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Venture Capital Syndication under Social Network Theory: Literature Review and Prospect

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Abstract: As an important channel for start-ups to obtain R&D funds and external knowledge and information resources, and as one of the key methods for investment institutions to leverage scale and synergy effects to enhance investment returns, venture capital syndication holds significant research value in the field of venture capital. This paper reviews the literature, summarizing the motivations behind the formation of joint investment networks, the conceptual characteristics of the three core theories of social network theory, and the empirical research on venture capital syndication within the framework of social network theory. It also highlights the existing research results, identifies gaps, and anticipates future research directions.

Keywords: Social network theory; Venture capital syndication investment

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1. Introduction

Venture capital has undergone more than 40 years of development since its introduction to China in the 1980s. This rapid growth has created substantial opportunities and powerful engines for the growth of small and medium-sized start-ups and the vigorous development of high-tech industries. In the investment process, the characteristics of strong professionalism and high risk have led to the emergence of a new form of investment among investment institutions, known as venture capital syndication. Through joint investments, various venture capital institutions have invisibly formed a closely connected social network [1]. Investment institutions, depending on their position within the network, adopt different investment social strategies to achieve better investment performance and enhance their network status, influenced by factors such as resource levels, institutional size, and investment preferences. Therefore, understanding the role of the “investment network” in syndication is crucial for impacting both individual behavior and overall performance within the network [2]. This paper first analyzes the motivations behind the formation of syndication networks, introduces the three core theories of social network theory, and explores empirical research on venture capital syndication under social network theory. Finally, it proposes future research directions based on existing studies, aiming to provide references for future researchers.

2. The motivation behind the formation of venture capital syndication

Based on existing literature, the primary motivations for venture capital institutions to adopt a venture capital syndication strategy include diversifying investment risk, pooling resources, and enhancing enterprise innovation efficiency and performance.

Starting with the motivation of risk diversification, venture capital institutions can mitigate investment risk by allocating a fixed amount of funds across multiple enterprises under financial constraints [3]. This approach leverages complementary and collaborative management of key elements in joint investments. Compared to single investments, venture capital syndication more effectively meets the high financial needs of the target enterprise and avoids "putting all eggs in one basket," thereby reducing potential losses from investment failures.

From the perspective of resource accumulation, venture capital syndication enables institutions to build strong networks with their partners, accumulating resources through enhanced mutual exchange and learning, which can be beneficial for future investments. By gaining favorable information within the joint investment network, investment participants can attract potential investors to join subsequent funding rounds while maintaining the venture capital institutions' stable shareholding ratio [4].

Regarding the motivation to improve enterprise innovation efficiency and performance, the heterogeneous information within the joint investment network fosters innovation and performance improvement [5]. The diversity in member characteristics brings complementary resource advantages to participating institutions, thus promoting technological innovation within enterprises. Furthermore, comparing the equilibrium returns of venture capital institutions under different network strengths, scholars suggest that increased network strength enhances the overall return of the venture capital network [6].

3. The concept of social network theory

Since the 1990s, the research scope of social network theory has gradually expanded to include economics and management. The theory posits that individuals or organizations can form a stable social network structure through mutual connections, thus gaining access to the knowledge and resources contained within the network. The core components of this theory include the strong and weak tie theory, social capital theory, and structural hole theory.

3.1. Strong and weak tie theory

In 1973, sociologist Mark Granovetter distinguished between strong and weak social ties based on four indicators: frequency of interaction, emotional intensity, intimacy, and reciprocal exchange [7]. He proposed that strong ties, characterized by long-term, close interactions, maintain relationships within groups and organizations, offering advantages such as longevity, stability, low risk, and high trust. Weak ties, more widely distributed among groups, act as information bridges. They are characterized by information homogenization and low redundancy, creating more unique value and providing greater access to social resources.

3.2. Social capital theory

Early research on social networks was grounded in the study of social capital, identifying social networks as an intrinsic component of social capital. Jacobs first introduced the concept of social networks within social capital theory [8]. Bourdieu defined social capital as the aggregate of various resources available through social networks [9]. Coleman emphasized that social capital is a productive resource for solving collective problems, arguing that rational use of social networks can bring greater benefits to individuals or collectives [10]. Organizations acquire social capital through these networks, enhancing their value while reinforcing loyalty and responsibility within the network relationships [11].

3.3 Structural hole theory

A structural hole refers to the "gap" created by a lack of direct connection between actors in a social network. It provides new opportunities for connection for network participants around these gaps and beyond [12], thereby generating new information and resources. Structural holes mainly address weak ties in the network. Organizations that identify and exploit the advantages of structural holes can fill them, integrate necessary elements, and enhance their ability to acquire and control information and resources. As more structural holes are filled, the number of new social networks increases, the network structure evolves [13], and the network's value grows with the increasing complexity of relationships within the social network.

