The S&T innovation platform enhances team strength and knowledge sharing The S&T innovation platform has purpose-driven shared services (such as providing talents, projects and patent services) The S&T innovation platform target positioning reflects development goals and profit goals The S&T innovation platform focuses on core technologies and common technologies The S&T innovation platform's positioning reflects the regional characteristics of the business (mainly located in eastern and northern part of China) The S&T innovation platform's positioning reflects the concept of sustainable development The S&T innovation platform leads R&D of high technology	[54–56]
Mediation variables	Construction logic	CL	The S&T innovation platform responds to dynamic environmental changes in a timely manner The company can gain insight into market information in pursuit of business value Strategic alignment between different innovation objects to ensure competitive advantage The companies on the S&T innovation platform compete and collaborate to gain a competitive advantage	[34,46,57–59]
	Social logic	SL	The government department attaches importance to the social responsibility of public technology research and development The S&T innovation platform serves the public and innovates as its own responsibility The companies are based on social benefits and take into account economic benefits Provide public welfare services	[11,29]
Moderating Variable	Transformational logic	TL	The company implements digital enabling technologies The S&T innovation platform digitizes processes or digital services The S&T innovation platform digital governance enables synergy The S&T innovation platform puts forward smart connectivity The S&T innovation platform puts forward smart clouds The S&T innovation platform puts forward big data analytics The company enhances the resource capacity ratio The company reconstructs profit models and value streams	[60]
	Market lead	MO	Selection of partners Innovation direction or technology iteration Achievement transformation transactions Global allocation of innovative resources	[56–58]
Dependent variable	S&T innovation platform network innovation capability	CEIN	Tax and fiscal policy support Raise funds for innovation support Fintech services Tax advisory services	[61,62]
			Promises and trust A frank exchange of views Provides truthful information Long-term, close co-operation Collaboration and mutual assistance Alert to potential problems and changes Closely linked Central position Information exchanging mechanism Relies on the platform network connection Brings together key partners in the alliance Matchmaking third-party co-operation Supporting shared services for large scientific installations Collaborative consensus on knowledge and technology sharing Recognize technical prototyping capabilities Recognize the ability to transform the results into pilots	[63–65]

4. Hypothesis Testing and Result Analysis

4.1. Reliability Validity Test of the Questionnaire

To further test and explain the reliability and validity of the measure items of each variable, the data collected in this paper were subjected to factor analysis and reliability tests for the questionnaire, as shown in Table 3. As can be seen from Table 3, Cronbach's coefficients for each variable $\in [0.727, 0.991]$ indicate that the scale reliability was excellent. At the same time, a Bartlett sphere test was performed on the measurement of each variable. Sig reference was 0.000, and the KMO value of each variable was $\in [0.747, 0.893]$, which meets the requirements of a threshold value greater than 0.700, indicating that the questionnaire applied in this paper was suitable for factor analysis.

Table 3. Variable factor analysis and reliability validity test.

Variable Name	Measurement Item	KMO	Cronbach's	Factor Loading	AVE	CR
Multisubject perspective of the S&T innovation platform's target positioning	IPT1	0.877	0.895	0.783	0.659	0.939
	IPT2			0.884		
	IPT3			0.784		
	IPT4			0.787		
	IPT5			0.882		
	IPT6			0.684		
	IPT7			0.884		
	IPT8			0.787		
Established logic	CL1	0.892	0.991	0.684	0.530	0.849
	CL2			0.688		
	CL3			0.785		
	CL4			0.689		
	SL1	0.893	0.990	0.886	0.689	0.916
	SL2			0.684		
	SL3			0.886		
	SL4			0.887		
Transformational logic	TL1	0.747	0.783	0.741	0.637	0.933
	TL2			0.743		
	TL3			0.840		
	TL4			0.744		
	TL5			0.948		
	TL6			0.746		
	TL7			0.750		
	TL8			0.848		
Market lead	MO1	0.795	0.892	0.788	0.547	0.828
	MO2			0.787		
	MO3			0.688		
	MO4			0.690		

Table 3. Cont.

Variable Name	Measurement Item	KMO	Cronbach's	Factor Loading	AVE	CR
Government guidance	GG1	0.793	0.892	0.689	0.590	0.850
	GG2			0.690		
	GG3			0.887		
	GG4			0.788		
The network innovation capability of the S&T innovation platform	CEIN1	0.825	0.727	0.870	0.629	0.964
	CEIN2			0.862		
	CEIN3			0.764		
	CEIN4			0.861		
	CEIN5			0.755		
	CEIN6			0.845		
	CEIN7			0.743		
	CEIN8			0.747		
	CEIN9			0.825		
	CEIN10			0.742		
	CEIN11			0.638		
	CEIN12			0.718		
	CEIN13			0.732		
	CEIN14			0.830		
	CEIN15			0.841		
	CEIN16			0.833		

Through exploratory factor analysis, each item of the factor loading $\in [0.638, 0.948]$, with the critical value of more than 0.500 standards, shows that the scale had a good degree of polymerization. We further calculated the average extraction variation (AVE) value and combined reliability (CR) value according to a load of each measurement item. Among them, the average extraction variance (AVE) value $\in [0.530, 0.689]$ met the requirements of being close and the critical value being greater than or equal to 0.500, showing that scale discrimination validity was apparent. At the same time, the combination reliability (CR) value $\in [0.828, 0.964]$ met the requirements of being greater than or equal to 0.700, and therefore this study's reliability level was within an acceptable range. To sum up, the data collected by this scale met the analysis requirements of this paper.

4.2. Descriptive Statistics and Correlation Analysis

In this paper, SPSS22.0 software was applied for data analysis, and each variable's mean, standard deviation, and Pearson correlation coefficients are shown in Table 4. The results show that the Pearson correlation coefficient between each variable was less than 0.6 and in the acceptable range. It can be seen that there is no correlation problem between independent variables, dependent variables, regulatory variables and control variables.

4.3. Analysis of Main Effect, Intermediary Effect and Moderating Effect

We adopted a step-by-step regression model. First, we processed the data to calculate the interaction term value of the general and the moderating variable. Then, we added the control variable, the independent variable, the moderating variable, and the interaction terms of the independent variable and the moderating variable. We tested the hypotheses

proposed in this paper. The regression results of the main effect, the mediation effect and the moderating effect are included in Tables 5 and 6, respectively.

Table 4. Descriptive statistics and correlation analysis of each variable.

