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Factors influencing successor selection in China: an empirical analysis

Abstract

Eight factors were analyzed by using logistic regressions to find whether they affect family business owners to choose their children to take over the business. Of the eight factors, the number of business owners' children, the scale of enterprise's fixed assets, the type of the industries and the shares hold by the business owner do not have significant effect, so they are deleted from the model. Two factors, the owner's age and the form of company are consistent with our assumptions. Owner's age has a positive impact and the form of company plays a negative role to choose the children as the successors. However, the level of owner's education and the number of the employees become the protective factors, which are inconsistent with our assumptions.

Keywords: family business, successor selection, successor.

JEL Classification: M16.

Introduction

Succession is a "ridge" in the development of the family business, and many problems rise in the exchange of power from one generation to the next generation. Research shows that only a small fraction of family businesses could pass this stage successfully (Birly, 1986). Approximately 70 percent of all family firms are either sold or liquidated after the death or retirement of their founders, so they are also no longer belonging to the founders (Beckhard, 1983).

Chinese family business has developed for more than three decades. Although some family businesses start to consider and tackle the succession issue, most enterprises have not really entered into this process. Because of the immature practice of successor selection in China, studies about this topic are still lagging behind. Research theories and methods in this area are mostly borrowed from abroad. However, even the studies abroad about family business succession are also at the exploratory stage of research (Dyer, 1998).

Culture is an important factor that influences a nation's economy (Weber, 2001). Researchers' concern on Chinese enterprises illustrates the uniqueness of Chinese enterprises which is often attributed to the impact of Confucian culture (Fukuyama, 1995). Because of the different culture, there is a wonder: do factors that affect the succession in Western culture affect the Chinese family business in the same way?

Although there are lots of publications about successor selection, most of the researches are con-

cerned about whether to select a successor from inside the firm or from outside the firm. As to Chinese family business, incumbents are mostly concerned about whether to select a successor from inside the family or outside the family due to the "family-oriented" culture (Fei, 2007). So what are factors that influence incumbent to select successor from outside or inside family?

1. Literature review

When the family business owners are ready to retire, he or she may have a variety of choices, such as quit enterprises, end the enterprise through the liquidation, sell the company's stock if it is a listed company, or circulate funds through the family business internal management buyouts (MBO) or management buying (MBI). Family business owners can also make a positive choice, including choosing the successor to continue the family business from internal or outside the family, or from internal or external of the family business (Bleackley et al., 1996).

Researches on succession mostly focus on the large companies rather than family businesses in small or medium scale. Among the two types of successors, the external successor occurred when the newly appointed Chief Executive Officer (CEO) was not employed before the succession, and the internal successors were defined as individuals who were previously employed within the executive spans of their predecessors (Boeker & Goodstein, 1993; Dalton & Kesner, 1985; Helmich, 1974).

Factors that influence successor selection usually are classified into four levels: the individual level, the group level, the organizational level and the resource level (Davis & Harveston, 1998). Firstly, the model of individual level recognizes that certain demographic characteristics of the owner-manager can impact organizational processes, particularly the selection of successor. Secondly, at the group (family) level, in order to maintain the benefits of the clan

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family members involved in the family business tend to select successor inside the family. Thirdly, the model of organizational level suggests that larger firms are more likely to adopt formal structures and execute more complicated succession planning. Fourthly, in the resource level model the business may rearrange its plan for succession in order to get some resources from outside, such as from other financial resources.

In the individual level, some demographic factors such as the owner's age influence successor selection. Studies have shown that older business owners are more likely to deal with issues of risks and uncertainty (Carlsson & Karlsson, 1970). And, with the growth of age, business owners are more easily dominated the enterprise (Becker, 1960). Marshall (2006) studied the relationship between business owner's age and the succession plan, and drew the following conclusions: the age of business owners is positively correlated with the formulation of a formal succession plan, and negatively related to succession planning due to the way of dealing with the conflict.

In the group level, family members may be members of their firm's "upper echelon" (Bluedom, Johnson, Cartwright, & Barringer, 1994) and so, would be expected to exercise considerable influence over the choice and preparation of successors. When the clan selects a successor, it concerns more about the successor's good relationship with the family than the successor's ability (Stavrou, 1999). In Brain's (1999) model, the number of the family members as company executives and the family's right to vote determines the family control.

