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**Abstract** As a major form of organization decision-making, the team decision-making has always been the academic focus of attention. The construction of risk decision-making of entrepreneurial team is the most important role in the future and the destiny of venture enterprises and the start-ups. This paper analyzes the individual psychological and self-efficacy characteristics of each member in the entrepreneurial team and finds that six major factors—Risk Perception, Opportunity Perception, Risk Preference, Innovation Power, Executive Power and Decisive Power, have great influence on the risk-making performance of entrepreneurial team. The empirical study is based on the 4-person top management team members. The results show that entrepreneurial teams with different scales have different risk decision-making modes, the typical ones of which are democracy type mode, quasi-democracy type mode and quasi-dictatorship type mode.

**Key words** Entrepreneurial team; Trait identification; Risk preference; Mode of risk decision-making

## 1 Introduction

As the external and internal factors in the entrepreneurial processes are uncertain, most entrepreneurial decisions are considered to be risk ones. (1) the external uncertain factors, including the uncertainty of policy environment, external competition and technological environment; (2) the internal uncertain factors, including the experience of decision makers, risk preference, emotion, achievement motivation and decision-making styles. Moreover, new ventures usually have smaller sizes and less time to make decision comparing with mature firms, which lead to higher risk decision-making problem.

However, different from individual decision-making, decision-making of entrepreneurial team has its own predominance. As entrepreneurial team is a diversified organization, which consists of several individuals possessing complementary advantages such as professional skills, professional experience etc., and which can integrate various factors of personality, knowledge, experience, ability, talent, reputation and social network of team members. Therefore, when entrepreneurial team makes decision, cognitive differences in the team can improve the team efficacy and team decision-making efficacy. Team decision-making plays an important role during the entrepreneurial process.

Schwenk and Valacich (1994)<sup>[1]</sup>, from Indiana University in US, notice that heterogeneous team can bring task decomposition and make a perfect decision finally. The decision performance of heterogeneous team is better than one of homogeneous team. Williams and O' Reilly (1998)<sup>[2]</sup> hold that the main reasons for the diversification of entrepreneurial team having the positive influences on the decision performance are: (1) the heterogeneous entrepreneurial team can generate more creative ideas; (2) the heterogeneous entrepreneurial team is liable to produce stress and conflict, and are contributed to analysis and solve problems, which can bring perfect decision and performance. In order to study on the decision problems of entrepreneurial team, there must be an investigation on the composition and structural characteristics of decision-making group.

In view of this, and on the basis of the trait identification of entrepreneurial team members, the paper analyzes the connection between constitutive characteristics of different members in

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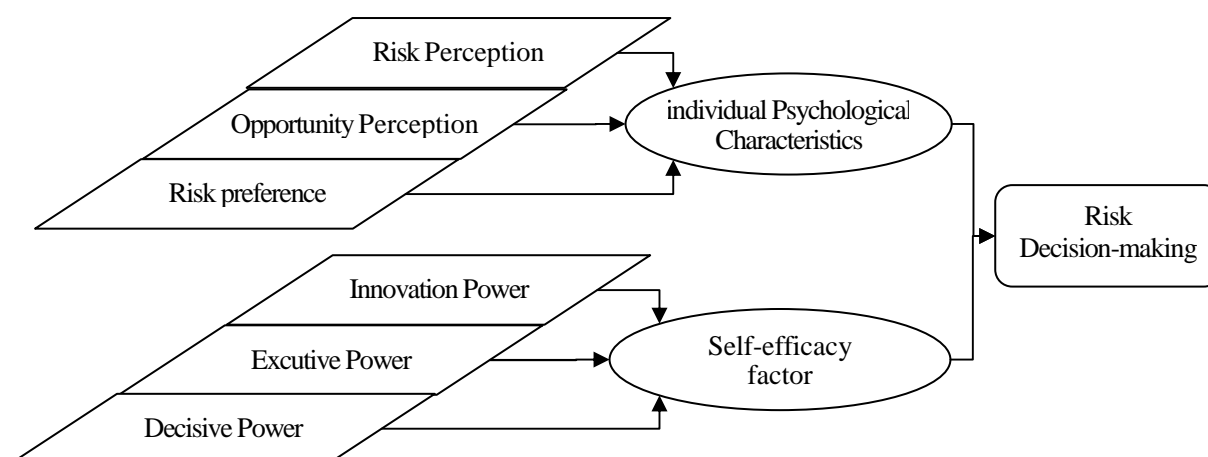
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entrepreneurial team and risk decision-making.