Variable	Mean	Std	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
AI (1)	3.05	0.64	1									
NE (2)	2.98	1.37	−0.006	1								
SE (3)	2.90	1.38	−0.047	0.024	1							
IPT (4)	3.14	1.35	−0.10	−0.022	−0.020	1						
CL (5)	3.42	1.23	−0.10	−0.012	0.331 ***	0.475 ***	1					
SL (6)	3.05	1.31	−0.026	0.384 ***	−0.017	0.464 ***	0.549 ***	1				
TL (7)	2.30	1.04	−0.043	0.016	0.503 ***	0.365 ***	0.352 ***	0.673 ***	1			
MO (8)	2.89	1.37	−0.053	0.026	0.588 ***	−0.025	0.331 ***	−0.027	0.501 ***	1		
GG (9)	2.30	1.35	−0.007	0.687 ***	0.022	−0.021	−0.014	0.353 ***	0.014	0.023	1	
CEIN (10)	2.91	0.48	0.372 ***	0.063	0.189 ***	0.508 ***	0.699 ***	0.650 ***	0.695 ***	0.181 ***	0.056	1

Note: The correlation coefficient is the Pearson coefficient. *** indicates significance at the 1% level.

Table 5. Main effects tests.

Variable Name	CEIN	
	Model 1	Model 2
Control variable		
AI	0.285 ***	0.291 ***
NE	0.021	0.076 ***
SE	0.071 ***	0.026 ***
Independent variable		
IPT		0.253 ***
Adjusted R2	0.181	0.698
F	44.00	346.83

Note: *** indicates significance at the 1% level.

Table 6. Mediation effects test.

Low Investment	CL		SL		TL		CEIN		
	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
Control variable									
AI	0.010	0.028	−0.051	−0.032	−0.031	−0.017	−0.044	−0.036	−0.033
NE	−0.018	−0.001	0.332 ***	0.35 ***	0.003	0.016	0.090	0.029	0.083
SE	0.295 ***	0.31 ***	−0.025	−0.009	0.378 ***	0.390 ***	0.178	0.213 ***	0.019
Independent variable									
IPT		0.800 ***		0.840 ***		0.596 ***	0.659 ***	0.598 ***	0.452 ***
Mediating variable									
CL							0.107 **		
SL								0.174 ***	
TL									0.492 ***
R2	0.105	0.887	0.118	0.881	0.250	0.853	0.834	0.700	0.715
F	24.495	1177.61	27.57	1109.38	67.38	871.23	602.3	280.16	301.17

Note: *** indicates significance at the 1% level, ** indicates significance at the 5% level.

Table 5 shows the test results of the main effects. In Model 2, its F value is 346.84, and the significance level is less than 0.01, indicating that the overall regression effect of this model is

significant. In this model, the multisubject perspective of the S&T innovation platform target positioning has a significant positive impact on the network innovation capability of the S&T innovation platform ($\beta = 0.253, p < 0.01$). Therefore, hypothesis 1 was verified.

Table 6 shows the results of the mediation effect. Model 4 examines the influence of the multisubject perspective of the S&T innovation platform target positioning on the commercial logic under the construction logic, and the test results show that the multisubject perspective of the S&T innovation platform target positioning has a significant positive impact on commercial logic under construction logic ($b = 0.800, p < 0.01$). From Model 9, the coefficient of commercial logic under construction logic is positive and significant ($b = 0.107, p < 0.01$). The result indicates that commercial logic under construction logic has an intermediary effect mechanism between the multisubject perspective of the S&T innovation platform target positioning and the co-ordination effect of the S&T innovation platform network innovation capability, thus verifying hypothesis 2. Model 6 examines the influence of the multisubject perspective of the S&T innovation platform on social logic under construction logic, and the test results show that the multisubject perspective of the S&T innovation platform has a significant positive impact on social logic under construction logic ($b = 0.840, p < 0.01$). From model 10, the coefficient of social logic under construction logic is positive and significant ($b = 0.174, p < 0.01$), indicating that social logic under construction logic is within the multisubject perspective of the S&T innovation platform and the S&T innovation platform. There is a mediation mechanism between the network innovation capability, which verifies hypothesis 3. Model 8 examines the influence of the multisubject perspective of the S&T innovation platform target positioning on transformational logic, and the test results show that the multisubject perspective has a significant positive impact on the transformational logic ($b = 0.800, p < 0.01$). From model 11, the coefficient of transformational logic is positive and significant ($b = 0.492, p < 0.01$). There is a mediation mechanism between network innovation capability, which verifies hypothesis 4. Table 7 shows the moderating effect of market lead.

Table 7. Test of the moderating effect of market lead.

Variable	CL	SL	TL	CEIN		
	Model 12	Model 13	Model 14	Model 15	Model 16	Model 17
Control variable						
AI	−0.021	−0.035	−0.012	0.292 ***	0.293 ***	0.293 ***
NE	0.047	0.350 ***	0.017 **	0.027 ***	0.095 **	0.025 ***
SE	0.390 ***	0.226 ***	0.049	0.040	0.015	0.034
Independent variable						
IPT	0.516 ***	0.820 ***	0.135 ***	0.164 ***	0.156 ***	0.148 ***
Mediating variable						
CL					0.156 ***	
SL						
TL						0.119 ***
Moderating variable						
MO	−0.118	−0.259 ***	−0.148 ***	−0.059	−0.077	−0.041
Interaction items						
IPT * MO	0.027 ***	0.006	0.157 ***	0.030 ***	0.001	0.012
R2	0.855	0.882	0.934	0.711	0.715	0.715
F	589.24	748.72	1411.32	246.44	215.58	215.49

Note: *** indicates significance at the 1% level, ** indicates significance at the 5% level, and * indicates significance at the 10% level, the same below.

Table 7 shows the results of the regression of the market lead moderating effect. Model 15 examines the moderating impact of market lead between the multisubject perspective and the S&T innovation platform's network innovation capability. The interaction

term coefficient of the market lead and the multisubject perspective of the S&T innovation platform has a positive and significant effect ($b = 0.030, p < 0.01$). This shows that market lead plays a positive moderating role between the multisubject perspective of the S&T innovation platform and the S&T innovation platform's network innovation capability. Models 12 and 16 test whether the market lead moderating impact can affect the S&T innovation platform's network innovation capability through commercial logic under construction logic. In model 12, the interaction term of the market lead and the S&T innovation platform's network innovation capability significantly positively affect commercial logic under construction logic ($b = 0.027, p < 0.01$). At the same time, in model 16, the commercial logic coefficient under construction logic is positive and significant ($b = 0.156, p < 0.01$). The market lead moderating effect impacts the network innovation capability of the S&T innovation platform through commercial logic under construction logic. Therefore, hypothesis 5 is established. The F-value of model 13 is 784.72, and the significance level is less than 0.01, indicating that the overall regression effect of the model is significant. The multisubject perspective of innovation platform target positioning in this model is ($b = 0.820, p < 0.01$) and market lead ($b = -0.259, p < 0.01$); both have significant positive effects on social logic under construction logic. Still, the interaction term coefficient between the multisubject perspective of the S&T innovation platform and the market lead is insignificant ($b = 0.006, p > 0.1$). The result indicates that the market lead moderating effect cannot impact the network innovation capability of the S&T innovation platform through the social logic under the construction logic; that is, hypothesis 6 is not established. Models 14 and 17 test whether the market lead moderating effect can impact the network innovation capability of the S&T innovation platform through transformational logic and the interaction term of the market lead, and the multisubject perspective of the S&T innovation platform in model 14 significantly positively impacts the transformational logic ($b = 0.157, p < 0.01$). At the same time, in model 17, the transformational logic coefficient is positive and significant ($b = 0.119, p < 0.01$). The result indicates that the market lead moderating effect impacts the network innovation capability of the S&T innovation platform through transformational logic. That is, we proved that hypothesis 7 is valid. Table 8 shows the moderating effect of the government guidance effect.