In the organizational level, there are two factors, enterprise performance and firm size that determine the succession choice. Enterprise performance is the mostly mentioned factor which influences family business whether to select an internal or an external successor (Guest, 1962; Grusky, 1963; Gamson & Scotch, 1964). As to the relationship between enterprise performance and successor selection, there is no agreement among the researchers. Some researchers have established clear logical relationship between the enterprise performance and selection of internal or external successors, and the studies support that poor organizational performance is associated with the selection of a CEO from outside the firm (Boeker & Goodstein, 1993; Canella & Lubatkin, 1993). These researchers' findings are often questioned or challenged, so a number of researchers further expand the logical relationship between enterprise performance and successor's selection through the introduction of intermediate variables. For example, some researchers regard the shares the business leaders possess as the intermediary variable to analyze the relationship between performance and the successors

turnover (Boeker, 1992; Boeker & Goodstein, 1993). In addition, the size of the business, the former leader's age, the composition of the board and the corporate external equity are also regarded as the intermediate variable and their relationships were analyzed (Smith, 1999). Results show that there are not causal relationship between enterprise performance and successor selection. For example, Friedman and Singh's (1989) found that it was impossible to establish an association between the poor performance and CEO successor's origin. Dalton & Kesner (1985) found mid-range performers are more likely to select outside CEO candidates, which may offer some support for the inertial perspective by demonstrating that poorly performing organizations are resistant to significant organizational change.

Firm size is another factor at the organizational level that affects successor selection. Lauterbac's (1999) study shows that, in the United States, large-scale family businesses tend to choose successor from the outside, and they think that the external successor could help improve performance, and the internal successor cannot do it. The large-scale family enterprises have more opportunities than small enterprises in the high-level manager training and development and the succession planning are more normal and complicated (Helmich, 1977). Thus, the large-scale family businesses often have more qualified potential successors. Even though the small businesses have some potential senior manager candidates, they are easily lured away by the large enterprises. In addition, the large-scale family businesses often have the methods to hire outside consultants to analyze family business succession issues and come up with constructive comments which make the succession process smoothly. This way the large-scale family businesses hire a more qualified, more experienced successor to ensure the success of succession (Chaganti & Malone, 1991). Although Davis and Harveston (1998) in their model didn't get the satisfactory results to draw the relationship between the firm size and the succession, they consider the size of enterprise as an intermediary variable that is likely to affect other environment variables. However, Schwartz's (1985) study has found that there is no necessary relationship between the size of the business and the kind of successors.

In the resource level, in order to ensure survival into succeeding generations, family business may partly stem from the need to gain access to capital. When the organization depends on particular sources of capital rises, the family creates structures and processes that legitimize its organization in the eyes of resource providers (Poza, 1989).

Industry environment is another factor which is often mentioned as a determinant. There are many

cases about the relationship between external environment and the type of the successors. Scheter (1980) and Schmalensee (1985) stress that the industry environment is an important factor that affects a company's decision-making (including to decide the successors). The topic of relationship between industry environment and successor selection is firstly suggested by Thompson (1967), who argues that organizations that fail to buffer themselves from external uncertainty may be ripe for succession. Osborn and Hunt (1974), Tosl, Aldog and Storey (1973), among others, have divided the environment into task, industry and socioeconomic. Volatility in any of the three segments may induce succession. In addition, Deepark's (1998) research suggests that industry structure plays an important role in explaining the characteristics of the successors. In particular, the more different the industry products are, the more vague the problem to be dealt with, and then the more important it is to put forward innovative solutions and evaluated measures from a multi-dimensional vision. Therefore, successors can rarely rely on the past experience, and in such an environment, the successor is required to have a good educational background and be more open minded. On the other hand the higher the industry growth rate is, the younger is the successor.

Family business is deeply marked with the stigma of family on all major issues because it is a blend of family and business. In general, in the family business the more family members are hired, the higher their position is, and the more important roles they played in decision-making (Dyer, 1986; Astrachan, 1988). Family members play an important role in decision-making, and the sign is that "the number of their hired as employees" and "investors as family business" (Gundry & Welsch, 1994) rather than a general reluctance family shareholders elected members of the family as a successor, and more inclined to choose a non-family members as successors (Smith, 1999).

2. Theoretical analysis and research hypothesis

Studies in the West about succession of family business usually divided successors into internal and external successor, but in the "family-oriented" Chinese society, it should be more practicable to divide successors into those from inside the family than those from outside the family.