## 2 Trait Identification of Entrepreneurial Team Members

### 2.1 “3+3”mode of trait identification

This paper studies the individual characteristics factors of entrepreneur from two aspects of individual psychological characteristics and self-efficacy characteristics. The individual psychological characteristics consist of three psychological factors—risk perception, opportunity perception and risk preference. The self-efficacy characteristics consists of three effectiveness factors—innovation power, executive power and decisive power. The six factors show the various individual characteristics of entrepreneurs, which affect the entrepreneurial risk decision-making. The individual characteristics factors of entrepreneur act on the risk decision-making as shown in Figure 1.



**Figure 1 Representation of Individual Characteristics Factors of Entrepreneur Acting on the Risk Decision-making**

Risk perception, is a subjective feeling and estimation of objective risks, which may happen in the future to the company, or from external environment etc., or from certain specific business. The risk perception is vulnerable to the individual cognitive bias and risk tendency. Opportunity perception is subjective estimation to the company’s development opportunities, and to the opportunities to grasp and capture the certain business. Risk preference, is the psychological attitude towards the decision-maker viewing of risk, which is classified into three types of Risk Loving, Risk Averse and Risk Neutrality.

Innovation power refers to the capacity of presenting new project and obtaining more competitive advantages in the case of having internal reform to element resource of company and internal reform. Executive power refers to the working ability at the premise of having a correct understanding to the assignment undertaken and projects. Decisive power refers to the decisiveness of guiding to a target when making selection, adjustment and determination to the direction, content and ways of activities.

The risk preference factor has three indexes of risk loving, risk averse and risk neutrality. Other five factors have three scales of power, i.e. strong, medium and weak.

### 2.2 The process of trait identification of entrepreneurial team members

In this paper, the entrepreneurial team members are classified by responsibility range which is called “functional supplement”. The research objects of this paper are 50 in-service graduates in 48 venture enterprises. They are in the MBA teaching complying with the requirements of entrepreneurship. The 50 students are in the process of entrepreneurship and are the members of each entrepreneurial team. The ways of investigation adopt questionnaire and questionnaire for investigation.

As the 50 objects are from technical director, financial specialist, production operation expert,

market specialist and human resource specialist etc., this paper will consider four function types in terms of the rate and important degree of the function: technical director, financial specialist, human resource specialist and market specialist. In addition, it is found in the research that the leader role is widespread and of most importance to the entrepreneurial team. Even in the process of decision-making, the leader plays a very important role in it. Therefore, this paper admits the leader role and divides it into leader-type leader and harmony-type leader for the difference of leadership style.

The six types of members are leader-type leader (Type A), harmony-type leader (Type B), technical director (Type C), financial specialist (Type D), human resource specialist (Type E) and market specialist (Type F). They express different individual psychological characteristics and self-efficacy characteristics as shown in the Tab 1.

**Table 1 Typical Types of Entrepreneurial Team Members**

Member trait	Risk perception	Opportunity Perception	Risk preference	Innovation Power	Executive Power	Decisive Power
leader-type leader (A)	strong	strong	loving	strong	strong	strong
harmony-type leader (B)	strong	strong	neutrality	strong	strong	medium
technical director(C)	medium	medium	neutrality	strong	strong	weak
financial specialist(D)	medium	weak	averse	weak	strong	weak
human resource specialist(E)	medium	medium	neutrality	medium	strong	weak
market specialist(F)	strong	strong	neutrality	strong	strong	medium

The identical points between leader-type leader A and harmony-type leader B are that they both possess high intellectual flexibility, open and tolerable mind. They pursue diversified, multi-angle and advanced thought. Therefore, they have strong risk perception, opportunity perception, innovation power and executive power. The differences between them indicate that leader-type leader A has more influence power than harmony-type leader B for type A is a risk lover who makes team members being affected by his vision-driven, and makes the incompatible views on the risk decision. However, harmony-type leader B has more advantage in coordinating relationship between members and organizing all kinds of activities, especially in the process of decision-making. Hence type B leader is risk neutral and have medium decisive power.

Technical director (C), financial specialist (D) and human resource specialist (E) are all noted for special achievement in a particular field. They all possess strong executive power, medium risk perception and weak decisive power. The differences are that technical director has strong innovation power and opportunity perception on account of concerning the core technology. Moreover, financial specialist the internal cost issues of the company. So he or she is risk averter.