Table 8. Government guidance moderating effect test.

Variable	CL	SL	TL	CEIN	
	Model 18	Model 19	Model 20	Model 21	Model 22
Control variable					
AI	0.029	−0.040	0.033	−0.044	0.292 ***
NE	0.063	−0.024	−0.001	0.164	0.103 **
SE	0.310 ***	−0.007	−0.010	0.211 ***	0.076 ***
Independent variable					
IPT	0.822 ***	0.630 ***	0.795 ***	0.684 ***	0.199 ***
Mediating variable					
CL					0.059 **
Moderating variable					
GG	−0.042	0.157	0.319 ***	−0.142	−0.105 **
Interaction items					
IPT * GG	−0.008	0.071 ***	0.002	0.021 *	0.001
R2	0.887	0.894	0.890	0.834	0.701
F	784.43	843.74	807.66	500.12	201.41

Note: *** indicates significance at the 1% level, ** indicates significance at the 5% level, and * indicates significance at the 10% level, the same below.

Table 8 shows the regression results of the government guidance moderating effect. Model 21 examines the moderating impact between the multisubject perspective of the S&T innovation platform and the network innovation capability. The positive impact of the interaction term coefficient between government guidance and the multi-

subject perspective of the S&T innovation platform in this model is significant ($b = 0.021$, $p < 0.1$). In Table 8, the government guidance positively moderates the relation between the multisubject perspective of the S&T innovation platform and the S&T innovation platform's network innovation capability. The F-value of model 18 is 784.43, and the significance level is less than 0.01, which indicates that the overall regression effect of the model is significant and the multisubject perspective of the S&T innovation platform in this model ($b = 0.822$, $p < 0.01$) has a significant positive impact on commercial logic under construction logic. However, the interaction term coefficient between the multisubject perspective of the S&T innovation platform and government guidance is insignificant ($b = -0.008$, $p > 0.1$). This shows that the government guidance moderating effect cannot affect the network innovation capability of the S&T innovation platform through commercial logic under construction logic. That is, hypothesis 8 is invalid. Models 19 and 22 test whether the moderating impact of government guidance can affect the co-ordination effect of the S&T innovation network through social logic. The interaction term coefficient of government guidance and multisubject perspective S&T innovation platform in model 19 is positive and significant ($b = 0.027$, $p < 0.01$). At the same time, in model 22, social logic is positive and significant ($b = 0.059$, $p < 0.05$), indicating that the government guidance moderating effect impacts the network innovation capability of the S&T innovation platform through social logic under construction logic; that is, hypothesis 9 is established. The F-value of model 14 is 807.66, and the significance level is less than 0.01, indicating that the overall regression effect of the model is significant. The multisubject perspective of the S&T innovation platform in this model is ($b = 0.795$, $p < 0.01$) and government guidance ($b = 0.319$, $p < 0.01$); both have significant positive effects on transformational logic. However, the interaction term coefficient between the multisubject perspective of the S&T innovation platform and government guidance is insignificant ($b = 0.002$, $p > 0.1$), indicating that the moderating effect of government guidance is not significant. Transformational logic cannot affect the network innovation capability of the S&T innovation platform.

4.4. Further Testing the Joint Role of Market Leadership and Government Guidance

Table 9 shows the moderating effect under market lead and government guidance regression results. Model 26 examines the moderating effect of market lead and government guidance between the multisubject perspective of the S&T innovation platform and the network innovation capability. The positive and significant influence of the interaction term coefficient of market lead and government guidance, and the multisubject perspective of the S&T innovation platform, is significantly affected ($b = 0.003$, $p < 0.01$). This shows that the joint impact of market lead and government guidance plays a positive role in moderating the of the S&T innovation platform and the co-ordination effect of the S&T innovation platform network. Models 23 and 27 test whether the moderating effect under the joint action of market lead and government guidance can affect the network innovation capability of the S&T innovation platform through commercial logic under construction logic. In model 23, the interaction term between the market lead and government guidance and the multisubject perspective of the S&T innovation platform target positively affects social logic under construction logic ($b = 0.010$, $p < 0.01$). In model 27, the commercial logic coefficient under construction logic is positive and significant ($b = 0.163$, $p < 0.01$), indicating that the moderating effect under the joint action of market lead and government guidance affects the network innovation capability of the S&T innovation platform through commercial logic. Models 24 and 28 show the moderating effects of the combination of market lead and government guidance. In model 24, the interaction term of the market lead and government guidance, and the multisubject perspective of the S&T innovation platform, significantly positively impact social logic ($b = 0.007$, $p < 0.01$). At the same time, in model 28, the social logic coefficient is positive and significant ($b = 0.035$, $p < 0.01$), indicating that the moderating effect under the joint impact of market lead and government guidance affects the network innovation capability of the S&T innovation platform through social logic. Models 25 and 29 test whether the moderating effect under the joint impact of

market lead and government guidance can impact the network innovation capability of the S&T innovation platform through transformational logic, and the interaction term of market lead, government guidance and multisubject perspective of the S&T innovation platform in model 25 significantly positively affects transformational logic ($b = 0.017$, $p < 0.01$). At the same time, in model 29, the transformational logic coefficient is positive and significant ($b = 0.153$, $p < 0.01$), indicating that the moderating effect under the joint action of market lead and government guidance impacts the network innovation capability of the S&T innovation platform through transformational logic.

Table 9. The joint impact of market lead and government guidance.