In small private firms, the CEO (or the principal founder in the first generation of the firm) is generally the main decision maker and controller (Kelly et al., 2000), and can directly influence organizational processes and outcomes (Nordqvist and Melin, 2002). The CEO may actively block or retard succession decision-making (Lansberg, 1988) for

lifestyle, psychological and/or behavioral reasons. A number of studies explored the personality characteristics of entrepreneurs and their impact on the organization. Pfeffer (1983) thinks the statistical aspect of family business owners affects the succession.

The statistical aspect of the family business owners that may influence the selection of successor is age. The older the business owner is, the more he considers about his successor, and the more he considers his own children as the successor (Lansberg, 1999; Morris et al., 1997; Westhead & Cowling, 1997).

Hypothesis 1: The age of entrepreneurs is positively related to the choice of a child in family business succession.

To choose others rather than his own child especially people outside the family as the successor of the firm, the owner may encounter many problems due to the existing system constrains or the limited knowledge about how to regulate the successor's behavior. Therefore, even if the objectives and enterprise development are in the same direction, there is no guarantee that this goal can be realized, and something unexpected can lead to different results (North, 1994). Thus, when the family business owners have a considerable level of education and have the knowledge about modern enterprise system, they are more open-minded and they are more likely to choose an outsider as the successor, and less likely to choose their own children as the successor.

Hypothesis 2: The education level of owner is negatively correlated with the choice of his own child in the family business succession.

Family business owners with large stock share are more willing to select family members to take over the family business than the outsiders resulting from the fact that they think such a choice is beneficial to accumulate social capital resources and unique knowledge for the family (Bjuggren & Sund, 2001). Also suggest that the owners of family companies are motivated to select an intergenerational succession if they believe this succession is more efficient.

In Chinese family business, since large family gradually disintegrated, the monomer family replace the traditional large family and becomes the main form in Chinese family structure. The relationship between different members inside the monomer family is strong, but that between different monomer families inside a clan is weak, so the family business owners are more willing to choose their child rather than the child of their relatives.

Hypothesis 3: The percentage of stock shares owner holds is positively correlated with the choice of a child in the family business succession.

In China's family business the owners mainly range between 33-57, accounting for 87.5% of family business owners (China Federation of Industry, 2007), and most of them only have one child due to the one child policy practiced around 1980s. Given the small number of children in one family, there is a limitation for the family business owner to choose his own children as the successor. Generally speaking, the more children they have, the greater is the possibility the owner to select his own child as successor. Thus, we assume that the more the number of children are, the greater is the possibility for the family business owner to choose a child as the successor.

Hypothesis 4: The number of children is positively correlated with the choice of a child as the family business successor.

The company board impact family business owners in choosing a successor. Ranft and O'Neill (2001) asserted that the board of directors can provide the entrepreneur with incentives to develop successors and to leave the firm.

In order to make enterprises more systematic to access to useful and objective recommendations, some family business choose an external person as an independent directors in the board (Hoy and Verser, 1994). They can influence decision-making outcomes within organizations, by developing operational schemes (i.e., creation of a family council) (Leach, 1994; Morris et al., 1996), which differentiate family dynamics from business operations (Davis & Stern, 1988). The existence of independent directors often has a positive effect on family businesses to choose his successor (Westhead, 2003).

The more standardized form a family business adopts, the more are the requirements of the Companies Act are. In accordance with the requirements of the Companies Act, Limited corporation should set up board of directors, and board members should include the workers of the company. With the number of listed family business increasing, these family businesses have to recruit more independent directors.

Hypothesis 5: The organizational form of company is negatively correlated with the choice of a child in the family business succession.

Lauterbac's (1999) study shows that in the United States large family business owners tend to choose a successor from outside. In Europe, the enterprises are classified based on the number of enterprise employees so the enterprise is divided into: mini-enterprises (1-9 employees), small enterprises (10-49 employees), and the medium-sized enterprises (50-249 employed) (Bridge et al., 1998).

When the family business owners choose the way of succession, in fact, they are choosing a favorable

way in which the money will be left to the next generation. If it is small-scale enterprises, it is relatively easy to operate, and more likely to pass on the treasure to their own children. If enterprises are large in scale, they are more likely not to pass the firms to their own children, because their children are less capable of running the business. If the owners pass on the family business to their children regardless of their offspring's abilities, it may lead to collapse of their family business. Therefore they prefer leave their children to keep the shares of enterprises, and allow people outside the family to run so that it is in line with the best interests of children.

