

Influence of Network Structure Hole of Senior Managers on the Competitive Advantages of MSMEs in China

อิทธิพลของของหลุมโครงสร้างของผู้จัดการอาวุโสที่มีต่อความได้เปรียบเชิงแข่งขัน ของวิสาหกิจขนาดกลางและขนาดย่อมในประเทศไทย

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Abstract

The objectives of this research were to study the factors of structural holes in senior managers' consulting network, the determinant of MSMEs' competitiveness, and the correlation between the benefits from structural holes and the competitiveness of MSMEs. This quantitative research used questionnaires to collect data from senior managers of MSMEs in the People's Republic of China. Independent variables were composed of two dimensions of structure hole including richness and diversity while dependent variable was ability of the managers to deal with sudden difficulties and industrial policy changes. Pearson Correlation and One-Way ANOVA were employed to test the relationships among the variables. The findings of this study revealed that there was a significant relationship between structural holes in senior managers' consulting network and MSMEs' competitiveness. The findings also showed the intrinsic value of structural hole in top managers' consulting network, providing a new perspective about how MSMEs could survive and develop in the current highly market competition situation of the People's Republic of China. It also provides a theoretical and practical reference for high-level managers in how to choose, shape and optimize their social networks, in order to increase the competitiveness, to achieve the development of MSMEs.

Keywords: Competitiveness of MSME, Senior managers' Consulting Network, Social Network, Structure Hole

บทคัดย่อ

วัตถุประสงค์ของการวิจัยนี้เพื่อศึกษาหลุมโครงสร้างในเครือข่ายการให้คำปรึกษาของผู้จัดการอาวุโส ความสามารถในการแข่งขันของวิสาหกิจขนาดกลางและขนาดย่อม ความสัมพันธ์ระหว่างผลประโยชน์จากหลุมโครงสร้างและความสามารถในการแข่งขันของวิสาหกิจขนาดกลางและขนาดย่อม งานวิจัยนี้เป็นการวิจัยเชิงปริมาณใช้แบบสอบถาม

ในการเก็บรวบรวมข้อมูลจากผู้จัดการอาชูโสของวิสาหกิจขนาดกลางและขนาดย่อมในประเทศไทยและประเทศสาธารณรัฐประชาชนจีน ตัวแปรอิสระประกอบด้วยสองมิติของหลุมโครงสร้างคือความเข้มข้นและความหลากหลายในขณะที่ตัวแปรตามคือความสามารถของผู้จัดการอาชูโสในการจัดการกับปัญหาที่เกิดขึ้นอย่างกระทันหันและความเปลี่ยนแปลงในนโยบายธุรกิจการวิจัยนี้ใช้การวิเคราะห์ค่าพหุสัมพันธ์ของเพียร์สันและการวิเคราะห์ความแปรปรวนทางเดียวในการทดสอบความสัมพันธ์ของตัวแปร ผลจากการวิจัยครั้งนี้แสดงว่ามีความสัมพันธ์ระหว่างหลุมโครงสร้างในเครือข่ายการให้คำปรึกษาของผู้จัดการอาชูโสกับจำนวนการแข่งขันของวิสาหกิจขนาดกลางและขนาดย่อม ผลจากการวิจัยยังแสดงให้เห็นคุณค่าที่แท้จริงของหลุมโครงสร้างในเครือข่ายการให้คำปรึกษาของผู้จัดการอาชูโสซึ่งได้ให้มุ่งมองใหม่ว่าหลุมโครงสร้างในเครือข่ายมีอิทธิพลทำให้วิสาหกิจขนาดกลางและขนาดย่อมสามารถอยู่รอดและสามารถพัฒนาในสถานการณ์การแข่งขันที่สูงในตลาดของประเทศไทยในปัจจุบัน นอกจากนี้ยังให้การอ้างอิงเชิงทฤษฎีและเชิงปฏิบัติสำหรับผู้จัดการระดับสูงเกี่ยวกับการเลือกการจัดรูปแบบ และการสร้างประโยชน์สูงสุดของเครือข่ายสังคม เพื่อเพิ่มความสามารถการแข่งขันและสัมฤทธิ์ผลในการพัฒนาของวิสาหกิจขนาดกลางและขนาดย่อม

คำสำคัญ: ความสามารถในการแข่งขันของวิสาหกิจขนาดกลางและขนาดย่อม, เครือข่ายการให้คำปรึกษาของผู้จัดการอาชูโส, เครือข่ายสังคม, หลุมโครงสร้าง