Variable	CL	SL	TL	CEIN			
	Model 23	Model 24	Model 25	Model 26	Model 27	Model 28	Model 29
Control variables							
AI	−0.009	−0.037	−0.022	0.289 ***	−0.011	0.291 ***	0.293 ***
NE	0.015	−0.018	0.019	0.098 **	−0.008	0.099 **	0.095 **
SE	−0.009	0.199 **	0.099	0.052	−0.014	0.042	0.037
Independent variable							
IPT	0.490 ***	0.779 ***	0.445 ***	0.225 ***	0.460 ***	0.185 ***	0.157 ***
Mediation variables							
CL					0.163 ***		
SL						0.035 **	
TL							0.153 ***
Moderating variable							
MO	0.231 ***	−0.276 ***	0.129 *	−0.006	0.022	0.008	−0.026
GG	0.306 ***	0.315 ***	−0.163 **	−0.103 **	0.013	−0.119 **	−0.078
Interaction variable							
IPT * MO * GG	0.010 ***	0.007 ***	0.017 ***	0.003 ***	0.007 ***	0.003 ***	0.001
Adjusted R2	0.913	0.889	0.884	0.703	0.816	0.704	0.715
F	894.39	683.21	651.16	202.80	332.54	179.05	188.49

Note: *** indicates significance at the 1% level, ** indicates significance at the 5% level, and * indicates significance at the 10% level.

Following hypothesis testing and result analysis, we concluded that the hypotheses results were as follows (see Table 10):

Table 10. The hypotheses results.

Hypothesis	Result
H1: The multisubject perspective of the S&T innovation platform's target positioning has a significant positive impact on the S&T innovation platform's network innovation capability.	Accepted
H2a: Commercial logic under construction logic has a mediating effect mechanism between the multisubject perspective of the S&T innovation platform target positioning and the S&T innovation platform's network innovation capability.	Accepted
H2b: Social logic under construction logic has a mediating effect mechanism between the multisubject perspective of the S&T innovation platform's target positioning and the S&T innovation platform's network innovation capability.	Not Accepted
H3: Transformational logic has a mediating effect mechanism between the multisubject perspective of the S&T innovation platform's target positioning and the S&T innovation platform's network innovation capability.	Accepted
H4: The market lead moderating effect impacts the S&T innovation platform's network innovation capability through commercial logic under construction logic.	Accepted
H5: The market lead moderating effect impacts the S&T innovation platform's network innovation capability through social logic under construction logic.	Accepted
H6: The market lead moderating effect impacts the S&T innovation platform's network innovation capability through transformational logic.	Accepted
H7: The government guidance moderating effect impacts the S&T innovation platform's network innovation capability through commercial logic under construction logic.	Accepted
H8: The government guidance moderating effect impacts the S&T innovation platform's network innovation capability through social logic under construction logic.	Accepted
H9: The government guidance moderating effect impacts the S&T innovation platform's network innovation capability through transformational logic.	Accepted

5. Conclusions

5.1. Research Conclusions

The S&T innovation platform is an effective way to gather innovative resources, talents, and technological innovation. The S&T innovation platform transforms the innovation

activities initially realized by all innovation subjects independently, or simply through linear co-operation, into a collaborative innovation process [9]. Its target positioning is that an innovation platform refers to the integration and accumulation of various innovation resources, such as human resources, information resources and technological resources required for scientific and technological innovations. Previous research on the S&T innovation platform mainly discusses the influence of the above factors on innovation performance from innovation network elements, innovation network embeddedness, and network characteristics of the S&T innovation platform. However, there is little literature exploring the relation between the multisubject perspective of the S&T innovation platform and the network innovation capability. Through the S&T innovation network theory, this paper analyzed the S&T innovation platform and the formation of the network innovation capability. The research result extends the S&T innovation platform research perspective and category. The construction logic of the S&T innovation platform network determines the network from the S&T innovation platform. Additionally, the introduction of market lead and government guidance moderates the relation between the S&T innovation platform's target positioning and network innovation capability.

5.2. Theoretical Insight

As an essential part of the regional innovation system, the S&T innovation platform is the concentrated embodiment of regional innovation ability, and its status and role are increasingly prominent. After reviewing and analyzing the relevant domestic and foreign literature, we found that the relevant research results of the S&T innovation platform are mainly concentrated in the aspects of definition [5–7], function, characteristics of the S&T innovation platform [9] and the impact of innovation performance [12], and the lack of systematic and in-depth theoretical discussion.

Our study contributes to the existing literature in two ways. First, this study enriches the current understanding of S&T innovation platform target positioning and the S&T innovation platform's network innovation capability by considering both the "construction" and "transformational" aspects of institutional logic. However, previous studies discuss the relation between the S&T innovation platform and innovation performance [66]. They ignore the compatibility and distinct characteristics of the institutional approach. Drawing from the innovation network identity, we proposed and found that the multisubject perspective of an S&T innovation platform enhances the network innovation capability by integrating two institutional logics. Second, our study result extends the related literature by integrating transformational logic as an institutional logic that improves the S&T innovation platform's network innovation capability. The previous studies of digital transformation proposed that digital transformation provides both internal and external resources and enhances value co-creation [67,68]. Still, they did not consider digital transformation as an institutional logic which can improve the network innovation capability. In line with the main characteristic of digital empowerment, we explained that characteristics such as homogeneity, replicability, iteration, and programmability impact an S&T innovation platform's network innovation capability. Third, the previous studies on the S&T innovation platform should have addressed the importance of market lead and government guidance. By introducing the role of market leading and government guidance, this study enriches the boundary conditions for enhancing the network innovation capability of S&T innovation platforms. Through empirical analysis, we explored a way to improve the network innovation capability of the S&T innovation platform, which provides practical guidance for effectively combining the government guidance and market lead role.

Therefore, we proposed that the construction logic and transformational logic of the operation of the S&T innovation platform are the basis for improving the co-ordination effect. Operational logic, giving full play to the market's role in allocating resources and the government's role in guiding policies, can effectively enhance the efficiency of innovation resources and achieve performance improvement.

5.3. Management Insight

The conclusion of this paper provides several management implications for the multisubject perspective of the S&T innovation platform to enhance the network innovation capability of the S&T innovation platform. First, the more precise the multisubject perspective of the S&T innovation platform, the more it can promote the network innovation capability of the S&T innovation platform. Therefore, close co-operation among the members of the S&T innovation platform should be encouraged to share significant innovation resources such as talents, equipment and funds. S&T innovation platforms should provide accurate innovation services to innovative entities to enhance the awareness of innovation risk sharing among relevant stakeholders. At the same time, the S&T innovation platform needs to integrate decentralized innovation resources, integrate innovation resources into essential links that are beneficial to industrial development, and improve the ability of the innovation chain to allocate resources. S&T innovation platforms should give full play to the resource advantages held by innovative entities, make up for the disadvantages of innovative entities themselves, and attract more platform members through complementary advantages, open platform information, and promote the network innovation capability of S&T innovation platforms.

Second, the multisubject perspective of the S&T innovation platform enhances the network innovation capability of the platform through the intermediary effect of commercial logic. The S&T innovation platform should gather necessary innovation resources, reduce the cost of innovation transactions and research and development, and improve the profit level of innovative entities, thereby strengthening commercial logic and promoting the network innovation capability of the platform. The S&T innovation platform needs to create an innovative environment conducive to the research and development, investment and co-operation of multiple S&T innovation entities, co-ordinate the interest between innovative subjects, and fully demonstrate business logic to promote the flow and overflow of innovation resources.