Hypothesis 6: The enterprise-scale is negatively correlated with the choice of a child in the family business succession.

Organization is an open system impacted by the environment (Thompson, 1967). The external environment impacts the survival, the development of the family business behavior and its performance (Hannan & Carroll, 1992). However, family business owners rarely consider when to choose its successors. Without considering a company's external environment, a family business owner cannot predict its future, so family businesses may encounter some unpredictable risks that cause the company backfires.

In order to consider uncertainty issues, the successors are required to have strong learning ability, especially in such as rapid changing industry circumstances. In addition, the successors are expected to be able to adapt to the external environment of enterprises is in high demand. But sometimes the business owners' children don't have the ability. Wang An computer's case illustrates this problem. Therefore we have chosen the IT industry which is full of uncertainty and other industries for our analysis. IT, an industry with fast changes, has higher demands on the successors, so it is likely to choose outside to take over the family business if their own children are incapable of this position.

Hypothesis 7: The industry which is full of uncertainty is negatively correlated with the choice of a child in the family business succession.

3. Data and methods

When in a field the practice and theoretical study is in the developmental and exploratory stage, the analysis of statistical information may has a certain reference to the future study. Although Carsaid, Gaglio, and Kernochan (1993) have warned against the possible dangers of using demographic data, they also point out that demographic data have been the cornerstone of research identifying areas needing further investigation.

3.1. Sample selection. The questionnaires were designed based on the studies of other researches and the interviews with the owners and successors. After a test-investigation, the questionnaires were modified to make it easier to be understood and then large-scale release was carried out. Because successor selection is a sensitive topic, and using random sampling is very difficult to guarantee the recovery rate, the questionnaires were mainly released to students of some relevant training institutions universities. The following are the channels where student participants were located:

1. Students in City College Zhejiang University, Beijing University of Posts and Telecommunications, Wenzhou University. The students, whose parents possess enterprises, were asked to fill the questionnaires independently and were told to ask their parents to fill the questionnaires as well. Through this way we got questionnaires answered by the family enterprises mostly in the southern part of China.
2. An organization in Beijing, which organizes the entrepreneurs to go abroad. The members of the agency are mainly family business owners in the northern part of China. In this way, we can collect questionnaires answered by the family business from the northern part of China.

Although the questionnaire is mainly sent to some organizations, rather than a nationwide sample, we take consideration of the proportion of the number of family business in the northern and the southern part of China. Besides, family business owners in these organizations are also from all around the country. Therefore the samples could meet the demand of random selection. The number of family business owners' questionnaires is 100, 61 of which are valid.

3.2. Research variables. *3.2.1. Explained variable.* Most family businesses prefer the internal continuity and pass the management control of enterprises to the next generation (Lansberg, 1999). Therefore, most family business owners pay more attention to intra-family transmission.

With the influence of traditional cultural of "son inherited a firm from his father", usually owner's child will be chosen as the successor by the majority of family businesses in China (Chen, 2003). Thus, the explained variable is defined as whether or not the owner to choose their own children as successor. And this variable is a dichotomous variable: to choose child as a successor is set to 1; otherwise is set to 0.

3.2.2. Explanatory variables. The list of explanatory variables is presented below:

- ◆ The age of owner in family business (Age). It is a continuous variable, gotten by 2008 deduct the owner's actual birth year.
- ◆ The number of business owners' children (Child Number). It is a continuous variable. This variable is the total quantity of the number of sons and daughters of the family business owner.
- ◆ The educational level of business owner (Education). It is a classified variable, and referred to the actual educational level of family business owner. In our questionnaires, this variable is classified into four classes: middle school and below; high school, secondary school and technical school; college or undergraduate; Graduate School and above. Due to the quantity restrictions of the questionnaire, we integrate the four options to two options: education lower than college is set for 0, education including or higher than college is set for 1.
- ◆ Corporate form (Form). There are five kinds of family business forms: enterprises owned totally by the owner, partnerships, limited liability company, Ltd. and listed companies. The number of limited liability company, Ltd family business has increased dramatically during the past ten years in China. And some large-scale family business has got listed on the stock market in Shenzhen, Hong Kong GEM and overseas. Although the number of the family business listing in recent years greatly increased, the proportion of these companies is still relatively small. Company form is a classified variable. Because there are not listed companies in our investigated companies, we set totally owned enterprises, partnerships for 0, and Limited Liability Company and Company Limited for 1.
- ◆ The scale of enterprise fixed assets (Capital). The scale of the family business is measured from the perspective of the fixed assets and the number of the employees. Fixed assets, the size of the enterprise is the classified variable. We will divide the fixed assets into three levels: 10 million and below is set to 0; 10 million-100 million between is set 1; more than 100 million is set to 2.
- ◆ Number of employees (Staff). It is a classified variable, 100 people and below is set as 0, 100-500 is set as 1, and more than 500 is set as 2.
- ◆ The industries (Industry). It is a classified variable. In the questionnaire, we divided it into 16 sectors according to the industry classification and the code of our national economy (GB/T 4754-2002). Here we focused on the differences between IT industry and non-IT industry. Non-IT industry is set to 0; IT industry is set to 1.
- ◆ The shares hold by the business owner (Share). It is a classified variable. Shares hold less than 50% is set to 0, those hold more than 50% is set to 1. When dealing with the missing values, a sample is usually randomly selected, and plural interpolation for classification variable is used.