Introduction

Based on the current situation of China, since premier Li Keqiang put forward the idea of “mass entrepreneurship and innovation” in September 2014, by the promotion and support of the Chinese government, the free market has basically taken shape after 2018. The government has not only greatly reduced its control over the market, but also promulgated a series of supportive policies for MSMEs and a large amount of financial support. The competitive advantage of MSMEs gradually returns to the market. According to the in-depth market research and investment strategy analysis report of Chinese MSMEs, China has 23,280,000 MSMEs until 2019, of which 97.3 percent are small and micro-businesses. The density of MSMEs in China is 16.792 per 1000 people, in 2019. (SME Finance, 2019). MSMEs contributed 60 percent of China's GDP, 50 percent of tax revenue, and 80 percent of urban employment. In addition, there is more than 65 percent of China's invention patents,

75 percent of technological innovation, and 80 percent of new product development are supported by the MSMEs (Chinabgao, 2018). MSMEs are the fundamental force of China's economic development, today. However, most of MSMEs are difficult to draw advantages from the resources of talent, capital, and technology. It significantly restricts these MSMEs to survive and grow in the fierce market competition.

Most MSMEs in China are private or family businesses and they have been rooted in a special cultural background, which emphasizing cooperation and relationship. There are many concepts from different aspects in the study of Chinese social relationship, such as “relational ontology” (Liang, 2011), “the pattern of difference sequence in relationship” (Fei, 2005), “relationship orientation” (He, Cheng, & Zhao, 2004) based on “fundamental interpersonal relationship orientation” (Schutz, 1958), and “Confucian Relationalism” (Huang, 2006), all of them directly or indirectly support

that the operation and management process of MSMEs is inseparable from the informal systems and social relationship, and the communication and connection behaviors of entrepreneurs or senior managers cannot be established without the social relationships. In the book “the trust game of Chinese”, Luo and Ye (2007) has also pointed out that Chinese management has its own peculiarity, it is formed by the connecting process between the internal and external network of organizations, and it helps MSMEs to overcome some difficulties that cannot be solved by a formal system or relationship, like the pressure or crisis from capital, personnel, technology, and market.

Consequently, top managers of Chinese MSMEs often play an indispensable complementary role in the formal system. The consulting relationship network between senior management and external individuals is especially important for the competitive advantages, it has become one of the bases for MSMEs to build competitive advantages.

The resources needed by an MSMEs' development is usually in the hands of other organizations or individuals. In order to survive and develop, the enterprise has to obtain these resources from the external environment. When such resource acquisition and dependence relationships are persisted, a network is formed for the enterprise to acquire needed resources. Enterprises are involved in an environment composed of various relationship networks, and the channels of resource acquisition come from the network. Based on the above understanding, Granovette (1973) gave an important conception of “Embeddedness” and noticed that an individual or enterprise's network is an important factor in their behavior and performance. Therefore, an enterprise is not a self-acting independent entity

but should be placed in the network for analyzing. The conception of embeddedness has caused a great enthusiasm for the scholars to employ the social network theory and method to study the enterprise strategy. It forms a frontier field of management research.

Statement of Problems

The network represents that an enterprise embedded is an important form of interaction between internal and external of the enterprise. The carrier of the interactive relationship in the network of an enterprise is essentially the person in the network, who is a boundary spanner. Undoubtedly, top managers of an enterprise are the most important group of these people. Enterprises generally rely on their senior managers to establish connections and build networks with outside relationships, particularly is the consulting network built by senior managers for the development of the enterprise. This kind of consulting network constructed by senior personnel is an important channel for enterprises to obtain resources and information, and also an important type of embedding of enterprises' networks. However, from the current researches, the analysis of how the consulting network of senior managers affects the enterprise performance is insufficient.

In a relatively small number of relevant studies, some scholars have discussed whether the social relations owned by senior managers will have an impact on the performance of enterprises and whether the use of government relations and business relations by senior managers will increase the performance of enterprises. However, these researches only focus on the degree of utilizing the social connections of senior managers, they haven't discussed the influence of the network

and its structural characteristics on personal relationships. Other researches only analyzed the characteristics of the relationship between business managers and competitors in the industry. Thus, there is still a big research gap about the influence of social network on different characteristics of enterprises. The market segments, the demand, the competitors of MSMEs and large companies are different, the benefits that senior managers look for from their network are different, even the structure of the network they embedded is different. Even so, the preliminary exploration of the above researches still plays an important role in enlightenment for future studies. To some extent, it reveals that there are certain correlations between the social relations of senior managers and their networks and enterprise performance, which also constituted the research significance of this research. In a relatively small number of relevant studies, some scholars have discussed whether the social relations owned by senior managers will have an impact on the performance of enterprises and whether the use of government relations and business relations by senior managers will increase the performance of enterprises. However, these researches only focus on the degree of utilizing the social connections of senior managers, they haven't discussed the influence of the network and its structural characteristics on personal relationships. Other researches only analyzed the characteristics of the relationship between business managers and competitors in the industry. Thus, there is still a big research gap about the influence of social network on different characteristics of enterprises. The market segments, the demand, the competitors of MSMEs and large companies are different, the benefits that senior managers look for from their network are different, even

