Research on the Relationship Between Entrepreneur Human Capital and Entrepreneurial Performance

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The performance of entrepreneurial enterprises is mainly due to the ability level of entrepreneurial entrepreneurs and their productive efforts. This paper firstly discusses how to solve the entrepreneurs’ capacity problem. For different ability of entrepreneurs, the paper establishes information screening model to eliminate the asymmetric information of the entrepreneurial capacity between venture investors and entrepreneurs. Its aim is to choose a really good entrepreneurial entrepreneur and promote the performance of entrepreneurial enterprises. Secondly, the paper discusses how to solve entrepreneurs’ productive efforts problem. The paper mainly studies on the following aspects that are entrepreneurs’ gains, entrepreneurs’ control right, the need for reputation, and supervision and restraint mechanisms. At the same time, the paper researches on the impact of entrepreneurial productive effort on entrepreneurial performance. At last, the paper discusses the mutual influence between entrepreneurs’ competence and their productive effort, as well as the transformation of each other under certain conditions.

Keywords: entrepreneur, human capital, entrepreneurial performance, entrepreneur capacity, productive efforts

In the current era of knowledge economy, innovation ability has become the key to economic development. International competition comes down to the competition between intellectual resources and human capital. The key to success depends on whether human capital can be internalized into the institutional elements, thus to fully stimulate the enthusiasm of the owner of human capital and creativity (Schultz, 1992). High-tech start-up enterprises rely on the means of production which is mainly human capital. Strategic resources are become information, technology, management talent, and so on. Human capital occupies a large proportion in the total investment in enterprises. The dependence on the talents (entrepreneurial spirit of the management personnel and professional and technical personnel) is very strong. The human capital’s contribution to the growth of the enterprise is more and more big. The condition of human capital and its utilization efficiency are crucial to the success or failure of venture capital. The famous economist Schumpeter pointed out that the entrepreneur is the engine of economic development and is the source of economic development. The history of contemporary world economic development shows that entrepreneurs are a kind of special human capital in economic development. For venture capital, the impact of entrepreneurs on the start-ups is very large. “Invest in the second-rate technology and the first-class business talent is better than to invest in the first-class technology and the second-rate business talent company”, which is a golden rule for venture capital industry (Xie & Song, 2017).

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Therefore, the development and management on entrepreneur human capital has a great significance to promote the development of a country’s economy.

This paper sets the function of enterprises that is to achieve efficiency, and achieving fairness and other functions is by the government. Therefore, the entrepreneur’s primary function is the pursuit of business performance, evaluation of entrepreneurs and rewards and punishments are based on business performance. The performance of the enterprise comes from two internal variables: the entrepreneur’s ability level and the entrepreneur’s productive effort. Meanwhile, it is also related to the external factors such as quantity and quality of resources and random factors of the environment. Variables work together on firm performance (Yang & Xu, 2017). This paper discusses how to address entrepreneurial competencies and their productive efforts and their relationship to business performance, and discusses the interplay between the two.

The Level of Entrepreneur’s Ability

Many scholars believe that entrepreneurs are the most important for the entrepreneurial enterprises. Entrepreneurs’ abilities, such as management ability, marketing ability, risk prediction ability, and technological innovation ability, have a huge impact on the future success of the enterprises. The ability to correctly and effectively evaluate entrepreneur’s competence is an important factor affecting the performance of entrepreneurial enterprises. Whether to correctly and effectively evaluate the ability of entrepreneurs is an important factor affecting the performance of enterprises. From the perspective of agency theory, that is how to overcome the adverse selection problem caused by the prior information asymmetry. This is because the ability of entrepreneurs in most cases is private information, as there is no general business history as a reference, and the ability is difficult to identify. Therefore, efforts should be made to take various measures to obtain information and improve its effectiveness to solve the problem of hidden information. At the same time, entrepreneurs have the enthusiasm to show their true information and their ability level (Sahlman, 1988). It can set up information screening model for entrepreneurial entrepreneurs with different abilities, and establish optimal contract arrangement for entrepreneurs with different abilities (Liu, 2009).