Table 1. Factors on which entrepreneur chooses a successor

| Factors | Variable | Introduction | Direction |
|----------------------------|--------------|--|-----------|
| Age of owner | Age | Continuous variables | + |
| Number of owner's children | Child number | Continuous variables | + |
| Education level of owner | Education | Non-tertiary education = 0; Access to higher education = 1 | - |
| Corporate forms | Form | Owned enterprises, partnerships = 0; Limited Liability Company and Company Limited = 1 | - |
| Scale of fixed assets | Capital | 10 million and below = 0; 10 million ~ 100 million = 1; More than 100million = 2 | - |
| Number of employees | Staff | 100 people = 0; 100-500 = 1; More than 500 = 2 | - |
| Industries | Industry | Non-IT industry = 0; IT industry = 1 | - |
| Shares hold by owner | Share | Holding less than 50% = 0; Holding more than 50% = 1 | + |
| Results | Succession | Dependent variable: choice of other successors = 0; the enterprise to their children = 1 | |

Notes: + expresses that the variable has positive impact on the owner to pass the firm to his or her own children; - expresses that the variable has negative impact on the owner to pass the firm to his or her own children.

4. Results

4.1. Descriptive statistics. *4.1.1. The gender distribution of family business owners surveyed.* Table 2 presents gender distribution of family business owners.

Table 2. Gender distribution of business owners

| | | Frequency | Percent | Valid percent | Cumulative percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | Male | 41 | 67.2 | 77.4 | 77.4 |
| | Female | 12 | 19.7 | 22.6 | 100.0 |
| | Total | 53 | 86.9 | 100.0 | |
| Missing | System | 8 | 13.1 | | |
| Total | | 61 | 100.0 | | |

The sex ratio of male to female of business owners surveyed is 7:2, compared to 85:15 which is surveyed by China Federation of Industry¹. So the ratio of male to female in our survey is reasonable.

4.1.2. The age distribution of family business owners surveyed. Table 3 gives age distribution of family business owners.

Table 3. Age distribution of family business owners

| | Age | Frequency | Percent | Valid percent | Cumulative percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | <35 | 3 | 4.9 | 4.9 | 4.9 |
| | 36-40 | 10 | 16.4 | 16.4 | 21.3 |
| | 41-45 | 15 | 24.6 | 24.6 | 45.9 |
| | 46-50 | 20 | 32.8 | 32.8 | 78.7 |
| | 51-55 | 6 | 9.8 | 9.8 | 88.5 |
| | >56 | 7 | 11.5 | 11.5 | 100.0 |
| Total | | 61 | 100.0 | 100.0 | |

The age of family business owners surveyed is mainly between 36 to 50 years old and the proportion of this group reached 83.6%. This result basically is consistent with the results of the survey reported by Chinese Private Sector Survey Report in 2006 (business owners' age focused on the age 33-57, accounting for 87.5%)².

4.1.3. Firm size. The fixed assets of family business surveyed are mainly between 5-100 million yuan. Each of the number of family businesses whose fixed assets are 5-10 million yuan, 10-50 million yuan, 50-100 million yuan is 15, accounting for 24.6%. The number of family businesses, whose fixed assets are less than 5 million yuan, is 10, accounting for 10.4 percent. While each of the number of the family business, whose fixed asset is 100-500 million yuan, or more than 500 million Yuan are relatively small, only 3, accounted at 4.9%.