the structure of the network they embedded is different. Even so, the preliminary exploration of the above researches still plays an important role in enlightenment for future studies. To some extent, it reveals that there are certain correlations between the social relations of senior managers and their networks and enterprise performance, which also constituted the research significance of this research.

Based on the above analysis and research gaps, there are three problems as follows:

1. The research about the surviving difficulties of MSMEs in the current market situation of China is insufficient.
2. The research about how MSMEs can survive and develop in the current market situation of China is insufficient
3. The research about the relationship between the benefits of structural hole in senior managers' consulting network and the increasing competitiveness of MSMEs is insufficient.

Research Objectives

The embeddedness of a company in the environment is one of the sources of its competitive advantage. This embeddedness is not only reflected in the network characteristics of mutual cooperation between enterprises and other enterprises, but also in the network characteristics of individual senior management personnel. Analyzing the behavior and performance of a company based on the characteristics of the personal relationship network is helpful to understand the micro-foundation of corporate strategic issues, thereby providing a new perspective for related research. In addition, although the characteristics of an enterprise's personal network will have an impact on its competitive advantage, it cannot be simply assumed that as

long as a certain network of relationships is established, it will definitely increase the competitive advantage of the enterprise. The competitive advantage of an enterprise is reflected in all aspects. A network with certain characteristics may enhance some of these advantages, but it may inhibit other advantages.

In order to fully answer the research questions above, and reach the purpose of this study, there are 4 research objectives are listed below:

1. To study what benefits from structural holes in senior managers' consulting network can help Chinese MSME to improve their competitiveness.
2. To determine the influencing factors of structural holes and the competitiveness of MSMEs
3. To investigate the influence mechanism between senior managers' consulting network and the competitiveness of MSMEs in China.
4. To test the correction between structural hole and the competitiveness of MSMEs in China.

Research Significance

Therefore, the research significances of this research are given below:

1. Revealing the intrinsic value of structural hole in top managers' consulting network, providing a new perspective for future research.
2. Providing a valuable theoretical perspective on the consulting network of top managers and the competitiveness of MSMEs.
3. Providing a theoretical reference for high-level managers in how to choose, shape and optimize their social networks.
4. Comparing with previous studies, this research presents a new perspective about the

new roles of entrepreneurs and senior managers of MSMEs in China.

Literature Review

The Competitive Advantages from Senior Managers' Personal Network

The strategic decisions made by senior personnel for the enterprise are closely related to their background and experience (Child, 1972; Hambrick and Mason, 1984). The personal networks of senior personnel are often regarded as an important manifestation of their social roles. Hence, the relationship network of senior managers will affect the strategic behavior of the enterprise and the competitive advantage of the enterprise. From the perspective of the network itself, it can bring specific resources to enterprises. Thus, the relationship can be considered as a carrier of resource flow, and the network can be regarded as a structure of resource flow and allocation. It even can count the network as a resource owned by the enterprise. As a resource, it can produce certain competitive advantages for enterprises.

Geletkanyca and Hambrick (1997) mentioned that the personal relationship network constructed by senior managers is an important carrier for the interaction between internal and external networks. When the external environment is more uncertain, businesses interact with the outside network will more rely on the social relationship of top managers. (Powell, 1990). Peng and Luo (2000) also pointed out that resources in the social network of senior managers are important in the market where the information cannot flow completely. The high-quality social network of senior managers can help enterprises resist external risks, save transaction costs, maintain transaction activities, facilitate information acquisition, and improve the

effectiveness of decision-making, thus affects the enterprise's competitive advantage construction.

Therefore, in order to reach the needs of economic transition in China, MSMEs' survival and development are dependent on the personal relationship network built by their top executives. (Child, 1994).

Construction of Senior Managers' Consulting Network Based on The Development of MSMEs

According to some researches' findings, under the economic and social environment of China, the influence and potential information in a personal network is the reliance of social relationship that MSMEs is looking for. (Gibb & Li, 2003). In the case of insufficient information flow, valuable and important information cannot often fully and easily to be obtained in the market competition. As a result, most of MSMEs utilize changes from the process of inlaying and integrating external relations to dynamically adjust their position in the social network for grasping more competitive advantages.