Third, the target multisubject perspective of the S&T innovation platform enhances the network innovation capability of the platform through the intermediary effect of social logic. Therefore, the S&T innovation platform should assume specific social responsibilities, focus on social needs, and practical problems in social innovation, and solve social problems through new technologies and research and development. Therefore, in innovation practice, the S&T innovation platform should fully display social logic, enhance the positive feedback of platform users, the public, and government administrative departments to S&T innovation enterprises, and then co-ordinate the interest between multiple subjects.

Fourth, the multisubject perspective of the S&T innovation platform enhances the network innovation capability of the S&T innovation platform through the intermediary effect of transformational logic. S&T innovation platforms should focus on improving enterprises' digital and iteration capabilities. Enterprises should give full play to digital technologies' homogeneity and programmability. It effectively reduces the R&D cost of enterprises and promotes the network innovation capability of S&T innovation platforms.

Fifth, the market leads to the positive adjustment of the relationship between the multisubject perspective of the S&T innovation platform and commercial and transformational logic. S&T innovation platforms should pay attention to the role of market lead and enhance the role of the market in resource allocation. S&T innovation platforms need to reduce the time and money cost of platform members to collect, obtain and organize market information through market lead. Under market lead, the transformational logic should give full play to the immediacy characteristics of digital technology, promote the acquisition of information and resources by different innovative entities, and integrate innovative information in the interaction process between innovative subjects. Under the market's leadership, digital technology's transparency characteristics should play an important role, effectively alleviating the problems caused by information asymmetry, enhancing innovative subjects, and strengthening value co-creation.

Sixth, the government guidance positively moderates the relationship between the multisubject perspective of the S&T innovation platform and social logic. Governments should enact innovation policies to signal the market, guide companies to make decisions conducive to innovation, and direct resource elements to promising industries. The government should effectively govern data, promote the flow and safe sharing of data, provide more efficient and accurate government and public services, and solve social problems.

5.4. Research Prospects

Future research can be based on the following aspects: First, in this study, we applied a questionnaire, and future research can be tracked against enterprises within the network of S&T innovation platforms and longitudinal time series data can be collected to empirically test theoretical hypotheses and expand research effectiveness. Secondly, China's S&T innovation platforms are at the initial stage of development. This study only explores the problems faced in developing S&T innovation platform networks. We explore management measures to break through these constraints. However, over time, the development constraints faced by the S&T innovation platform network may change, and the institutional logic of the platform will also change, which will require further study.

Author Contributions: Conceptualization, methodology, software, validation, formal analysis, investigation, resources, data curation: Q.D.; writing—original draft preparation, G.A. and J.X. (Jiqing Xie); writing—review and editing, Q.D. and L.L.; visualization, supervision, project administration, J.X. (Jiaping Xie); funding acquisition, J.X. (Jiaping Xie) and G.A. The authors contributed equally to the paper. All authors have read and agreed to the published version of the manuscript.

Funding: This work was supported by the Key Program of National Social Science Foundation of China under Grant number 20AJY008; the major project of National Social Science Foundation of China under Grant number 20&ZD060; the Social Science Fund Project of Xinjiang Autonomous Region under Grant number 21BGL109; the Youth Science Project of Xinjiang Natural Science Foundation, Grant number 2020D01B12; the 2021 Graduate innovation fund of Shanghai University of Finance and Economics Grant number CXJJ-2021-402.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Written informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data presented in this study are available on request from the authors. The data are not publicly available due to original informed consent provisions.

Acknowledgments: The authors would like to express appreciation to the anonymous reviewers and editors for their very helpful comments that improved the paper.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A. Questionnaire: How the Target Positioning of the S&T Innovation Platform Impacts the S&T Innovation Platform's Network Innovation Capability in China

Dear Sir/Madam:

Hello! This questionnaire is part of an ongoing academic research project. All information materials are only for academic research, the research information will be strictly confidential, and the questionnaire results will present comprehensive data and will not be provided to external units in any form. If you are interested in this project and the results of this survey, please leave your contact information and we will provide you with a final survey report. Finally, thank you from the bottom of our hearts for your support and participation.

Part I: Basic Information (Please fill in the information in the question item or type "√" in the "□" after the question item).

1. The number of years of establishment of the enterprise is: ____year.

- ① ☐ Within 1 year ② ☐ 1–5 ③ ☐ 5–10 ④ ☐ More than 10 years
2. The region where the enterprise is located:
 ① ☐ Eastern Region ② ☐ Central Region ③ ☐ Northwest Region
 ④ ☐ Northeast Region
3. Annual income of the enterprise (10,000 yuan):
 ① ☐ 1 million and below ② ☐ 100~1000 ③ ☐ 1000~5000 ④ ☐ 5000~10000
 ⑤ ☐ More than 100 million
4. Enterprise size (employee)
 ① ☐ 1–99 ② ☐ 100–499 ③ ☐ 500–999 ④ ☐ 1000+
5. Nature of property rights
 ① ☐ State-owned ② ☐ Private enterprise ③ ☐ Foreign enterprise ④ ☐ Joint venture
 ⑤ ☐ others

Part II: Science and Technology Network Platform

The following expression, 1–5 levels in turn indicate from complete non-conformity to complete compliance, please select a number on the right side of each question to hit “√” according to the degree of its actual situation.

Multisubject's Perspective of the S&T Innovation Platform Target Positioning	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The financial strength of the S&T innovation platform should be very strong	1	2	3	4	5
The S&T innovation platform team should be strong and strong and share knowledge	1	2	3	4	5
The objectives of the S&T innovation platform clearly express the commitment of S&T sharing services	1	2	3	4	5
The positioning of the S&T innovation platform clearly reflects the development goals and profit goals	1	2	3	4	5
The S&T innovation platform focuses on core technologies and common technologies	1	2	3	4	5
The positioning of the S&T innovation platform clearly reflects the geographical characteristics of the business orientation	1	2	3	4	5
The positioning of the S&T innovation platform clearly reflects the concept of sustainable development	1	2	3	4	5
The S&T innovation platform is engaged in leading research and development of high-tech knowledge and scientific and technological content	1	2	3	4	5
Commercial Logic	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The S&T innovation platform takes timely response actions to dynamic environmental changes	1	2	3	4	5
The S&T innovation platform has insight into market competition information to pursue business value	1	2	3	4	5
The platform regularly discusses strategic benchmarking for a dynamic environment to ensure competitive advantage	1	2	3	4	5
The S&T innovation platform should be good at competing and collaborating with platform users to gain competitive advantages	1	2	3	4	5