4.1.4. The industry distribution of family business surveyed. In the investigated family business, the wholesale and retail industries enterprises possess the largest number (13), followed by manufacturing (12) and information transmission, computer services and software industry (10), then came the real estate industry (6) and transportation, storage and postal industry (6), followed by construction (4), agriculture, forestry, animal husbandry and fisheries (4), electricity, gas and water production and supply industry (2), culture, sports and recreation (2), water conservancy, environment and public facility management industry (2).

4.1.5. The amount of business owners' children surveyed. Figure 1 below presents the amount of business owners' children.

¹ China Federation of Industry (2007). *China Private Economy Yearbook 2004-2006.6*, Beijing: China Public Press.

² The same as 1.

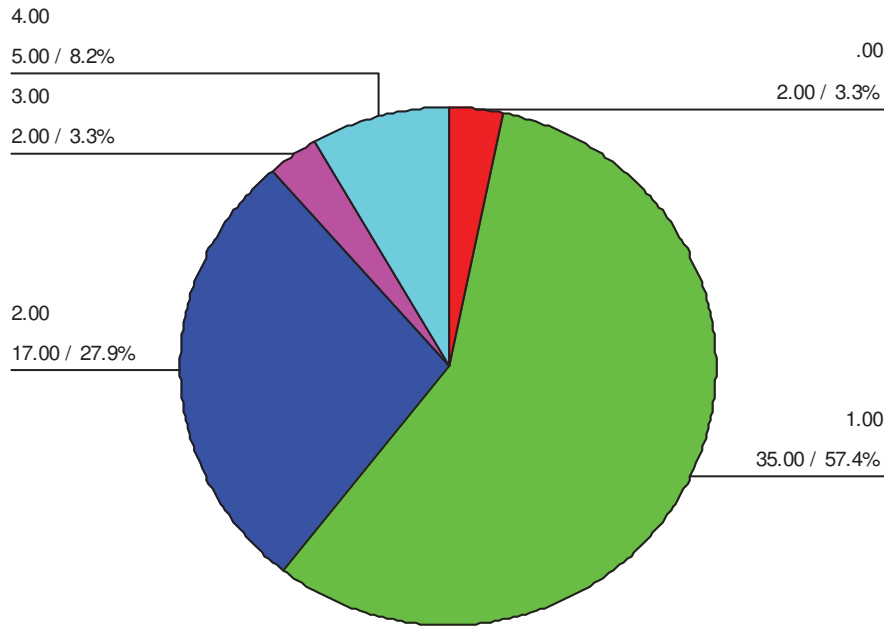


Fig. 1. The amounts of business owners' children

The number of the child of family business owners surveyed is up to a maximum of four (a total of 5 persons, 8.2 percent); the minimum number of children is 0 (a total of 2 persons, 3.3 percent); most business owners has one child, with a total of 35 person, accounting for 57.4%; and those who have two children is with a total number of 17 people, accounting for 27.9%.

4.2. Logistic regression analysis. The impact of the factors on the results of successor selection is examined by logistic regression. Logistic regression is a commonly used method to reflect the relationship between explained variable and a number of factors in the social sciences and medical research, and also is a commonly used method to analyze explained variable when it is a dichotomous variable (Guo, 1999).

According to family business succession issue, the following dichotomous variables are concerned: the choice of a child as successor is set to 1; the choice of an outsider as successor is set for 0.

Eight factors which affect the choice of family business successors are concerned: the age of the family business owners, the number of business owners' children, the education level of business owners, corporate forms, scale of enterprise fixed assets, the number of employees, the industries of the family business and shares hold by the business owner. And these 8 factors were recorded as: X_1, \dots, X_8 .

Then the logistic regression model is as follows:

$$P = \frac{\exp(\beta_0 + \beta_1 X_1 + \beta_2 X_2 \dots + \beta_m X_m)}{1 + \exp(\beta_0 + \beta_1 X_1 + \beta_2 X_2 \dots + \beta_m X_m)}$$

Among them, β_0 is known as the constant term; β_1, \dots, β_m are called the regression coefficient of the logistic regression model. Usually the largest log-likelihood estimation method is used to estimate the parameters in the model (Zhigang Guo, 1999).