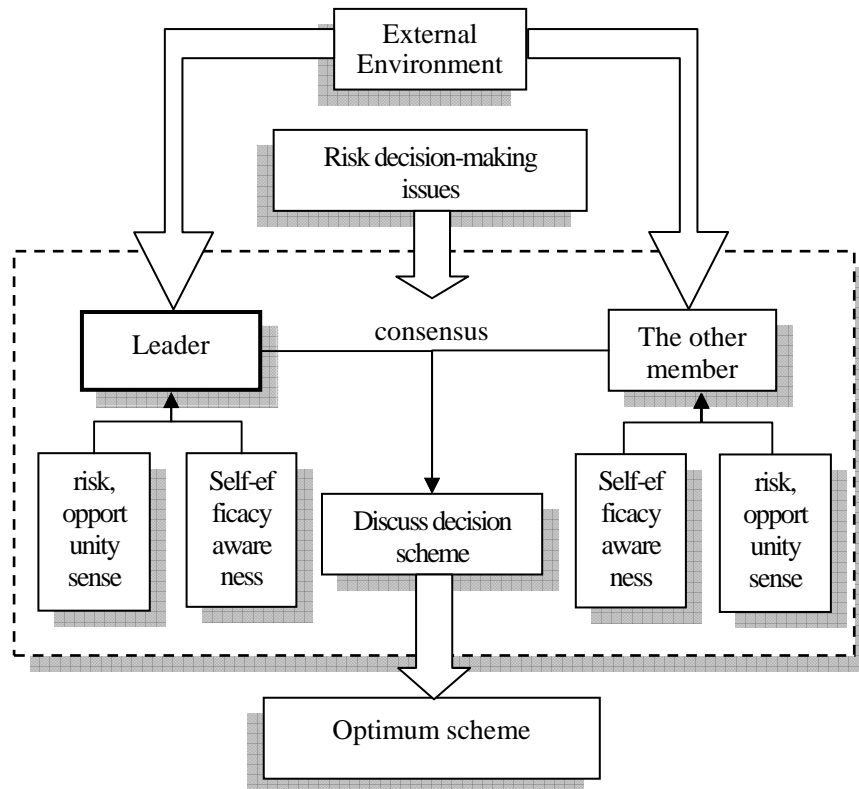
Market specialist (F) owns rich knowledge and experience of marketing, and has mentally acute or perceptive mind in market risk and opportunities. Therefore, he or she is risk neutral and has strong executive power, medium innovation and decision.

### 3 Modes of Risk Decision-making of Various Entrepreneurial Team

There is an optimum team number in the entrepreneurial teams. Bart and Nathalie (2004)<sup>[3]</sup> argue that the entrepreneurial team would undergo a hard time when their team number was seven or above. They spend too much management cost and conflict between management authority and shareholders' rights. Sanjay (1998)<sup>[4]</sup> proposes teams of 3 ~ 4 number might be a good choice because of the limited resource. Therefore, this paper mainly considers the situation of 2 ~ 4 member teams, and discusses two risk decision-making occasions: team with leader-type leader or team with harmony-type leader in each specific group.

#### (1) Mode analysis of Risk decision-making in Group of Two

On this occasion two groups are studied. I. One group consists of leader-type leader (A), and one member of technical director (C), financial specialist (D), and human resource specialist (E) or market specialist (F). II. The other one consists of harmony-type leader (B), and one member of technical



director (C), financial specialist (D), human resource specialist (E) or market specialist (F).