When venture capital is introduced into the venture enterprises, venture capitalists will be given part of the control and residual claims as the price. Therefore, entrepreneurial entrepreneurs of different abilities are very concerned about the proportion of residual claims $\mu_E$ and control rights $\eta_E$. While high-ability entrepreneurs pay more attention to the proportion of control rights, low-ability entrepreneurs pay more attention to residual claims. More generally, there are $\mu_{E2} < \mu_{E1}$, $\eta_{E2} > \eta_{E1}$. In entrepreneurial investment, the observable variable has only the final output $\pi$. For different $\pi$, the entrepreneur has a psychological expectation value for $\mu_E$, $\eta_E$, thus deciding a certain utility function $U(\mu_E, \eta_E)$. Therefore, with $\pi$ as the $x$-axis and $U(\mu_E, \eta_E)$ as the $y$-axis, it can establish a coordinate system, and in the coordinate system, we can get the equal utility curves of entrepreneurial entrepreneurs with different abilities. And there are the only separation equilibrium solutions about high-capacity and low-capacity entrepreneurial entrepreneurs.

The aim of venture capitalists and entrepreneurial entrepreneurs is designed to maximize their own deterministic equivalent income. First of all, the venture capitalists will decide to invest and must ensure that the investment will maximize its deterministic equivalent income, that is, to make $\text{Max}E_{VC}$. And enabling
entrepreneurs to participate in venture capital investment activities, it must meet two conditions: The first is the participation constraint (IR), that is, the deterministic equivalence income of entrepreneurial entrepreneur involvement in venture capital investment should be greater than the income (opportunity cost) of the selected selling technology, and employed by other firms, that is IR $E_E$. The second condition is incentive compatibility constraint (IC), that is, the optimal equivalence income of $\pi^*, \mu^*_E, \eta^*_E$ obtained by entrepreneurial entrepreneur should be greater than the deterministic equivalence of any $\pi, \mu_E, \eta_E$. And also, it should be greater than the use of other means of financing (such as loans) income, at this time, there is IC $\text{Max}E_E$. In this way, the model of optimal residual claim and control arrangement between venture capitalist and entrepreneur can be obtained, and the corresponding combinations of $\gamma$ (entrepreneur ability), $\mu_E$, and $\eta_E$ of different ability entrepreneurs are obtained, and identify the entrepreneur’s ability. In this way, it can eliminate the asymmetry information between venture capitals and entrepreneurs on the ability of entrepreneurs, but also be conducive to the choice of really good entrepreneurial entrepreneurs, and promote entrepreneurial enterprises to improve performance.

The Productive Efforts of Entrepreneurs

The factors influencing the entrepreneurial entrepreneur effort include the following: the income of the entrepreneur, the size of the control of the entrepreneur, the need of reputation, and the supervisory and restraining mechanism; these aspects work together on entrepreneurial productive efforts.

Entrepreneurs’ Gains

Due to the high degree of uncertainty in the start-up enterprises, the management, technology, and market problems are very complicated. The problem of the information asymmetry and the moral hazard between the principal-venture capitalist and the agent-entrepreneur is serious, thus leading the difficulties of the principal supervising the agent. Moreover, the interests of the two are non-complete consistency, and also make it possible for that the agent may be in their own interests at the expense of the principal interests. Therefore, we must establish an effective remuneration mechanism to regulate the agent’s business behavior, to ensure that the operator does not deviate from the profit maximization goal, so that the entrepreneur will be from the self-motivation to act in line with the interests of the principal action, that is to achieve the compatibility between the principal interests and the interests of entrepreneurs.

