

Research on the Influence Mechanism of Social Capital on Knowledge Transfer in Entrepreneurial Ecosystem

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Abstract

Because of its “new” and “small” nascent disadvantages, start-ups are faced with resource constraints, and the high uncertainty brought by fierce market competition and complex environment affects the competitiveness and creative behavior of enterprises. The entrepreneurial ecosystem is an important force to improve the level of entrepreneurial activities and promote the rapid development of the economy. It can promote the establishment of multi-actors network relationships, generate rich entrepreneurial opportunities and resources through knowledge transfer, and thus provide a supportive entrepreneurial environment for start-ups. Business exchanges and resource exchanges between enterprises based on social capital provide conditions for knowledge transfer. Digital technology not only provides a faster and more convenient way for this condition, but also improves the level of information sharing and knowledge integration of enterprises. Most of the existing studies focus on the direct causal relationship between social capital and knowledge transfer, and less on the impact of corporate social capital on knowledge transfer in the entrepreneurial ecological context. Based on the theory of social capital, this study takes the start-ups in the entrepreneurial ecosystem as the research object, and explores the direct relationship between the three dimensions of social capital and the transfer of explicit and tacit knowledge between enterprises, as well as the regulatory role of digital technology in this relationship. It is expected to provide a new and comprehensive perspective for the research on the growth of start-ups in the entrepreneurial ecosystem.

Keywords

Social Capital; Digital Technology; Knowledge Transfer; Entrepreneurship Ecosystem.

1. Questions Raised

Entrepreneurship is an engine to promote national economic growth and an important way to improve regional economy [1]. From the proposal of the policy of “mass entrepreneurship and innovation” to the re-emphasis of innovation and entrepreneurship in the report of the Twentieth National Congress, more and more start-ups have emerged in succession, playing an important role in promoting economic growth, comprehensively deepening reform, stimulating market vitality, etc., and gradually becoming the main force in the transformation of new and old driving forces of China's economy [2]. However, due to the dual dilemma of “new” and “small” defects, start-ups are faced with the problem of high resource constraints due to their initial disadvantages, and the high uncertainty brought by fierce market competition and complex environment directly affects the competitiveness and creative behavior of enterprises, thus making the risk of failure of start-ups higher. The entrepreneurial ecosystem is a dynamic and complex system with biological significance, and there is an objective need for multi-actors coordination and interaction. The addition and combination of individual elements in a

complex system cannot obtain the whole. The relationship between the actors does not exist alone, but forms a highly coupled, interconnected and balanced multi-level network structure. Each strategic choice of actors in the system determines the construction of relationships and networks within the ecosystem. Especially for start-ups, their own resources are difficult to maintain the development of enterprises, and they will face great resource constraints when investing. However, they can help enterprises find scarce resources at a lower cost through the resource allocation effect of network interaction in the ecosystem[3], narrow the knowledge gap with external actors, and help to find more valuable business opportunities to achieve breakthrough growth of enterprises. The construction of China's entrepreneurial ecosystem is changing with each passing day, and the urgent development needs of small and medium-sized enterprises are urgent. How to balance the intensity of "development" and "growth" from the perspective of ecosystem and realize the synergy and evolution of entrepreneurial enterprises and entrepreneurial ecosystem is an opportunity and challenge for the government and investors.

Entrepreneurial ecosystem refers to a benign ecosystem formed by organizations or groups with certain interests that is conducive to subject innovation and knowledge transfer[4]. In the context of the era of knowledge economy, the market environment is highly competitive. To gain and maintain competitive advantages, enterprises not only rely on the heterogeneous resources they own[5], but also rely on social capital embedded in various social networks. Therefore, knowledge is the most important resource for the development of enterprises in the future, which has received widespread attention in the management academia. From the perspective of knowledge characteristics, knowledge can be divided into tacit knowledge and explicit knowledge [6]. Tacit knowledge has unique characteristics of individuals, and it is difficult to be formulated and communicated. Explicit knowledge can be replicated, and it can be transmitted through a formal and systematic language. At the same time, explicit knowledge is complex and diverse. It is worth noting that tacit knowledge is not impossible to transfer, but different from explicit knowledge. It is deeply embedded in individual behavior and commitment, and requires a specific environment. Therefore, its transfer must be through close contact and mutual learning between individuals[7].