4. An empirical study of venture capital syndication under social network theory

4.1. Research on the antecedents of venture capital syndication under social network theory

Venture capital syndication is often a complex network due to the diverse relationships and investment objectives of the venture capital institutions involved. This section focuses on analyzing the antecedents of venture capital syndication from the relational and structural dimensions within social network theory.

4.1.1. Relational dimension

The relational dimension includes connection strength, network density, and network stability. Tie strength refers to the frequency and closeness of interactions between network members. Strong ties are typically associated with emotional support, resource sharing, stable cooperation, and reliable support, making them preferred partners for syndication [14]. On the other hand, institutions with weak ties are less bound by network relations, offering better opportunities for investment cooperation and innovation for most members. Network density significantly influences the acquisition and utilization of information; high-density networks facilitate information flow and knowledge sharing within investment networks, aiding institutions in identifying, selecting, absorbing, and updating knowledge [15]. However, high-density networks also have limitations, as each standard deviation increase in network density can reduce the entry of new venture capital institutions by one-third. Network stability indicates the strength of relationships between cooperating organizations within the network. Venture capital institutions often accumulate and build their social capital by maintaining network stability to mitigate uncertain risks, seize investment opportunities, and enhance performance, though they may face issues like asymmetric dependence from excessive embedding and a lack of diverse resource information.

4.1.2. Structural dimension

The structural dimension includes network size and network location. Network size reflects the type and number of other actors that can be connected within the investment network. A larger network size offers more opportunities for investment institutions to connect and communicate, providing enterprises with greater access to diverse resources, cooperation, and communication [16]. Larger networks also exhibit stronger robustness and effectiveness. Network location is typically characterized by structural holes and network centrality. Structural holes provide occupants with "information benefits" and "control benefits," offering a strategic advantage in the relationship network. Network centrality refers to an institution's position within the cluster network; institutions in central positions have the most connections, can access information from various points in the network, make more stable investment decisions, and consider a wider range of options. However, high network centrality also has drawbacks. Institutions with high centrality require more time and energy to maintain contacts and filter information. They may also take on high-risk industries for potential high returns, which could lead to investment failures [17].

4.2. Research on the results of venture capital syndication under social network theory

Existing literature reveals that scholars primarily study the results of venture capital syndication in terms of its impact on enterprise innovation and investment performance.

4.2.1. Innovation

The social network formed among venture capital institutions enhances institutional linkages and facilitates strategic alliances, thereby improving exploitative innovation performance. The introduction of venture capital creates a social network within enterprises [18]. By exchanging information and knowledge and leveraging or internalizing external resources, enterprises can overcome the vulnerabilities typical of new ventures and the resource constraints associated with innovation activities. Additionally, the Herfindahl index is used to measure the diversification of the industry, stage, and region within venture capital syndication, characterizing its ability to integrate and utilize diverse resources [19].

4.2.2. Performance

Research indicates that syndicated venture capital significantly impacts the performance of invested enterprises. Studies suggest that the self-centered innovation alliances of enterprises and their structural hole positions within the innovation network positively influence technological innovation [20]. Venture capital syndication offers enterprises more opportunities for trial and error by diversifying investment risks, allowing for multiple experimental approaches. However, the impact of joint investment on performance is not always positive. The involvement of multiple investors can complicate reaching a consensus, increasing the consumption of manpower, materials, and financial resources. Additionally, varying risk preferences among different investment institutions can complicate management decision-making and increase the likelihood of errors [21].

5. Research review and prospect

In the current landscape of venture capital, syndication has emerged as a strategy to achieve resource complementarity and risk sharing, ultimately leading to better performance. However, existing research perspectives have certain limitations. To address these limitations, this paper suggests the following:

First, there is a need to increase the study of endogenous factors affecting venture capital syndication. Currently, there is limited research on the relationship between syndicates and venture capital institutions. This relationship influences the ability of individual investment institutions to acquire and integrate resource information, thereby enhancing syndicate performance. By studying the imbalance within syndicates from a resource perspective, it is possible to better balance the relationships between institutions.

Second, there should be a greater distinction between influencing factors and outcome variables in venture capital syndication. Due to varying research results stemming from different data and insufficient solutions to endogenous problems, variables such as the reputation of investment institutions and network updates in current research serve as both antecedent and outcome variables. Thus, increasing the use of instrumental variables in research is an important step toward distinguishing the influencing factors and effects in venture capital syndication.

Third, more research is needed on the interaction between the factors affecting joint investment. In practice, venture capital syndication is influenced not only by individual factors but also by the interaction between these factors. Therefore, it is feasible to enhance the analysis of the core influencing factors of venture capital syndication.

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