As the most important external contact of a company, senior managers will maintain close social ties with many external people, and from whom they get advice or valuable information on business development. (Ibarra & Hunter, 2007). This kind of personal network could be called a personal counseling network. This network is owned by senior managers, but the purpose of establishing it is for the development of the enterprise. This network usually has a specific connotation, which is not only for obtaining information, but also is to support the development of enterprises by the influence of people who has a more important position in this network. Therefore, Reeves and Deimler (2011) argued that this kind of consulting network of senior managers

can be relied on by enterprises as an important factor of increasing competitive advantage.

Analysis of Consulting network characteristics from the perspective of structural hole

This research focuses on the senior management consulting network, which is a kind of "Ego-centered Network" in social network. In the network, it is built by senior managers for the development of the enterprise, the manager is at the center position (Ego) of the network. At present, many scholars focus on analyzing the structures of ego-centered network. Most of them emphasize on what kind of structures (tight network and loose network) has more value for the enterprises' development.

The scholars represented by Coleman (1988) believed that the dense network can generate cohesion, which can relatively make the high trust among network members, and the network emphasizes the common behavioral norms and concerted actions, which are conducive to the information sharing of network members and the common defense of sudden risks. However, with Burt (1992) as a representative of scholars believe that although the network with intensive relationship could let its members are closely connected with each other, the sharing of the information in this network could make its members all have the same or similar information, which causes the lack of information diversity and the redundancy information among the members. As a result, the value of this network is reduced. Based on this understanding, Burt announced if there is no connected relationship among some members of the network, there is no information sharing channel, and there should be a structural hole among them. Because of that, the information that exists in the structure hole is likely

to heterogeneous and non-redundant, which ultimately can bring the structure hole owner to have this network information diversity and competitive advantages. Although the study of Coleman is about the performance of enterprises is basing on the co-operation among members of a network, Burt holds the opinion that the structure hole can bring more exclusive information to the structure hole occupant, which can enhance the competitiveness and performance of the enterprise.

Conceptual Framework

This study focusses on two kinds of competitive advantages of MSMEs: the competitive advantage to cope with unexpected difficulties and the competitive advantage to cope with changes in industrial policies. Selecting these two competitive advantages as dimensions of the dependent variable is determined by the external environment of Chinese MSMEs. Due to the characteristics of economic transformation in China, the external environment of MSMEs is highly uncertain, and various factors of business and market are in a great degree of change. The lack of prediction of market and policy trends makes most MSMEs easily fall into different business operational difficulties. Therefore, whether an enterprise can deal with sudden difficulties can be considered as one of the important manifestations of the competitive advantage.

Moreover, another important feature of economic transformation is that the policies of industries are often adjusted, improved and changed. For MSMEs, industrial policy changing means more business opportunities, but at the same time, it also implies higher business risks that they might be unable to cope with. Therefore,

Wang, Yao, and Xi (2008) pointed out that the ability to respond well in the changes in industrial policy constitutes an important part of Chinese SMEs' competitive advantages.

To gain competitiveness in sudden difficulties and industry policy changes, the requirements of the network that the MSMEs have embedded are different. Coleman (1990) argued that when an MSME relies on the consulting networks of senior managers to cope with the sudden difficulties, the really effective network structure is the dense network. This kind of network has high internal trust and stronger cohesion, it is easy for members to form strong emotional support between each other, which leads to a powerful driving force for members to coordinate their actions and pursue common goals. Therefore, when sudden difficulties happen, the consulting network with few structural holes can easily enable the MSME to obtain strong external support, and effectively overcome the difficulties.

However, with Burt (1992) as a representative of scholars believe that although the network with intensive relationship could let its members are closely connected with each other, the sharing of the information in this network could make its members all have the same or similar information, which causes the lack of information diversity and the redundancy information among the members. As a result, the value of this network is reduced. The information that exists in the structure hole is likely to heterogeneous and non-redundant, which ultimately can bring the structure hole owner to have this network information diversity and competitive advantages. Although the study of Coleman is about the performance of enterprises is basing on the co-operation among members of a network, Burt holds the opinion that the structure hole can bring more exclusive infor

mation to the structure hole occupant, which can enhance the competitiveness and performance of the enterprise. Moreover, Burt (2004) argues that “opinion and behavior are more homogenous within than between groups, so people connected across groups are more familiar with alternative ways of thinking and behaving...” (pp. 349–350). In tightly networked clusters of people, discussion of redundant information is likely to be prevalent, therefore, it is in the exploration of the holes around and between these tight networks where an individual is also likely to find the greatest benefit in bridging the structural hole to another individual and/or network to access non-redundant information and/or resources. (Burt, 2004; Liu, 2010; Cowan & Jonard, 2007).