Social Logic	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The S&T innovation platform attaches great importance to the social responsibility of public technology research and development	1	2	3	4	5
The S&T innovation platform takes it as its mission to serve the public innovation	1	2	3	4	5
The S&T innovation platform is based on social benefits and takes into account economic benefits	1	2	3	4	5
The S&T innovation platform provides public welfare services for small and micro enterprise innovation	1	2	3	4	5
Digital Empowerment	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The S&T innovation platform should build a new digital base to provide digital empowerment technology	1	2	3	4	5
The S&T innovation platform improves the service efficiency of the platform through digital processes or digital services	1	2	3	4	5
The S&T innovation platform realizes shared services and collaboration among platform partners through digital governance	1	2	3	4	5
The S&T innovation platform promotes cloud computing power through intelligent interconnection to support independent innovation of user enterprises	1	2	3	4	5
Business Model Innovation	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The S&T innovation platform is good at insight into market competition opportunities through smart cloud	1	2	3	4	5
The S&T innovation platform is good at discovering and adjusting business model positioning through big data analysis	1	2	3	4	5
The S&T innovation platform is good at reconstructing and innovating business models through the allocation of resource capabilities	1	2	3	4	5
The S&T innovation platform is good at reconstructing the profit model and value flow through business analysis	1	2	3	4	5
Network Relationship Embedding	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Both the platform and its partners can keep their promises and trust	1	2	3	4	5
The S&T innovation platform can exchange views with its partners in a candid manner	1	2	3	4	5
The S&T innovation platform and partners provide each other with real information	1	2	3	4	5
The S&T innovation platform can maintain a long-term and close co-operative relationship with partners	1	2	3	4	5
The S&T innovation platform and partners can work together to solve problems	1	2	3	4	5
The S&T platforms and partners can alert each other to potential problems and changes	1	2	3	4	5

Innovation Network	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
In contrast, the S&T innovation platform maintains close contact with organizations such as the government, industry, academia and research institute	1	2	3	4	5
The S&T innovation platform is in the center of the S&T network and has a stronger influence	1	2	3	4	5
The S&T innovation platform builds an information exchange mechanism for partners to innovate resources	1	2	3	4	5
Partners within the S&T innovation platform rely on the platform network to establish contacts	1	2	3	4	5
The S&T innovation platform can bring together most of the key partners in the competition alliance	1	2	3	4	5
The S&T innovation platform connects partners to establish third-party co-operation relationships	1	2	3	4	5
Market Lead	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The S&T innovation platform selects partners according to its own business logic and strategic needs	1	2	3	4	5
The S&T innovation platform adjusts the direction of innovation or technology iteration based on market demand	1	2	3	4	5
The S&T innovation platform mainly relies on the achievement transformation trading market to share technology patents	1	2	3	4	5
The S&T innovation platform mainly allocates innovation resources globally through the law of the market	1	2	3	4	5
Government Guidance	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The government supports the S&T innovation platform with taxation and fiscal policies	1	2	3	4	5
The government has actively supported the S&T innovation platform to raise innovation funds	1	2	3	4	5
The government provides fintech services for S&T innovation platforms	1	2	3	4	5
The government provides tax advisory services for S&T innovation platforms	1	2	3	4	5
The S&T Innovation Platform Network Innovation Capability	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The partners of the S&T innovation platform highly praised the supporting and sharing services of large scientific devices	1	2	3	4	5
The partners of the S&T innovation platform have reached a consensus on co-operation in knowledge and technology sharing	1	2	3	4	5
Partners highly recognize the technology prototype development capabilities of the S&T innovation platform	1	2	3	4	5
Partners highly agree with the ability of the S&T innovation platform to transform the achievements	1	2	3	4	5

References

1. Xie, J. Boosting China's "Great Internal Circulation" Pattern with High-Quality Green Development. *Renming Luntan* **2021**, *5*, 72–77. [\[CrossRef\]](#)
2. Kong, L.C.; Xu, J.H.; Liu, L.H.; Liang, L. The Mechanism and Empirical Analysis of Technological Innovation Network Promoting Regional Innovation: From the Provincial Panel Data. *Shanghai Econ. Rev.* **2019**, *4*, 43–54. [\[CrossRef\]](#)
3. Kong, H.W.; Liang, L.; Shi, M.H.; Xie, J.P. Research on the Performance Mechanism of S&T Innovation Platform: From the Perspective of Network Embedding. *J. Shanghai Univ. Int. Bus. Econ.* **2022**, *29*, 96–108. [\[CrossRef\]](#)