**Figure 2 The Democracy Type Mode of Risk Decision-making in Group of Two**

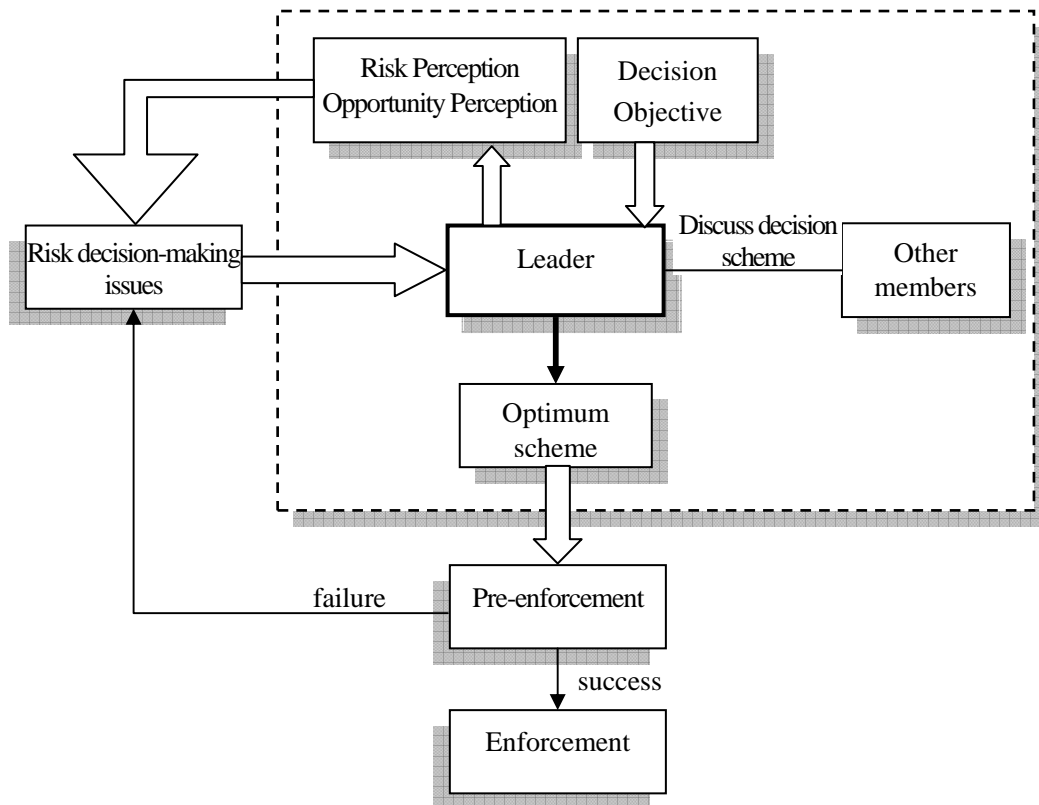
By analyzing and studying the 50 MBA in-service graduates, it is found that the group I and II are both flat team which is democratic and no leading authority. The typical mode of risk decision-making is democracy type mode. It is an open and free decision-making mode in which every member has the opinion of equality and possesses the same decision weights. In the process of decision-making members can take their own advantages, keep the same goal and reach consensus between them.

The entrepreneurial team of two numbers can be seen in the small scale venture enterprises. They do not pay much attention to internal management cost, financial affairs. In contrary, they will make great efforts in technology, market, social network and latent opportunity. As a leader, he will exploit his advantages of experience, innovation ability and give many constructive opinions to the team. However, he should not be too autocratic or he would disintegrate the cooperation with the other member. The democracy type mode of risk decision-making in group of two can be shown as Figure 2.

( 2 ) Mode analysis of risk decision-making in Group of Three

On this occasion two groups are studied. III. One group consists of leader-type leader (A), and other two members of technical director (C), financial specialist (D), and human resource specialist (E) or market specialist (F). IV The other one consists of harmony-type leader (B), and other two members of technical director (C), financial specialist (D), human resource specialist (E) or market specialist (F). The research result shows that group III mainly has quasi-democracy type mode, and group IV mainly has democracy type mode.

In group III the leader-type leader has more influence power that makes team members being affected by his vision-driven, and makes the incompatible views on the risk decision. There is hierarchical team. The main feature of the team is that the constructive suggestions present by the group are only for leader's reference. Leader makes the final decision after he considers the opinions of other members. The more cohesion they have, the better the leader will do in the process of decision-making. The quasi-democracy type mode of risk decision-making in group of three can be shown as Figure 3.



**Figure 3 The Quasi-Democracy Type Mode of Risk Decision-making in Group of Three**

The mode of group IV is similar to mode of group II. As an organizer and coordinator in the team, the leader arouses the initiative of the team and exerts the advantage of them, making decision by the way of brainstorm. The democracy type mode of risk decision-making in group of three can be shown as Figure 4.

**(3) Mode analysis of Risk decision-making in Group of Four**

In this occasion two groups are studied. ⑤One group consists of leader-type leader (A), and other three members of technical director (C), financial specialist (D), and human resource specialist (E) or market specialist (F). ⑥The other one consists of harmony-type leader (B), and other three members of technical director (C), financial specialist (D), human resource specialist (E) or market specialist (F).