According to theories of Coleman (1990) and Burt (1992), based on the situation of MSMEs in China, the writer believes that whether the consulting network is dense or loose, the more structural holes exist in the network, the more heterogeneous and non-redundant information can be provided by the network to solve sudden difficulties internally and more efficiently. In the meantime, the enterprise also can get various favors from structural holes that are around and between these tight networks.

In industrial policy changes, the senior manager’s consulting network with a high diversity of structure hole has more value than the structure hole with high richness. To capture the relevant information timely is the key ability of MSMEs to deal with the difficulty of industry policy changes. It is important for MSMEs to take the precautions and the preemptive opportunities under this kind of risks that can be expected but cannot be controlled. Burt (2004) notes that the network provides more diversity channels for the managers to obtain new and valuable

information, which beneficial for enterprises to predict and evaluate the potential risks in the industry market. When a senior manager has occupied structural holes in this type of network, the competitiveness of the enterprise usually can be enhanced by comparing the competitors who lack the capability of risk prediction. By contrast, the structural holes with a low diversity of structure hole have more redundant information because of the limited source of information. Thus, a low diversity network has little value for MSMEs to cope with this kind of risk like industry policy changes.

Based on the above analysis, these research hypotheses could be given below:

H_1 : There is a significant correlation between structure hole in senior managers’ consulting network and MSMEs’ competitiveness.

H_2 : There is a significant correlation between the richness of structure hole and MSMEs’ competitiveness in sudden difficulties.

H_3 : There is a significant correlation between the diversity of structure hole and MSMEs’ competitiveness in industry policy changes.

Research Methodology

This quantitative research employed questionnaires to collect the data from respondents who are entrepreneurs or high-level managers of MSMEs in Yunnan province. A total of 533 questionnaires from different enterprises were collected. We distributed more than 2000 questionnaires in 8 cities (Yunnan province has 8 cities in total), and covered 20 different business areas of enterprise. The collection rate is near 27%.

Population and Sample Size

There are 23,280,000 MSMEs of the whole of China in which 1,012,174 MSMEs of

Yunnan province have registered on State Administration for Market Regulation. (SME Finance, 2019). Therefore, the sample size for the study is derived from Taro Yamane formula (1967).

$$n = \frac{N}{(1 + Ne^2)}$$

Where

n= corrected sample size

N = population size

e = Margin of error (MoE), e = 0.05 based on the research condition.

Supposing to calculate a sample size of a finite, when the original sample collected is more than 5% of the population size, the corrected sample size is determined by using the Yamane's formula. Based on this study, the population size is 1,012,174, the error level is 0.05. the calculation for the required sample size will be as follows:

$$n = \frac{1012174}{(1 + 1012174 \times 0.05^2)} = 399.84 \approx 400$$

Research Tools

In order to test the research hypothesis, a quantitative research design was employed to collect the primary data with questionnaire survey from 471 entrepreneurs or high-level managers of Chinese MSMEs in Yunnan province, China. In this paper, KMO and Cronbach's Alpha was employed for testing the validity and reliability of all scale factors and variables. Pearson Correlation was adopted for testing the correlations between variables, and employing One-Way ANOVA to further specifies the direction of correlation and studies whether there is a causal relationship between variables.

Data Collection

In order to avoid possible misunderstandings caused by different personal cognition about our designed questions, we distributed questionnaires in target groups which were entrepreneurs or high-level managers of MSMEs, such as SME co-operation working places, social communities, activities, and meetings of "start-ups and innovation", and part-time MBA programs in universities.

Statistical Analysis

Descriptive Analysis Results

Since this study only focuses on micro, small, and medium enterprises, all data from 28 large size enterprises of 533 samples had been deleted, and all data from the other 34 respondents, who are not senior managers, had been deleted. As a result, the total valuable sample number is 471. The findings from this research illustrated that the majority of the respondents were male 52.8 percentage and female 47.2 percentage.

Sample Validity and Reliability Tests

The validity analysis of this research is based on factor analysis. KMO and Bartlett's sphere test is adopted to examine whether samples are suitable for factor analysis, to estimate whether the different measurement items under the same variable can reflect the characteristics of the measured variable more accurately.

The reliability test is a measurement method used to check whether the data from the questionnaire survey has consistency or not, which usually employ Cronbach's Alpha to test the consistency coefficient.