Knowledge generation and knowledge transfer are important ways to improve production efficiency and economic growth. In order to gain greater social and economic impact, knowledge can be used or transferred[8]. There are many ways to transfer knowledge, such as markets, publications, social networks, education and labor transfer[9]. Research shows that social capital has a strong correlation with enterprise knowledge transfer and actively promotes knowledge transfer. The important benefit of social capital is to acquire knowledge. Previous studies believed that "social capital is a kind of interpersonal relationship, and also the sum of various resources embedded in these relationships". Social capital directly affects the interaction and integration of knowledge in the process of knowledge transfer. At the same time, social capital also makes access to network resources relatively easy. In addition, with the application of cutting-edge digital technology, the flow of knowledge and technology has been provided with a faster transmission path. With the help of digital infrastructure, knowledge and technology can flow between regions or enterprises, enabling enterprises to transfer knowledge in a short time, realize technology upgrading and improvement, effectively reduce the cost of enterprises in technological innovation, and eliminate technology and knowledge barriers between enterprises, accelerate the frequency of knowledge and technology spillovers. Digital technology facilitates business exchanges and resource exchange between enterprises based on social capital, improves the level of information sharing and knowledge integration of enterprises, and provides a faster and more convenient way for knowledge transfer[10].

At present, the direct research on the relationship between corporate social capital and knowledge transfer has a certain foundation, but the research on the relationship between the

two at all levels still lacks systematic understanding. When studying the problem of knowledge transfer between enterprises[11], teams or employees[12], many scholars will analyze the impact of social capital of relevant subjects on the effect of knowledge transfer from the perspective of social capital. From the current research on the antecedent variables of knowledge transfer (such as network density, network centrality, trust level, relationship strength, shared vision and values, etc.), we can find that this research from the perspective of social capital answers the relationship between each subject and other members in the social network, the position of the subject in the network. The relationship between members and the cognition of the whole network affect the knowledge transfer. However, the existing research lacks to focus on the entrepreneurial ecosystem context, study the uniqueness of the three dimensions of social capital in this context, and study the mechanism of knowledge transfer from the perspective of knowledge characteristics.

Based on the above analysis, this project is based on the topic of how new ventures can get rid of resource constraints and seek their own development in a highly uncertain environment. It studies the following questions: What is the situational nature of the three dimensions of social capital in the entrepreneurial ecological context? How to influence knowledge transfer based on knowledge characteristics? What role does digital technology play in it?

2. Literature Review

With the continuous acceleration of knowledge update iteration, enterprise innovation in the entrepreneurial ecosystem is facing a more complex environment. It is difficult to meet the needs of enterprises to maintain competitive advantage by relying on internal knowledge accumulation alone. We must go beyond the organizational boundaries and actively absorb the cutting-edge knowledge of other innovation entities in the system. Knowledge transfer has become an important way for enterprises to obtain the advantageous knowledge resources of other members in the system [13]

2.1. Knowledge Transfer

Knowledge transfer refers to the process that knowledge is transmitted and absorbed by users. There are two or more subjects in this process, which can be individuals, teams or enterprises[15]. Knowledge transfer at the enterprise level is more widely seen in the literature than at the individual level and the team level, and the research on knowledge transfer in multinational companies and strategic alliances is the most. Dhanaraj et al. (2004) investigated the knowledge transfer between parent and subsidiary companies, emphasizing the importance of relationship strength, trust and shared values and systems in tacit knowledge transfer. In addition, cultural relevance and knowledge embeddedness will also affect knowledge transfer[17]. The alliance has created valuable and available learning opportunities[18]. Companies can gain competitive advantages by acquiring the knowledge of their alliance partners[19]. In this process, communication is an important factor, and cultivating trust is the key[20]. The external network structure of the organization and the relationship structure between business organizations will affect the acquisition of knowledge. Knowledge transfer is an important way for enterprises to obtain the advantageous knowledge resources of other members in the system[13]. However, most of the existing studies focus on the relationship between multinational enterprises and alliances, and lack of knowledge transfer research in the ecosystem context.

2.2. Social Capital

Social capital is a key variable affecting knowledge transfer[21]. Corporate social capital in the ecosystem reflects the relationship of enterprises and is closely related to knowledge sharing in the ecosystem network[22]. The structural dimension reflects the network behavior that

constitutes the development relationship of participants. The social network between enterprises provides a necessary flow path for knowledge transfer. Enterprises can improve the organization's information processing ability by strengthening the connection between network members, thus promoting the transfer of knowledge. The relationship dimension describes the type of relationship between participants that generate knowledge by using relationship assets in the process of business activities. The closer the connection between network members, the more effective the transfer of tacit knowledge will be. The cognitive dimension of social capital refers to the common expectation, explanation and meaning system between enterprises, including the common vision and values[23]. The similarity of values and visions between enterprises promotes the transfer of knowledge.