In Probability theory, the odds mean a probability of a result whether to happen or not; odds ratio (OR) refers to the ratio of the odds of the two results. In logistic regression, when the independent variable changes a unit, the odds ratio changes as follows:

$$OR_i = \exp(\beta_i),$$

where β_i is the number of changes when the independent variables i changes a unit. From it, we know that when $\beta_i = 0$, the independent variables X_i has no impact on whether it has positive results; and $\beta_i > 0$, the independent variables X_i is benefit to whether it has positive results, known as protective factors; $\beta_i < 0$, the independent variables X_i is adverse to whether it has positive results, known as impeding factors.

We use the backward method to select meaningful variables: first of all the variables are put into the regression model, and then the variable without statistical significant are deleted one by one. The significance level is set as 0.05, that is, if it is below the significant level, the relevant variables are removed from the regression equation.

The following are the results of regression. 61 questionnaires were distributed, of which 5 have not yet been answered, so in fact 56 cases are used to set the model. 4 variables were deleted by backward method: the number of business owners' children, the scale of enterprise fixed assets, the industries and

the shares hold by the business owner. It is shown in the table below. It can be seen that, when these variables are deleted, p values are up to 0.05. It shows that the model we got by deleting the four variables has no differences from the previous model, so the deleting is reasonable.

Table 4. The process of selecting variables

| Step | Effect | Freedom | The variables' number in the model | Chi-square | P-values |
|------|--------------|---------|------------------------------------|------------|----------|
| 1 | Share | 1 | 7 | 0.0353 | 0.8509 |
| 2 | Child number | 1 | 6 | 0.0844 | 0.7715 |
| 3 | Industry | 1 | 5 | 0.2005 | 0.6543 |
| 4 | Fixed asset | 1 | 4 | 0.1644 | 0.6851 |

$$\ln\left(\frac{P(\text{succession} = 1)}{1 + P(\text{succession} = 1)}\right) = -5.7036 + 0.1609 \times \text{age} + 2.2568 \times \text{edu} - 2.8151 \times \text{form} + 1.6655 \times \text{staff} .$$

From the symbols of the explanatory variable coefficient, it can be seen that age and education are protective factors, and the number of employees and corporation form are negative factors. The following table shows that regardless of negative or protective factors, their odds ratios were significantly different from 1. The impact direction of age and corporation form is consistent with the theoretical prediction: the age plays a catalytic role on the choice of children as successors, and the company form played a hindering role. However, education and the number of company have become protective factors, which is inconsistent with our expectation.

Table 6. Odds ratio estimates *t*

| Effect | Point estimate | Of 95% confidence Interval lower limit | Of 95% confidence Interval upper limit |
|-----------|----------------|--|--|
| Age | 1.175 | 1.029 | 1.341 |
| Education | 9.552 | 1.078 | 84.635 |
| Form | 0.06 | 0.005 | 0.763 |
| Staff | 5.288 | 1.047 | 26.708 |

Discussions

Interpretation of study results. Logistic regression is used to test whether the eight factors affect family business owners' choice their children to take over the business. Of the eight factors, the number of business owners' children, the scale of enterprise's fixed assets, the industries and shares hold by the business owner have no significant effect on whether family business owners to choose their own children as a successor, so they are deleted from the model.

China's family business has relatively short history, and it is still at the early stage in introducing the modern enterprise system. So unlike the family business in the West, China's family business owners do not make important decision (e.g., choice of successor) based on the shares held. In China's fam-

The variables, age, education, corporate form and number of employees are selected and remain in the model, as shown in Table 5. It can be seen that these four variables are significant at level of 0.05 and the overall model is also significant.

Table 5. The final selected model

| Variable | Freedom | Estimated value | Standard error | Chi-square value | P-value |
|-----------|---------|-----------------|----------------|------------------|---------|
| Intercept | 1 | -5.7036 | 3.1136 | 3.3556 | 0.067 |
| Age | 1 | 0.1609 | 0.0677 | 5.6571 | 0.0174 |
| Education | 1 | 2.2568 | 1.1131 | 4.111 | 0.0426 |
| Form | 1 | -2.8151 | 1.2985 | 4.6997 | 0.0302 |
| Staff | 1 | 1.6655 | 0.8263 | 4.0626 | 0.0438 |

The form of the final model selected is as follows:

ily business, the business owner has absolute authority on the issues in the enterprise, which reflects in the choice of successor. So they will decide in accordance with the wishes of their own to choose the successors. In general, the business owners will always select the "son who inherited the business from his father's" (Lansberg, 1999).