Table 1*Validity and Reliability Test Result*

Factors	KMO	Sig	Alpha
Structural Hole	.985	.000***	.983
Richness	.968	.000***	.956
Diversity	.972	.000***	.978
Competitiveness	.872	.000***	.949
Policy Changing	.764	.000***	.929
Sudden Difficulties	.773	.000***	.905
All Scale Factor (33 Items)	.990	.000***	.990

Sig < 0.05

The results of Table 1 revealed that all data of independent variables (Structural Hole, Richness and Diversity of Structural Hole) and dependent variables (Competitiveness, ability of dealing with Policy Changing and Sudden Difficulties) have high validity and reliability. Thus, correlation and regression analyses can proceed.

Correlation and Regression Analysis

As the premise of regression analysis, Pearson Correlation is used to preliminarily judge whether the interaction and influence between variables exist and whether the hypothesis is valid in this research.

One-Way ANOVA as regression analysis in this paper is to further specifies the direction of correlation and studies whether there is a causal relationship between independent and dependent variables.

Table 2*Coefficients of Correlation and Regression between Variables*

IV	DV	Person Correlation Coefficient	Adjusted R ²	F	Standardized Coefficients	Sig.	Hypotheses Test Result
SH	C	.925	.855	51.746	.925	.000***	H ₁ Accepted
R	SD	.882	.778	47.021	.882	.000***	H ₂ Accepted
D	PC	.899	.808	53.999	.899	.000***	H ₃ Accepted

Sig < 0.05

Annotation: IV is Independent Variable; DV is Dependent Variable; SH is Structural Hole; R is Richness of Structural Hole; D is Diversity of Structural Hole; C is Competitiveness; SD is Competitiveness in Sudden Difficulties; PC is

Competitiveness in Industry Policy Changes.

Table 2 shows that the two-tailed test the correlations between independent and dependent variables are all at significant level

(error-tolerant < 0.01). Values of Pearson Correlation are greater than 0.8, which indicates that there are high degrees of correlations between structural hole in senior managers' consulting network and competitiveness of MSMEs, between richness of structural hole and competitiveness in sudden difficulties, between diversity of structural hole and competitiveness in policy changes. As a result, hypotheses 1 to 3 can be accepted. Moreover, according to the coefficients of Adj. R², there are high explanations percentage from independent Variable (structural hole, Richness, and Diversity) to dependent Variable (competitiveness, sudden difficulties, and policy changes). The standardized coefficients Beta here indicate that H1 to H3 were accepted with positive relationships.

Discussion

In the part of the sample validity and reliability test, all scale factors have passed KMO and Cronbach's Alpha test with high validity and reliability value. In the part of correlation and regression analysis, results of Pearson Correlation and linear regression analysis clarified that all hypotheses (H1 to H3) can be accepted with significant positive correlations.

H_1 : There is a significant correlation between structure hole in senior managers' consulting network and MSMEs' competitiveness.

H_2 : There is a significant correlation between the richness of structure hole and MSMEs' competitiveness in sudden difficulties.

H_3 : There is a significant correlation between the diversity of structure hole and MSMEs' competitiveness in industry policy changes.

By analyzing the relationship between the entrepreneurial structure hole and the social network, this study found that under the tra

ditional Chinese culture background, the entrepreneurial social capital majorly come from the social relationship. The findings from this study that is a significant positive correlation between the richness of structure hole and MSMEs' competitiveness in sudden difficulties. It is in line with Burt (2004), Liu, Chiu, and Chiu (2010), Cowan and Jonard (2007), but argued the findings from Coleman (1990) who find that the dense network can generate cohesion, which can relatively make the high trust among network members, and the network emphasizes the common behavioral norms and concerted actions, which are conducive to the information sharing of network members and the common defense of sudden risks.

Burt (1992) argued that although the network with an intensive relationship could let its members are closely connected with each other, the sharing of the information in this network could make its members all have the same or similar information, which causes the lack of information diversity and the redundancy information among the members. As a result, the value of this network is reduced. The information that exists in the structure hole is likely to be heterogeneous and non-redundant, which ultimately can bring the structure hole owner to have this network information diversity and competitive advantages. Burt holds the opinion that the structure hole can bring more exclusive information to the structure hole occupant, which can enhance the competitiveness and performance of the enterprise. Moreover, Burt (2004) deemed that "opinion and behavior are more homogeneous within than between groups, so people connected across groups are more familiar with alternative ways of thinking and behaving..." (pp. 349–350). Liu and Chiu (2010), Cowan and Jonard (2007), and other like-minded scholars pointed

out that in tightly networked clusters of people, discussion of redundant information is likely to be prevalent, therefore, it is in the exploration of the holes around and between these tight networks where an individual is also likely to find the greatest benefit in bridging the structural hole to another individual and/or network to access non-redundant information and/or resources.