4. Chesbrough, H. The Future of Open Innovation: The Future of Open Innovation Is More Extensive, More Collaborative, and More Engaged with A Wider Variety of Participants. *Res.-Technol. Manag.* **2017**, *60*, 35–38. [\[CrossRef\]](#)
5. Osorno, R.; Medrano, N. Open innovation platforms: A conceptual design framework. *IEEE Trans. Eng. Manag.* **2020**, *69*, 438–450. [\[CrossRef\]](#)
6. Ober, J. Open innovation in the ICT industry: Substantiation from Poland. *J. Open Innov. Technol. Mark. Complex.* **2022**, *8*, 158. [\[CrossRef\]](#)
7. Troise, C.; Matricano, D.; Sorrentino, M. Open Innovation Platforms: Exploring the importance of knowledge in supporting online initiatives. *Knowl. Manag. Res. Pract.* **2021**, *19*, 208–216. [\[CrossRef\]](#)
8. Dettmann, A.; von Proff, S.; Brenner, T. Co-operation over distance? The spatial dimension of inter-organizational innovation collaboration. *J. Evol. Econ.* **2015**, *25*, 729–753. [\[CrossRef\]](#)
9. Xie, J.P.; Kong, H.W.; Liang, L.; Wang, H.Y. Governance Factor Mechanism of Independent Innovation S&T Platforms: A Qualitative Study of the Grounded Theory. *J. Shanghai Univ. Financ. Econ.* **2019**, *21*, 64–80. [\[CrossRef\]](#)
10. Kong, L.C.; Xu, J.H.; Shi, M.H.; Xie, J.P. Cooperation of Science and Technology in Yangtze River Delta to Cultivate World-class Industrial Clusters: A Case Study of Graphene Industry. *Fujian Trib. (Humanit. Soc. Sci.)* **2018**, *12*, 28–34.
11. Xiao, H.J.; Li, P. Ecological governance of platform-based corporate social responsibility. *Manag. World* **2019**, *35*, 120–144. [\[CrossRef\]](#)
12. Xie, J.P.; Xia, Y.; Liang, L.; Liu, D. Service Level Decision of Scientific Instrument Sharing Platform. *Oper. Res. Manag. Sci.* **2021**, *30*, 65–70. [\[CrossRef\]](#)
13. Xie, J.P.; Kong, H.W.; Zhang, W.S. S&T Innovation Platform: Network Characteristics, Operation Governance and Development Strategy—A Case Study from S&T Innovation Practice of Zhongguancun and Zhangjiang Park. *Econ. Manag. J.* **2017**, *39*, 36–49. [\[CrossRef\]](#)
14. Aisaiti, G.; Zhang, J.X.A.T. National Innovation Demonstration Zone policy and city innovation capability—a quasi-natural experimental analysis. *Ind. Manag. Data Syst.* **2022**, *122*, 1246–1267. [\[CrossRef\]](#)
15. Thornton, P.H. *Markets from Culture: Institutional Logics and Organizational Decisions in Higher Education Publishing*; Stanford University Press: Redwood City, CA, USA, 2004. [\[CrossRef\]](#)
16. Freeman, L.C. *Research Methods in Social Network Analysis*; Routledge: New York, NY, USA, 2017.
17. Chi, M.; Wang, W.; Lu, X.; George, J.F. Antecedents and outcomes of collaborative innovation capabilities on the platform collaboration environment. *Int. J. Inf. Manag.* **2018**, *43*, 273–283. [\[CrossRef\]](#)
18. Dai, D.; Fan, Y.; Wang, G.; Xie, J. Digital Economy, R&D Investment, and Regional Green Innovation—Analysis Based on Provincial Panel Data in China. *Sustainability* **2022**, *14*, 6508. [\[CrossRef\]](#)
19. Xie, J.; Jia, H.; Dong, Q.; Aisaiti, G. Research on the Governance Mechanism of Independent Innovation Network in the Core Area of Silk Road Economic Belt. *Sustainability* **2022**, *14*, 7589. [\[CrossRef\]](#)
20. McCaffrey, J.; Donnelly, R.F.; McCarthy, H.O. Microneedles: An innovative platform for gene delivery. *Drug Deliv. Transl. Res.* **2015**, *5*, 424–437. [\[CrossRef\]](#)
21. Gawer, A. Digital platforms’ boundaries: The interplay of firm scope, platform sides, and digital interfaces. *Long Range Plan.* **2021**, *54*, 102045. [\[CrossRef\]](#)
22. Liang, L.; Han, Z.; Xie, J.; Wang, J.; Shi, N.; Zhu, W. S&T Innovation Platform Sharing Service Contract Mechanism to Achieve Supply Chain Resilience. *Sustainability* **2022**, *14*, 14124. [\[CrossRef\]](#)
23. Xie, J.P.; Liang, L.; Gong, H.T. Business Model Innovation Based on Customer Value Under the IoT Circumstances. *Econ. Manag. J.* **2015**, *37*, 188–199. [\[CrossRef\]](#)
24. Harland, C.M.; Lamming, R.C.; Zheng, J.; Johnsen, T.E. A taxonomy of supply networks. *J. Supply Chain. Manag.* **2001**, *37*, 21–27. [\[CrossRef\]](#)
25. Baum, J.A.C.; Cowan, R.; Jonard, N. Network-independent partner selection and the evolution of innovation networks. *Manag. Sci.* **2010**, *56*, 2094–2110. [\[CrossRef\]](#)
26. Li, Y.; Zhang, G.; Liu, L. Platform Corporate Social Responsibility and Employee Innovation Performance: A Cross-Layer Study Mediated by Employee Intrapreneurship. *SAGE Open* **2021**, *11*, 21582440211021406. [\[CrossRef\]](#)
27. Hong, J.; Zheng, R.; Deng, H.; Zhou, Y. Green supply chain collaborative innovation, absorptive capacity and innovation performance: Evidence from China. *J. Clean. Prod.* **2019**, *241*, 118377. [\[CrossRef\]](#)
28. Leminen, S.; Nyström, A.G.; Westerlund, M. Change processes in open innovation networks—Exploring living labs. *Ind. Mark. Manag.* **2020**, *91*, 701–718. [\[CrossRef\]](#)
29. Thornton, P.H.; Ocasio, W. Institutional logics. *Sage Handb. Organ. Inst.* **2008**, *840*, 99–128.
30. Aisaiti, G.; Liang, L.; Liu, L.; Xie, J.; Zhang, T. How social enterprises gain cognitive legitimacy in the post-pandemic period? Social welfare logic and digital transformation. *Ind. Manag. Data Syst.* **2021**, *121*, 2697–2721. [\[CrossRef\]](#)
31. Mair, J.; Mayer, J.; Lutz, E. Navigating institutional plurality: Organizational governance in hybrid organizations. *Organ. Stud.* **2015**, *36*, 713–739. [\[CrossRef\]](#)
32. Yang, W.; Fan, F.; Wang, X.; Yu, H. Knowledge innovation network externalities in the Guangdong–Hong Kong–Macao Greater Bay Area: Borrowing size or agglomeration shadow? *Technol. Anal. Strateg. Manag.* **2022**, *34*, 1020–1037. [\[CrossRef\]](#)
33. Huang, Y.; Audretsch, D.B.; Hewitt, M. Chinese technology transfer policy: The case of the national independent innovation demonstration zone of East Lake. *J. Technol. Transf.* **2013**, *38*, 828–835. [\[CrossRef\]](#)