The research on the relationship between corporate social capital and knowledge transfer is mainly to analyze the role of social capital in knowledge transfer. Adler and Kwon (2002) also put forward the view that we should build a capability framework based on knowledge transfer, and study the famous three-dimensional dimension of social capital proposed by Nahapiet and Ghoshal (1998) and the OMA framework. Later, scholars also noticed that enterprises could not obtain all development resources through independent existence, and activities such as knowledge transfer and knowledge absorption must be linked by enterprises and stakeholders. And some of these contact activities also need to take place in the market where enterprises exist, so corporate social capital is particularly critical for the development of enterprises. The accumulation of corporate social capital is conducive to the transfer of corporate knowledge, so as to assist enterprises to acquire and use knowledge resources and significantly improve key competitive advantages. Lechner et al. (1999) studied the individual and collective interests of social capital and its possible impact on alliance partners. Inkpen and Tsang (2005) established a model of social capital promoting knowledge transfer. Wu (2008) and other researchers analyzed the relationship elements of social capital from the perspective of corporate social relations. They built a relationship model that can directly transfer social capital and intellectual capital, and tested it after its establishment. Wei et al. (2015) proved that social capital between enterprises has an important impact on knowledge transfer. Research shows that corporate social capital will have a positive impact on knowledge transfer, but the impact mechanism of different dimensions of social capital on knowledge transfer is not consistent, and the existing research results have not explained this phenomenon. In addition, there is a lack of research on the impact mechanism of corporate social capital on knowledge transfer based on different knowledge characteristics.

2.3. Digital Technology

Under the new tide of scientific and technological revolution and industrial transformation, valuable, scarce, irreplaceable and irreplaceable digital technologies and data resources have become strategic elements for organizations to build sustainable competitive advantages. The application of digital technology can give organizations stronger capabilities in resource integration, information acquisition and data analysis, and promote the optimization of enterprise innovation processes and models. New entrants in the entrepreneurial ecosystem also face a more complex environment. It is difficult to meet the needs of enterprises to maintain competitive advantage only by internal knowledge accumulation. They must go beyond the organizational boundaries and actively absorb the cutting-edge knowledge of other innovation entities in the system. Enterprise digitalization can produce information sharing effect and knowledge integration effect, promote the exchange and integration of internal and external information of enterprises, strengthen the integration and sharing of internal and external information, and improve the innovation ability of enterprises[10][24]. Previous studies have shown that in the context of digitalization, the formation path of social capital and the mechanism of action on opportunity belief will change accordingly[25]. Chen et al. Based

on existing research, the interaction mechanism between digital technology and social capital in all dimensions has not been clarified.

As the core subject of the entrepreneurial ecosystem, enterprises provide important endogenous impetus for the sustainable development of the entrepreneurial ecosystem. However, with the continuous acceleration of knowledge update iteration, enterprise innovation in the entrepreneurial ecosystem is facing a more complex environment. It is difficult to meet the needs of enterprises to maintain competitive advantage only by internal knowledge accumulation. It is necessary to go beyond the organizational boundaries and actively absorb the leading knowledge of other innovation entities in the system. Knowledge transfer has become an important way for enterprises to obtain the advantageous knowledge resources of other members in the system. However, the entrepreneurial ecosystem has been quite different from the traditional industrial clusters with the convergence of technology fields and strong stability of members in the past, with typical characteristics of diversity, heterogeneity and openness of subjects. Accordingly, the knowledge transfer activities among enterprises in the entrepreneurial ecosystem are more complex. Previous studies have shown that the corporate social capital composed of the position of enterprises in the ecosystem network, the relationship with other enterprises, and the cognition of the entire ecosystem and ecosystem network will have an impact on the effect of knowledge transfer[15], but the existing studies focus more on the direct causal relationship between social capital and knowledge transfer, and less on the ecosystem context, The uniqueness of corporate social capital and the impact of corporate social capital on knowledge transfer in this context should be considered from the perspective of knowledge characteristics.