The differences between our findings and Coleman (1990) could be explained by the different social environments, historical background, and cultures. China as a typical collectivism country, particularly after the Great Proletarian Cultural Revolution, the social network of China is denser than other individualist countries. Many Chinese scholars agree that social relations in China are established on the same cultural and historical background, it emphasizes the trust and receptivity between people. Thus, it grinds down the barriers to entry different industries, to some extent.

Recommendation

Contribution to Knowledge

This paper discusses the new mission and value of MSMEs' senior managers from the perspective of structural hole, and reveals the intrinsic value of structural hole in top managers' consulting network, providing a new perspective for future research. By analyzing the relationship between the structure hole and the social network, this study provides a valuable theoretical perspective on the consulting network of top managers and the competitiveness of MSMEs. Moreover, based on the study of the outcomes of the consulting network and the balanced distribution of network benefits brought by the reconstruction of the relationship chain, it provides a theoretical reference for high-level managers in how to choose, shape and optimize

their social networks. In addition, by analyzing the measurement dimensions of the consulting network of senior managers, the structure hole, and the competitiveness, this study presents a new perspective compared with previous studies, that to reasonably optimize, eliminate, and reconstruct social relationship network of top managers of MSMEs based on the current operating situation of enterprises could help them to explore and identify new potential opportunities, coordinate internal and external relations of enterprises, and establish the trust and reputation of enterprises.

Contribution to Practice

In order to effectively manage personal network relationships and timely adjust and reposition the status of structure holes, senior managers need to unite their behaviors of building a personal relationship with the growing needs of enterprises. Structure hole is a dynamic process of change. The dynamic change is accompanied by the growth, management, optimization and reconstruction of the structure hole, which are also an important function of managers in relationship management. The entrepreneurs and managers could meet the different needs of competitiveness and development of the enterprise by the dynamic adjustment of structural holes with different characteristic forms, diversity, and heterogeneity. On the one hand, Senior managers of MSMEs are the main force for helping their enterprises to get rid of their own existence of various business difficulties. The individual consulting networks of senior managers carry huge social resources that could support a company to gain and sustain competitive advantages. Therefore, a new role of enterprise or senior managers is to explore, integrate, optimize, and utilize the social resources from their consulting social networks.

On the other hand, considering situation of senior managers they may have to face limited time and energy, limited management practice, and the effect of weakening from competitors. Occupying structural holes in their social network could be a better way to solve these problems. As Freeman (1977), Burt (1980), and Simmel (1992) described that structural hole is a node of resource flow (or information flow) in the social network. The structural hole owner has power or advantages to control the direction of benefit flows, which provide high effective and efficient performance for earning the competitiveness.

When senior managers faced with the current situation of limited, , they should flexibly use the occupied structural hole in the relationship network to explore better and richer network benefits for their enterprises.

In the process of construction and maintenance of individual relationship network, senior managers need to pay more attention to searching structure holes in the network structure of different groups and should play a role as a “relationship bridge builder” in different industries or fields in the market when they consolidate the various relationship chains, which could make previously unrelated groups form connectional unit, make them become the intermediary of resource and information flow, it could combine internal and external heterogeneous information and interests for the enterprise, so as to increase the competitive advantages. The managers should also initiatively enhance the connections strength, the relevance, and the heterogeneity of the related networks, and enable differentiated network members to communicate and interact each other more closely and smoothly, which could help to reinforce the advantages of obtaining and controlling information sources, so as

to improve the level of management innovation and decision-making. At the same time, the managers should pay attention to prevent the disadvantageous situation that informal organizations and closed networks could disintegrate their structure hole. There are many ways, such as optimizing, eliminating, and reconstructing their redundancy relationship, which the managers could adapt to expand the diversity of their relationship network, explore and identify new potential opportunities, coordinate internal and external related parties, and rebuild the trust and the reputation in the market. Thus, the information advantage of the structure hole could be used to obtain an efficient investment return and diversified social resources for helping enhance the competitive advantages of MSMEs.