In the traditional economic era, some economic resources are given residual claims, while debt capital, labor, etc. generally do not have residual claims. In high-tech venture capital enterprises, human capital has become the core resources of enterprises. If the entrepreneur is still used to determining the income by determinate reward paradigm, it will inevitably produce incentive incompatibility. When the entrepreneur realizes that his expected psychological value cannot be realized in the enterprise, he will find another employer or be self-employed to disperse the human capital investment, which leads to the unsteady governance structure of the venture enterprise. So the growth of enterprises showed great volatility (Yu & Duan, 2017). In fact, the entrepreneur as the manufacturer of business risk should bear the consequences of their actions—corporate risk and residual income. While they are the owners of highly specialized assets, they should have access to right of controlled “ripped off” risk—residual control right. That is, in high-tech start-ups, entrepreneurs should participate in enterprise ownership arrangements. They can share options to share ownership of the enterprise (Cao & Xiong, 2016).
From the perspective of the human capital property rights of the entrepreneur, the stock system is not only an incentive problem, but a further recognition of the property rights of human capital issues; recognition of human capital and material capital has the status of equal wealth creation. Entrepreneurs with human capital should have residual rights to operate the business (Guo & Yang, 2015). With the development of economy and society, material wealth has been continuously enriched, and the leading role of human capital in economic development has been continuously strengthened. Human capital, especially entrepreneur human capital is more scarce and important. Entrepreneur human capital has more advantages during the game process between human capital and material capital. Entrepreneurs by virtue of their business skills enjoy the surplus of business which is an inevitable trend. Of course, in practice, property rights and their size are often determined by the repeat game of a variety of human capital owners and physical capital owners. The residual claim and the size of the residual claim are the result of all the parties involved in the enterprise contract game playing the role of risk preference, scarcity, collateral, supervision, and game ability.

The Control Right of Entrepreneur

Although entrepreneur’s income has a direct incentive, but the right to control has a more important significance to the entrepreneur. In the process of development of the start-up enterprises, the technology, product, market, management, and so on have the very high uncertainty. In the investment operation process, it has the information asymmetry, as well as the moral hazard which produces, and this will cause the venture investment contract to be more incomplete (Hart & Moore, 1988). In the case of incomplete contracts, the allocation of control rights of entrepreneurs is very important. In fact, the issue of control is very complex in entrepreneurial firms, and the distribution of control over entrepreneurs and venture capitalists depends on information asymmetry, skills, participation constraints, control gains, bargaining ability, and many other factors (Hellmann, 1998). Entrepreneurs’ objectives in the distribution of control include: leading enterprises, reasonable income, and higher consumption levels of working. By introducing the continuous variable of control right, we can study the results of the allocation of control rights between investors and entrepreneurs. At the same time, we analyze the important factors that affect the distribution of control rights.

If a venture capitalist invests in a start-up firm by buying a certain number of shares \( \alpha \) of the price \( \beta \). He expects to offer the start-up firm the lowest price and the largest stake, while the entrepreneur expects to offer the investor the highest price and the minimum proportion of shares. Therefore, the venture capitalist’s strategy is to develop the optimal \( \beta(\alpha) \), and entrepreneurial entrepreneur’s strategy is to develop the optimal \( \alpha(\beta) \). We define the Bayesian-Nash equilibrium for this game, \( \alpha \) is the entrepreneur’s strategy function, \( \beta \) is the investor’s strategy function, and satisfies the following conditions: (1) The agent’s strategy produces the optimal result under the known information condition; (2) People’s strategies are consistent with each other under the Bayesian rule; and (3) investors with minimal loss of control right invest in the venture. Therefore, the only linear equilibrium can be obtained. At this time, the optimal configuration result of the control right is obtained.

Venture capitalists emphasize that when they invest, the most important factor is “people”. They usually want that after they invested; enterprises are still being operated by the entrepreneurs, rather than by their own to replace entrepreneurs. Based on extensive research, Sahlman (1988) concluded that “those abuse-minded
venture capitalists will find it difficult to attract the best entrepreneurial entrepreneurs, because good entrepreneurs will look for other investors or other funds source”. These facts suggest that venture capitalists want to have some control right to ensure effective monitoring of their operations while at the same time retaining as much entrepreneurial control over start-ups as possible to enable them to operate more autonomously. In the case of entrepreneurial holding stocks, if it is in accordance with the principle that “ownership must be matched with control”, it is difficult for the investor to control the risk of a potential conflict of interest between the two parties, so that investors often require to obtain some special control from the clear terms of investment contract to improve the efficiency of their investment and the probability of success.