Hypothesis that the Group Four Mode is derived from the Group Three Mode, the entrepreneurial team is usually in the state of transitional period or second undertaking period. As the present team structure and skills can not meet the requirements under new opportunities for development and new challenges, the team needs an expert, such as technical director, financial specialist, human resource specialist and market specialist, who possess rich experience in the field that the team unknown. The opinions of the expert are more weighted. Before the team makes decision they will consider more from expert's advices. Therefore, the opinions of expert have high priority and more weight. That is quasi-dictatorship type mode of risk decision-making. The quasi-dictatorship type mode of risk decision-making in group of four can be shown as Figure 5.

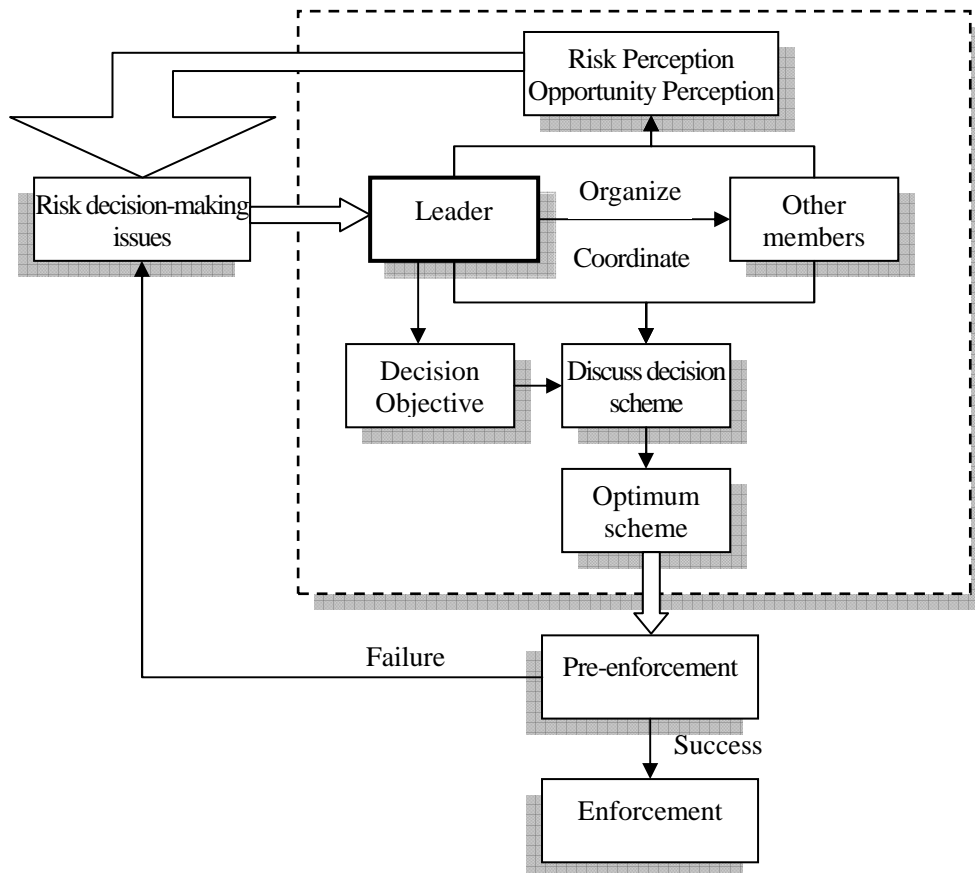


Figure 4 The Democracy Type Mode of Risk Decision-making in Group of Three

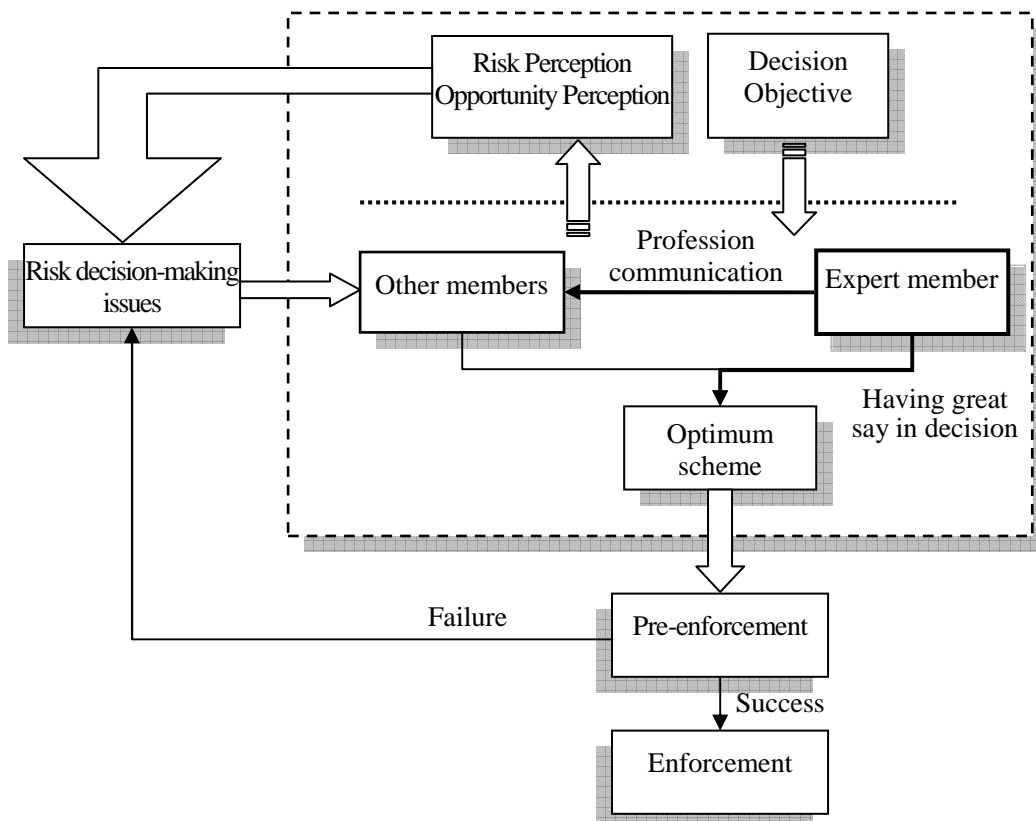


Figure 5 The Quasi-Dictatorship Type Mode of Risk Decision-making in Group of Four

## 4 Empirical Analysis – a Case of Wuhan Dongfeng Electric Vehicle Company

The Wuhan Dongfeng Electric vehicle Company was registered formally on July 28, 2003. It is the first commercial mode of electric vehicle enterprise in China. Until now the total employee has been over 400. It owns 797 electric vehicles and 415 of which are located in Beijing Olympiad Gymnasiums. The company is now in the transitional period or second undertaking period. During this period the company is confronted with many opportunities and risks with the enlargement of enterprise in scale, with the diversification of business activities and with the improvement in the internal management.

There are four point members in the company named Fu, Guo, Ji, Ying who established the company. They constitute the entrepreneurial team and participate in the discussion of important decisions of company.

We sent questionnaire to the four members in the company. The result shows that each one has his own characteristics as shown in the Tab 2.

**Tab 2 Trait identifications of the four members**

Name	Position	Risk perception	Opportunity Perception	Risk preference	Innovation Power	Executive Power	Decisive Power