3. Research Framework

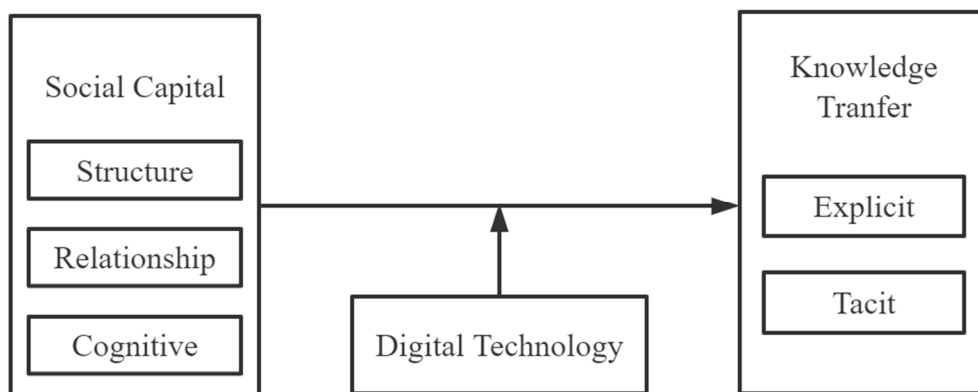


Figure 1. Research Framework Diagram

This study is based on the topic of how start-ups can get rid of resource constraints and seek their own development in a highly uncertain environment. It studies the following questions: How situational are the three dimensions of social capital in the entrepreneurial ecological context? How to influence knowledge transfer based on knowledge characteristics? What role does digital technology play in it? Based on this, this project takes the start-ups in the entrepreneurship ecosystem such as maker space, industrial park and incubator as the research object, and based on the theory of social capital, discusses the direct relationship between the three dimensions of social capital and the transfer of explicit and tacit knowledge between enterprises, as well as the regulatory role of digital technology in this relationship. The project has made breakthroughs in the following aspects: first, refining the social capital characteristics of start-ups under the entrepreneurial ecosystem is conducive to expanding the

context boundary of social capital theory, and enriching and improving the relevant research of entrepreneurial ecosystem; Secondly, the paper discusses the regulatory effect of digital technology, which not only provides a new perspective for research related to digital technology, but also helps to broaden the vision of research related to knowledge transfer of start-ups, thus promoting the growth of start-ups and enabling the development of entrepreneurship and innovation.

Research module 1: The impact of corporate social capital on knowledge transfer in the entrepreneurial ecosystem

According to relevant research on knowledge management, knowledge can be divided into explicit knowledge and tacit knowledge[6]. Tacit knowledge has unique characteristics of individuals, and it is difficult to be formulated and communicated. However, tacit knowledge is not impossible to transfer, but different from explicit knowledge. It is deeply embedded in individual behavior and commitment, and requires a specific environment. Therefore, its transfer must be through close contact and mutual learning between individuals. Explicit knowledge can be replicated, and it can be transmitted through a formal and systematic language. At the same time, explicit knowledge is complex and diverse. Nahapiet and Ghoshal (1998) defined social capital as actual and potential resources embedded in, available and derived from the relationship network owned by individuals or social units, and divided it into three dimensions: structure, relationship and cognition. The structural dimension reflects the network behavior that constitutes the development relationship of participants. This study defines it as network strength, that is, the extent to which startups seek and use others to assist their business activities. Network strength reflects the connection between actors. The connection can improve the information processing ability of the organization, and the information processing ability can help the knowledge flow in the network. Dense networks can generate more total knowledge than sparse networks. Higher structural dimensions give members the opportunity to know who has what knowledge; Higher structural dimensions help organizations identify the value of resources owned by other members. High interaction intensity and network density help to improve the opportunity of knowledge transfer between enterprises. The demand for knowledge transfer is often transient and instantaneous. High interaction intensity increases the probability of knowledge transfer. In addition, the high-density compact network increases the understanding between us and gives us the opportunity to access each other's proprietary knowledge, thus improving the overall knowledge transfer. Thus proposition 1 is proposed.

Proposition 1a: The higher the level of social capital structure dimension, the greater the intensity of interaction between the two sides of knowledge transfer, and the easier it is to transfer diversified explicit knowledge.

Proposition 1b: The higher the dimension level of social capital structure, the greater the link strength between the two sides of knowledge transfer, and the easier it is to transfer complex tacit knowledge.

The relationship dimension describes the type of relationship between participants that generate knowledge by using relationship assets in the process of business activities. This study defines it as resource dependence, which represents a behavior choice of enterprises and shapes a stronger trust and relationship strength. High-intensity relationships will promote organizations and departments to make efforts to ensure that knowledge seekers or recipients fully understand and use the newly acquired knowledge. The distance and structural equivalence between knowledge searchers and knowledge sources will affect the efficiency of knowledge transfer, while the strength of the relationship between knowledge transfer parties can reduce the negative impact of distance on knowledge transfer. Communication channels, knowledge base and resource dependence also have an impact on knowledge transfer In

addition, the performance of knowledge transfer will be improved by the interaction between the bridge figures who occupy an important position in communication with the outside world and the formal organization network, interpersonal network and search network[26]. Proposition 2 is proposed.