In turn, if the entrepreneurs want to improve the likelihood of success of financing, they often had to give up part of the control right. As a result, the result of the control right and ownership allocation in start-up firms is often that the entrepreneur gets a relatively large share of the stock and the investor gains greater control over the proportion of his equity. Moreover, with the passage of time, if the entrepreneur’s human capital can be gradually revealed and transformed into the actual assets of enterprises, and their ability to take risks is increasing, the ultimate control right of the entrepreneur should be increased accordingly (Kirilenko, 2001). Therefore, it takes a special management mechanism in venture capital, that is, it is based on the actual development of entrepreneurial performance and operating conditions and the ability of entrepreneurs to adapt to the requirements of enterprise development and configuration of control.

The Needs Based on Reputation

Reputation is a form of guarantee. It is a commitment from one side transaction owning private information to the other side transaction without the private information. The study of modern economics shows that reputation has a very important role in economic life. Both in the product market and the capital market, reputation is an indispensable mechanism to maintain the transaction relationship. In a sense, reputation is a kind of rent, and it is a reward for high reputation. It is also in this sense, professor North who is the representative of new institutional economics considers the reputation as a valuable asset. And the reputation as the same system reduces the uncertainty and reduces transaction costs.

In the venture capital investment, the root cause of the reputation effect is that the entrepreneurial entrepreneur has the credibility of the threat of “stuck”. They cannot be like venture capitalists who invest a large amount of physical capital, and they have mainly human capital. In the process of investment and operation, entrepreneur human capital has gradually merged into tangible capital of enterprise. If the entrepreneur’s human capital investment is huge, and the income from this industry is huge, it can be considered that the human capital of the entrepreneur has a strong “asset specificity”. And if they no longer engage in venture capital, they will lose everything. Therefore, the key of the entrepreneurial entrepreneurs “stuck” is decided by the “special assets” input. Entrepreneurs are “stuck”, the human capital has a strong dependence, as long as the fund exists, it may bring benefits. Reputation for the incentive and supervision of entrepreneurial entrepreneur is very effective. As long as the formation of an effective venture capital market, entrepreneurial entrepreneurs for the sake of reputation, always tend to choose the action to maximize the utility of investors in order to obtain the trust by the market, and they expect to manage more funds.

The degree of importance for entrepreneurial entrepreneurs to their reputation is determined by many factors: The first factor is the quality of reputation. Reputation reflects the degree of accuracy of the actual
situation. That is indicating that the evaluation of entrepreneurial entrepreneur performance is necessary. The market participants use different qualitative and quantitative methods to evaluate entrepreneur’s performance. The second factor is the entrepreneur’s expectations for the future. Reputation affects the future income of entrepreneurs. The future contains the greater uncertainty. His future income evaluation is lower. The higher is the current income assessment, the less attention is paid to reputation. If the entrepreneur is at the end of his career, the role of reputation may be weakened. Therefore, the reputation may no longer be used as an incentive to protect the interests of investors. At this time, investors are only through contractual arrangements to reduce entrepreneurial entrepreneur opportunistic behavior, and to protect their own interests. The third factor is the level and amount of asset specificity invested by entrepreneurial entrepreneurs in fostering investment capacity. When the reputation of entrepreneurs is down to a certain extent, they will consider changing the occupation. The higher the specificity of the assets invested in the cultivation capacity, the higher the quantity, the higher the cost of changing the occupation, and thus the more importance to his own reputation.

The establishment of a good reputation for entrepreneurial entrepreneurs has a positive effect. The first: Good reputation facilitates finance from investors. The second: A good reputation can attract outstanding professional managers to join the venture, so that enterprises have a stronger management team. The third: More venture capital investing in enterprises indicates that enterprises have the good development prospects. Suppliers, distributors, and customers are optimistic about the start-up enterprises. They believe that the company’s products and services are better and more competitive.

**Supervision and Restraint Mechanism**

In order to obtain the reward and punishment for the entrepreneurial entrepreneur’s performance, it is necessary to grasp the information that reflects the entrepreneur’s performance. This information is obtained through the competition mechanism of external market (such as manager market, capital market, product market, and labor market) and from within the enterprise, through the supervision and restraint mechanism that is established by investors using their own supervisor right.