Fu	harmony-type leader (B)	strong	strong	neutrality	strong	strong	medium
Guo	technical director(C)	medium	medium	neutrality	strong	strong	weak
Ji	financial specialist(D)	medium	weak	averse	weak	strong	weak
Ying	market specialist(F)	strong	strong	neutrality	strong	strong	medium

We found out that the mode of risk decision-making in the entrepreneurial team has this process: first, the leader deliberates with the market expert; second, the leader calls all the members together to hold a conference; last, the team makes the final decision. It is indicated that the team decision scheme usually similar to the decision scheme from the deliberation between leader and market expert, which means the expert more decision weights. It seems that the company pays more attention to the market issues in the transitional period.

Meanwhile, the team leader is shown in transformational leadership behavior. He posses sense of responsibility, compatibility and openness. He not only has strong intellectual flexibility, but also inspires other members to pursuit it. It helps the whole team to look upon the matter in new ways which makes the risk decision-making of entrepreneurial team taking on a characteristic of quasi-dictatorship type mode.

## 5 Conclusion

In this paper, we tried to investigate the ways of risk decision-making in the small scale entrepreneurial team. Based on our study and empirical analysis, we found that the individual psychological and self-efficacy characteristics had an impact on the each members to make decision, which could further change the ways of decision-making in their teams. Moreover, we identified 3 type modes of risk decision-making of entrepreneurial team—democracy type mode, quasi-democracy type mode and quasi-dictatorship type mode.

Hence, this study may help us to understand the risk decision-making behavior by the entrepreneurial team at a new sight of team structure and scale. However, further research should be done about how would team of larger scale force with decision-making issues, and how other factors would affect the risk decision-making.

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