The number of family business owners' children is rejected from the model. Whether to choose their children to be the successor may be affected by the subjective factors, such as the willing of their children taking over the companies and the child's ability, and so on. The selection will not be affected significantly by how many children the owner has.

The results of the logistic regression testing show that the industry, whether it is IT industry or not, has no causal relationship with whether or not business owner choose their own children as successors. China' IT industry is still in its early stage of development, and has low demands on the ability of successors of the family business, so it is acceptable to select the owner's child to be successor.

There is no causal relationship between the enterprise fixed assets and the business owners' choice of their own children as their successors. The reason for this may rely on the fact that business owners do not want to give a true data of the scale of enterprise assets. In our recovery process of the questionnaire, we found that the business owners tend to answer smaller fixed assets than their real scale.

The four variables including age of business owners, corporate forms, the education level of the business owners, the number of employees are proven to be related to family owner's choice of their successors. Among the four variables the impact of age and the corporation form on choice of the successors are

consistent with the hypothesis. The age has a positive impact on the choice of their children as successors, and the company form played a negative role.

The older are the business owners, the more likely they will choose their own children. When the owner is old, he or she usually has a detailed plan about succession, and a clear thought of who will be the successor, and usually the successor is his or her own child. But owners aged of 40-year-old are willing to pass the enterprises to others, even the persons outside the family.

The enterprises with more standardized form may not choose the children as the successors, and the Limited Liability Company and Company Limited may pass the company to outsiders. The standardized form is the major key for passing the company to an outsider for the business owners has confidence to ensure their own interest and family income with others to operation and manage their corporations.

However, the level of education and the number of the employees become the protective factors, which are inconsistent with our assumptions.

In Hypothesis 2, we believe the owners' education level is negatively correlated with the choice of their own children in the family business succession. The assumption that business owners will be more open-minded because of their higher level of education and therefore will accept non-children successors is rejected. The effect of "family-based" may be more important than the openness the education brings.

In our assumptions, we think that the larger the number of employees is, the greater the difficulty to govern the family business, therefore the family business owners will not choose their children to take over and perhaps will choose somebody else. However, the empirical studies have proved that the family enterprises may choose their children to take over the family business when the family business is small for the business owners' own children can manage it. Thus, in this scale, the business owners choose their children to take over the enterprises by training them. And this is also verified by our interview that the owners of small family business usually don't want their children to continue their business because they think they have done their business tediously. But owners of big firms do want their children to continue their business.

Implications

The results show that the "son inherited the firm from his father" tendency is still dominant in China's family businesses, and the age of business owners is verified as the protective factors. Although the child number and the shares hold are confirmed without obvious correlation to the choice, and education and staff number become the protective factors that lead

to family business owners' choosing their own children as the successors. When the "son inherited the firm from his father" is likely to become the majority model to choose family business successor, it requires the family business owners to train their children and make succession plan as early as possible.

The first-generation family business owners in China do their business with trials and tribulations. In the process, they have to invest more energy and time than others, and have high education attainments, so they barely have time or energy to train their children. But when they found they are old and need their children to take hold of the business, their children are not competent for this demand, which the most Chinese second-generation successors are currently facing. In the Asian culture, the mother plays an important role on dealing with the relationship between father and son (Janjuha-Jivraj, 2004).

In our interview, forty-years-old family owners generally do not concern the issue of succession, even showed impatience when surveyed. When asked whether to choose a child as the successor in the future, many entrepreneurs, in this age, easily say that if their children are not competent for this job, they will choose an outsider. We do not know whether they could answer easily ten years later when we re-interview these enterprises. But the results of the empirical analysis indicate that older entrepreneurs more willing to choose their own children as the successors. Of course, such a result does not necessarily mean that when these forty-years-old entrepreneurs are fifty or sixty years old will be inclined to choose children to take over the enterprises, but it at least reminds entrepreneurs to make succession plan as early as possible, especially they should pay attention to their children's education and training.

Limitations

First, because of the sensitivity and specificity of the study, the number of samples we are able to collect is relatively small. Due to the limited sample size, we classified as possible in the classification of the interpretation variables to ensure the feasibility of the statistical analysis.

Second, because we want to understand the family business owner's choice of their own children to successes the family business, we choose the logistic regression testing in the statistical analysis, to verify the eight variables' impact on the succession. Undoubtedly, in addition to these variables there are still other factors which affect the family business successor selection. And due to the limited sample size, in this study, we did not consider the interactive effects of second order and above it.

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