The closer the market is close to perfect competition, the more able to fully disclose the authenticity of entrepreneurial entrepreneur performance. That is, the degree of the correlation of entrepreneur performance and entrepreneur efforts is large. Then it forms a pressure on entrepreneurs to force their self-motivation and constraints. The relatively perfect market structure poses external pressure to the entrepreneur. This pressure is implicit and indirect. It must work hard to create success to resolve. The pressure of market competition is a durable, comprehensive, and effective way to encourage entrepreneurs to work hard and continuously, and is more cost-effective and easier to operate than internal monitoring costs.

Supervision and restraint mechanism from internal entrepreneur is from three-layer structure, and those are the entrepreneurial culture layer, the system layer, and the technical layer.

The cultural layer aims to make the entrepreneur acquire a kind of self-disciplined character through the subtle influence of culture, and the restraint of this level is long-term.

The purpose of the system layer is to bind the entrepreneur through the laws, regulations, and rules. This binding force is visible and has some coercive force. In the start-up enterprises, it usually makes the right to vote distribution clause. Venture capitalists usually have the right to vote, so they can keep abreast of the business situation and participate in the decision-making activities of major issues, so as to better supervise the entrepreneurs. At the same time, some restrictions are on the behavior of entrepreneurial entrepreneurs, and the
main restrictions are on two kinds of behavior: first, direct or indirect harm to the behavior of the market position of start-ups; second, the internal transactions, investment contracts to do some of the principles of this provision, and to give investors a veto over key issues.

The technical layer implements the “exact constraint” to the entrepreneurs through the effective management techniques, such as the signing of the equity transfer contract, specifically through the terms of repurchase, unlock terms, reverse the terms of the merger, and the sale of entrepreneurs to restraint. In order to prevent the issuance of new shares due to low-cost companies, resulting in the original corporate shareholder assets shrink, that is to prevent the phenomenon of dilution of shares, investment contracts often made the old shareholders have preemptive rights to give preference shares to adjust the conversion price rights. In the event of equity dilution phenomenon, it increases the number of shares of common stock convertible from preferred stock to protect the interests of the enterprise. While also in the corresponding information disclosure, it gives investors more right of understanding the business conditions. Although the disclosure of information itself does not bring direct practical benefits, but it helps to fully assess the entrepreneurial entrepreneur management capacity, and the actual operation of the enterprise. With this information, venture capitalists have the flexibility to decide whether to follow up their investments or penalize underperforming entrepreneurs, thus increasing the deterrent effect on entrepreneurs and to some extent, reducing monitoring costs.

Cultural constraints to entrepreneurs do not want to breach the contract. The system layer is to enable entrepreneurs not to breach the contract. And the technical layer made entrepreneurs not dare to break the contract. Through the construction of a comprehensive system of constraints, it will promote entrepreneur behavior to productive efforts to reduce or eliminate distribution efforts.

The Relationship Between Entrepreneur Ability and Entrepreneurial Effort

In the venture capital enterprises, entrepreneurial capacity and entrepreneurial efforts are interrelated. Under certain conditions, they can be transformed. The acquisition of entrepreneur’s ability is not entirely completed before being the entrepreneurs through “learning before doing”. After becoming entrepreneurs, they also can improve their own ability through the form “learning by doing” said by Arrow. To some extent, it can be said that the behavior of improving the entrepreneur’s ability through “learning by doing” is also the act of improving the productive effort under the effect of the incentive mechanism. That is, improving entrepreneur’s effort is also conducive to improving the entrepreneur’s ability. At the same time, the improvement of entrepreneur’s ability also helps entrepreneurs to improve their ability and quality, which also helps entrepreneurs to improve the level of efforts.

Conclusions

The performance of entrepreneurial enterprises is derived from the internal variables and the external variables. This paper mainly discusses the two aspects from the internal variables, namely, the ability level of entrepreneurial entrepreneurs and their productive efforts. The paper tries to contribute a power to how to improve the performance of entrepreneurial enterprises.

References