Proposition 2a: The higher the level of social capital relationship dimension, the easier it is to transfer explicit knowledge.

Proposition 2b: The higher the level of social capital relationship dimension, the easier it is to transfer tacit knowledge.

The cognitive dimension refers to the common expectation, interpretation and meaning system between enterprises, including the common vision and values[27]. This study defines it as a shared norm, which reflects the common innovation and entrepreneurial awareness among enterprises in the network. The higher the level of cognitive dimension, the closer the knowledge base and cognitive level between subjects, the more understanding between them, and the higher the level of knowledge transfer. Proposition 3 is proposed.

Proposition 3a: The higher the level of cognitive dimension of social capital, the easier it is to transfer explicit knowledge.

Proposition 3b: The higher the level of cognitive dimension of social capital, the easier it is to transfer tacit knowledge.

Research module 2: The impact of digitalization on knowledge transfer process

The difference between digital platform and traditional platform lies in the spread and application of digital technology and the endless entrepreneurial opportunities it brings. As the core elements of the digital ecosystem, digital infrastructure and users provide the possibility to expand the opportunity set[28]. The key lies in the degree of disruption and innovation brought by the participants in the ecosystem using digital technology to develop existing resources. Therefore, for start-ups in the digital ecosystem, the higher the degree of utilization of digital technology is reflected in the ability to develop digital products, access and use digital platforms and digital infrastructure, and more effectively promote the knowledge transfer of entrepreneurs to develop and realize opportunities[29]. Proposition 4 is proposed.

Proposition 4: The degree of enterprise digitalization positively regulates the relationship between social capital and knowledge transfer.

4. Theoretical Construction

This study focuses on the hot issue of theory and practice, that is how to get rid of resource constraints and seek their own development in a highly uncertain environment, focusing on how to effectively realize knowledge transfer by using corporate social capital in the entrepreneurial ecosystem. According to the deficiencies of the existing research, based on the social capital theory and knowledge management theory, the relationship model between social capital, knowledge transfer, digital technology and other variables is constructed. The research conclusion extends the research depth of relevant theories longitudinally. The innovation points mainly include the following:

First of all, how to carry out effective knowledge transfer has attracted the attention of many scholars at home and abroad, but the existing research mostly analyzes its impact on knowledge transfer from a single factor, ignoring the social context and interpersonal factors of knowledge transfer, and many of the factors that affect knowledge transfer can be classified into the category of social capital. Therefore, In recent years, many researchers have begun to pay attention to the impact of social capital on knowledge transfer. However, combing the research literature on social capital, we can find that, from the research level, there are many social capital projects at the individual level and the enterprise level, among which, the research on

knowledge transfer of multinational companies and knowledge transfer in strategic alliances is more at the enterprise level, and the research on corporate social capital in the context of entrepreneurial ecosystem is relatively less. However, in this scenario, the relationship and resources of social capital itself will have a significant impact on the effect of knowledge transfer. Therefore, this study abstracts the characteristics of social capital of start-ups under the entrepreneurial ecosystem, and uses large sample empirical analysis to fully analyze and verify the internal structure of social capital and its structural impact on knowledge transfer, which is not only conducive to expanding the emotional boundary of social capital theory, providing a new perspective for relevant research on social capital, but also enriching and improving relevant research on the entrepreneurial ecosystem.

Secondly, in the context of the era of knowledge economy, the market environment is highly competitive. To obtain and maintain competitive advantages, enterprises not only rely on the heterogeneous resources they own, but also rely on social capital embedded in various social networks. Knowledge is of great significance to enterprises, and enterprises' acquisition of external knowledge depends on the knowledge transfer from other enterprises to enterprises in the ecosystem, so the importance of knowledge transfer to enterprises is self-evident; The development of digital technology provides new channels for knowledge exchange. More and more enterprises strengthen the ties with other enterprises through the network relationship formed in the ecosystem to promote the knowledge transfer between enterprises. However, corporate social capital, which is composed of an enterprise's position in the ecosystem network, its relationship with other enterprises, and its knowledge of the whole ecosystem and the ecosystem network, has an impact on the effect of explicit and tacit knowledge transfer, but the form of this impact is not yet known. Based on this, this study focuses on the regulatory effect of digital technology between social capital and knowledge transfer, and clarifies the role mechanism of social capital between enterprises with different degrees of digitalization on knowledge transfer. It not only enriches the research on the formation mechanism of knowledge transfer, provides a new perspective for the research related to digital technology, but also promotes the growth of start-ups and empowers the development of entrepreneurship and innovation.

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