34. Jay, J. Navigating paradox as a mechanism of change and innovation in hybrid organizations. *Acad. Manag. J.* **2012**, *56*, 137–159. [\[CrossRef\]](#)
35. Gourev, S.V.; Zuckerman, E.W. Breaking up is hard to do: Irrational inconsistency in commitment to an industry peer network. *Ration. Soc.* **2011**, *23*, 3–34. [\[CrossRef\]](#)
36. Shepherd, D.A.; Wennberg, K.; Suddaby, R.; Wiklund, J. What are we explaining? A review and agenda on initiating, engaging, performing, and contextualizing entrepreneurship. *J. Manag.* **2019**, *45*, 159–196. [\[CrossRef\]](#)
37. Besharov, M.L.; Smith, W.K. Multiple institutional logics in organizations: Explaining their varied nature and implications. *Acad. Manag. Rev.* **2014**, *39*, 364–381. [\[CrossRef\]](#)
38. Cantù, C.L.; Schepis, D.; Minunno, R.; Morrison, G. The role of relational governance in innovation platform growth: The context of living labs. *J. Bus. Ind. Mark.* **2021**, *36*, 236–249. [\[CrossRef\]](#)
39. Nylén, D.; Holmström, J. Digital innovation strategy: A framework for diagnosing and improving digital product and service innovation. *Bus. Horiz.* **2015**, *58*, 57–67. [\[CrossRef\]](#)
40. Glynn, M.A.; Lounsbury, M. From the critics' corner: Logic blending, discursive change and authenticity in a cultural production system. *J. Manag. Stud.* **2005**, *4*, 1031–1055. [\[CrossRef\]](#)
41. Hahn, R.; Spieth, P.; Ince, I. Business model design in sustainable entrepreneurship: Illuminating the commercial logic of hybrid businesses. *J. Clean. Prod.* **2018**, *176*, 439–451. [\[CrossRef\]](#)
42. Onishi, T. Venture philanthropy and practice variations: The interplay of institutional logics and organizational identities. *Nonprofit Volunt. Sect. Q.* **2019**, *48*, 241–265. [\[CrossRef\]](#)
43. Shin, Y.J.; Choi, Y. Feasibility of the FinTech industry as an innovation platform for sustainable economic growth in Korea. *Sustainability* **2019**, *11*, 5351. [\[CrossRef\]](#)
44. Luke, B.; Barraket, J.; Eversole, R. Measurement as legitimacy versus legitimacy of measures: Performance evaluation of social enterprise. *Qual. Res. Account. Manag.* **2013**, *10*, 234–258. [\[CrossRef\]](#)
45. Bhattarai, C.R.; Kwong, C.C.; Tasavori, M. Market orientation, market disruptiveness capability and social enterprise performance: An empirical study from the United Kingdom. *J. Bus. Res.* **2019**, *96*, 47–60. [\[CrossRef\]](#)
46. Taghizadeh, S.K.; Rahman, S.A.; Suan, C.L.; Vafaei-Zadeh, A. Value co-creation and innovation performance: Insight knowledge from companies and customers in the Malaysian hotel industry. *Int. J. Manag. Pract.* **2022**, *15*, 279–300. [\[CrossRef\]](#)
47. Chen, K.; Zhang, Y.; Zhu, G.; Mu, R. Do research institutes benefit from their network positions in research collaboration networks with industries or/and universities. *Technovation* **2020**, *94–95*, 102002. [\[CrossRef\]](#)
48. Lin, Y.F. The theoretical basis and development direction of new structural economics. *Econ. Rev.* **2017**, *3*, 4–16.
49. Silva, M.; Moutinho, L.; Coelho, A.; Marques, A. Market orientation and performance: Modelling a neural network. *Eur. J. Mark.* **2009**, *43*, 421–437. [\[CrossRef\]](#)
50. Holmström, J. Recombination in digital innovation: Challenges, opportunities, and the importance of a theoretical framework. *Inf. Organ.* **2018**, *28*, 107–110. [\[CrossRef\]](#)
51. Bianchi, I.S.; Sousa, R.D. IT Governance mechanisms in higher education. *Procedia Comput. Sci.* **2016**, *100*, 941–946. [\[CrossRef\]](#)
52. Han, J.; Zhou, H.; Wik, L.O.; Or, S.; de Weerd-Nederhof, P. Building and sustaining emerging ecosystems through new focal ventures: Evidence from China's bike-sharing industry. *Technol. Forecast. Soc. Chang.* **2022**, *174*, 121261. [\[CrossRef\]](#)
53. Narver, J.C.; Slater, S.F. The effect of a market orientation on business profitability. *J. Mark.* **1990**, *54*, 20–35. [\[CrossRef\]](#)
54. Atuahene-Gima, K.; Ko, A. An empirical investigation of the effect of market orientation and entrepreneurship orientation alignment on product innovation. *Organ. Sci.* **2001**, *12*, 54–74. [\[CrossRef\]](#)
55. Lin, Y.H.; Lin, F.J.; Wang, K.H. The effect of social mission on service quality and brand image. *J. Bus. Res.* **2021**, *132*, 744–752. [\[CrossRef\]](#)
56. Cai, Q.F.; Tian, L. Industrial Policy and Cross-industrial M&As: Market Orientation or Policy Arbitrage. *China Ind. Econ.* **2019**, *1*, 81–99.
57. Ma, Y.J.; Kim, M.J.; Heo, J.S.; Jang, L.J. The effects entrepreneurship and market orientation on social performance of social enterprise. In Proceedings of the 2012 International Conference on Economics Marketing and Management (ICEMM 2012), Hongkong, China, 5–7 January 2012.
58. Kazemian, S.; Djajadikerta, H.G.; Roni, S.M.; Trireksani, T.; Mohd-Sanusi, Z. Accountability via social and financial performance of the hospitality sector: The role of market orientation. *Soc. Bus. Rev.* **2020**, *16*, 238–254. [\[CrossRef\]](#)
59. Romanova, O.A.; Kuzmin, E. *Industrial Policy: A New Reality in the Context of Digital Transformation of the Economy[M]//Digital Transformation in Industry*; Springer: Cham, Switzerland, 2021; pp. 13–23. [\[CrossRef\]](#)
60. Guan, J.; Yam, R.C. Effects of government financial incentives on firms' innovation performance in China: Evidences from Beijing in the 1990s. *Res. Policy* **2015**, *44*, 273–282. [\[CrossRef\]](#)
61. Komninos, N.; Kakderi, C.; Collado, A.; Papadaki, I.; Panori, A. *Digital Transformation of City eEcosystems: Platforms Shaping Engagement and Externalities across Vertical Markets. Sustainable Smart City Transitions*; Routledge: New York, NY, USA, 2022; pp. 91–112. [\[CrossRef\]](#)
62. Moss, T.W.; Short, J.C.; Payne, G.T.; Lumpkin, G.T. Dual identities in social ventures: An exploratory study. *Entrep. Theory Pract.* **2011**, *35*, 805–830. [\[CrossRef\]](#)
63. Pearce, J.A.; David, F. Corporate mission statements: The bottom line. *Acad. Manag. Perspect.* **1987**, *1*, 109–115. [\[CrossRef\]](#)

64. Tsui, A.S.; Wang, H.; Xin, K.R. Organizational culture in China: An analysis of culture dimensions and culture types. *Manag. Organ. Rev.* **2006**, *2*, 345–376. [[CrossRef](#)]
65. Guo, H.; Yang, Z.; Huang, R.; Guo, A. The digitalization and public crisis responses of small and medium enterprises: Implications from a COVID-19 survey. *Front. Bus. Res. China* **2020**, *14*, 1–25. [[CrossRef](#)]
66. Nambisan, S.; Wright, M.; Feldman, M. The digital transformation of innovation and entrepreneurship: Progress, challenges and key themes. *Res. Policy* **2019**, *48*, 103773. [[CrossRef](#)]
67. Fisher, G.; Kuratko, D.F.; Bloodgood, J.M.; Hornsby, J.S. Legitimate to whom? The challenge of audience diversity and new venture legitimacy. *J. Bus. Ventur.* **2017**, *32*, 52–71. [[CrossRef](#)]
68. Chen, C.H.; Mei, L.; Yin, J. Identification and Development of Organizational Value Proposition in Digitalization—Lessons from the Work WeChat Case Study. *Manag. Rev.* **2021**, *33*, 330–339. [[CrossRef](#)]

Disclaimer/Publisher’s Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.