Limitation and Future Research

This study mainly focusses on the research about the network structure hole of senior managers on the competitive advantages of MSMEs. However, with the development of the social economy and market economy, it is difficult for MSMEs to survive individually in the increasingly fierce market competition. Therefore, there are many MSMEs clusters and joint office space (or called co-working space) as new things have appeared in the market in China. In future research, the structural hole in the consulting network of senior managers could be deeper analyzed from the perspective of closed and opened MSMEs clusters, such as structure holes in internal relationships of a cluster and structure holes in the network formed by different clusters. In addition, the functions of top managers’ structural hole are touched upon in this study, which could be also deeply analyzed as new functions of managers in future research. From the perspective of

social relationships, functions of seeking, occupying, optimizing, and maintaining structure holes, which could be considered as one of the key duties of top managers of MSMEs. Although it is nearly impossible for one enterprise to occupy all structure holes in a network, the number and the richness of occupied structure holes can help the

competitive advantages of MSMEs. However, too many redundancy structure holes could cost too much energy and reducing the work efficiency of the senior managers for maintaining them. Thus, how to optimize the position of structural holes in the consulting network could be studied in the future.



Reference

Burt, R. S. (2004). Structural holes and good ideas. *American journal of sociology*, 11(2), 349-399.

Butt, R. S. (1992). *Structural holes*. Cambridge, MA: Harvard University Press.

Child, J. (1972). Organizational structure, environment, and performance: The role of strategic choice. *Journal of sociology*, 6(1), 1-22.

Child, J. (1994). *Management in China during the age of reform*. Cambridge and New York: Cambridge University Press.

Chinabgao. (2018). *Analysis of the number of small and medium-sized enterprises in China*. Retrieved from <http://www.chinabgao.com/k/qjye/28142.html>.

Coleman, J. (1988). Social capital in the creation of human capital. *American journal of sociology*, 94(Supplement), S95–S120.

_____. (1990). *Foundations of social theory*. Cambridge, MA: The Belknap Press of Harvard University Press.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Journal of psychometrika*, 16(3), 297-334.

Fei, X. T. (2005). *Native China*. Beijing: Beijing Publishing House.

Geletkanyca, M. A., & Hambrick, D. C. (1997). The external ties of top executives: Implications of strategic choice and performance. *Administrative science quarterly*, 42(4), 654-681.

George, D., & Mallory, P. (2010). *SPSS for Windows step by step: A simple guide and reference 17.0 Update*. (10th ed.). Boston: Pearson

Gibb, A., & Li, J. (2003). Organizing for enterprise in China: What can we learn from the Chinese micro, small, and medium enterprise development experience. *Journal of futures*, 35, 403-421.

Hambrick, D., & Mason, P. (1984). Upper echelons: The organization as a reflection of its top managers. *The academy of management review*, 9(2), 193-206.

He, Y. H., Cheng, S. J., & Zhao, Z. Y. (2004). *Relationship orientation: Seeking answers to Chinese social psychology methodology*. In G. S. Yang & G. G. Huang, (Ed.). Chinese psychology and behavior. Taipei: Guangui Publishing House.

Huang, G. G. (2006). *Confucian relationalism*. Beijing: Peking University Press.

Ibarra, H., & Hunter, L. M. (2007). How leaders create and use networks. *Harvard business review*, 85(1), 40-49.

Liang, S. M. (2011). *The essence of Chinese culture*. Shanghai: Shanghai People's Publishing House

Liu, X. (2008). SME development in China: A policy perspective on SME industrial clustering. In Lim, H. (Ed.). *SME in asia and globalization ERIA research project report 2007*, 5, 37-68.

Luo, J. D., & Ye, Y. Z. (2007). *The trust game of Chinese*. Beijing: Social Sciences Academic Press

Nunnally, J. C. (1978). *Psychometric theory*. (2nd ed.). New York: McGraw-Hill.

Peng, M. W., & Luo, Y. (2000). Managerial ties and firm performance in a transition economy: The nature of a micro-macro link. *Academy of management journal*, 43(3), 486-501.

Powell, W. M. (1990). Neither market nor hierarchy: Network forms of organization. In B. M. Staw, & L. L. Cummings (Ed.). *Research in organizational behavior*, 12, 295-336.

Reeves, M., & Deimler, M. (2011). Adaptability: The new competitive advantage. *Harvard business review*, 89(7/8), 134-141.

Rovinelli, R. J., & Hambeton, R. K. (1977). On the use of content specialists in the assessment of criterion-referenced test item validity. *Dutch journal of educational research*, 2, 49-60.

Schutz, W. C. (1958). *FIRO: A three-dimensional theory of interpersonal behavior*. New York: Holt, Rinehart & Winston.

Tavakol, M., Mohagheghi, M. A., & Dennick, R. (2008). Assessing the skills of surgical residents using simulation. *Journal of surg educ*, 65(2), 77-83.

Wang, J., Yao, H. L., & Zhao, X. (2003). Structure of social capital and the development of private enterprises. *China industrial economy*, 9(5), 53-59.

Yamane, T. (1967). *Statistics: An introductory analysis*. (2nd ed.). New York: Harper & Row.

