

Article

Exploratory Orientation, Business Model Innovation and New Venture Growth

Hao Zhang ¹, Xinbo Sun ^{1,*} and Chan Lyu ^{2,*}

¹ School of Business Administration, Northeastern University, Shenyang 110169, China; haozhang@stumail.neu.edu.cn

² School of Business, Macau University of Science and Technology, Taipa, Macau 999078, China

* Correspondence: xbsun@mail.neu.edu.cn (X.S.); chlyu@must.edu.mo (C.L.)

Received: 26 October 2017; Accepted: 25 December 2017; Published: 27 December 2017

Abstract: Why are some start-ups more successful than other companies? In view of this question, this paper deconstructs the growth mechanism of the present new Chinese ventures from the perspective of Internet entrepreneurship and points out that exploratory orientation and business model innovation play an important role in the new ventures growth process. Based on this, through the investigation of 210 start-ups in China, the research found that: (1) exploratory orientation is in a positive relationship with the growth of new ventures; (2) business model innovation plays a mediated role between exploratory orientation and new business growth; (3) Internet embeddedness is found as a moderator in the relationship between exploratory orientation and the growth of new ventures. This finding will not only help further deepen the new research in the new venture growth process but also help to further expand exploratory orientation, business model innovation and the important role of the Internet embeddedness in the growth of new ventures.

Keywords: exploratory orientation; business model innovation; new venture growth; internet embeddedness

1. Introduction

In the fierce market competition, successful enterprises often have a wealth of resources and have the opportunity to continue to expand the scale, occupy market share. When abortive enterprises are lacking for resources, they cannot effectively expand their scale, suffer loss of market share, and frequently die out. The growth of new ventures, the most obvious is the expansion of enterprise scale, the most important thing is the formation of sustainable competitive advantage [1]. In the early days of business, due to the shortage of resources, the uncertain environment, the new ventures are struggling for growth. Especially compared with the old enterprise, the new ventures naturally have a “new entry defects”. In the face of challenges from organization internal and external changes, the new ventures are more unresponsive and overwhelmed, which is the main reason for the high failure rate of new ventures.

In response to this problem, scholars have found that enterprises with exploratory orientation in the new business model and business areas are more able to effectively access resources and adapt to future environmental changes [2,3]. “Exploratory orientation” refers to the tendency of enterprises to engage in activities such as “search, variation, risk taking, experimentation and discovery” [3]; it emphasizes jumping out of existing technology and market trajectories, seeking new knowledge actively and promoting the development of new products, technologies, processes or structures. Additionally, it pays attention to whether enterprises can enter new markets, meet new customer demands and develop new sales channels [4]. What’s more, exploratory orientation plays an important role in the growth of a new business. On the one hand, according to the resource-based view, the enterprise’s exploratory orientation is an implicit resource owned by the entrepreneur and can help

the enterprises to actively expand their business areas, carry out business activities and enhance their business performance [5,6]. On the other hand, from the perspective of competence, the enterprise's exploratory orientation can help to strengthen its ability to deal with future risks, identify potential business opportunities and by trying new business methods, new development concepts, to promote business model innovation [7]. However, the latest research found no positive relationship between exploratory orientation and new business growth. For example, Auh and Menguc point out that the return from exploratory orientation "is often negative" [8]; Wiklund and Shepherd find that exploratory orientation increases the failure rate of an enterprise [9]. The reason for this paradox is that: First, there is a lack of understanding of the relationship between the exploratory orientation and the growth of new ventures, few studies have explored the mechanism of action between them. Second, the research on the new venture growth situation is obviously insufficient and the differential performance of new ventures in different situations has not been explored [10].

Based on this, this paper takes the Internet as the starting point of the situation, to deconstruct the action mechanism of exploratory orientation on new venture growth under Internet embeddedness and clarify the ambiguities of the existing research in exploring the relationship between exploratory orientation and the growth of new ventures. In recent years, with the rise of the Internet economy, the Internet has played an important role in promoting economic development and helping the growth of new ventures [11]. In the initial stage of the enterprise, the enterprise with the exploratory orientation usually can obtain the required resources through the Internet and save the cost of the enterprise. The enterprise through the Internet not only broaden the sources of information but also accelerates the speed of information dissemination, to some extent, improving the efficiency of resource acquisition, increasing business agility to changes in the external environment, so as to accelerate the growth of new ventures [12]. From this perspective, start-ups embedded Internet can effectively cope with facing the shortage of resources and the high risk in the primary stage. Therefore, in the context of Chinese transforming economy, it is particularly important to explore the mechanism of the interaction between the enterprise exploratory orientation and the growth of new ventures in the context of Internet embeddedness.

This paper mainly has the following theoretical contributions. Firstly, based on the perspective of enterprise strategy development, this paper puts forward the importance of exploratory orientation to the growth of new ventures and further explores the relationship between them. Secondly, this paper explores the influence of Internet embeddedness on the relationship between exploratory orientation and new venture growth, which not only fits the current trend of Internet business but also analyzes the Internet situation of new ventures in access to resources, reducing risk and other aspects of the unique advantages. Finally, this paper finds that business model innovation plays an intermediary role between the exploratory orientation and the growth of new ventures.

2. The Theoretical Analysis and Research Hypothesis

2.1. New Venture Growth

New business growth is a key issue in entrepreneurial process theory [13] and has formed a number of insightful research results. Sexton argues that the essence of entrepreneurship is to achieve growth of the enterprise, entrepreneurial activity is closely related with growth of the enterprise [14]. Shane and Venkataraman further point out entrepreneurship is the creation of new products and new services and that new venture growth is considered a specific stage of the entrepreneurial process due to the presence of new products and services [13]. Based on the theory of entrepreneurial process, the new research on the growth of new ventures mainly formed two schools. One is concerned with the question of "why some start-ups can be successful and other businesses cannot?" The school believes that the growth of new ventures is facing a serious "new entry defect" problem, companies can overcome the new entry defects and take the lead in success [15–18]. The speed and degree with which new entry defects are responded to is the fundamental reason why some start-ups can survive

and grow and others cannot [15]. The speed and degree with which new entry defects are responded to is the fundamental reason why some start-ups can survive and grow and others cannot. Another school focuses on how new ventures grow. Most of the research in this school is devoted to the construction of a new periodic model of enterprise growth from the theory of the enterprise life cycle and to explore the process and evolution mechanisms of new venture growth [19–21].

Based on the new entry defect school, the growth of new ventures can be studied from the following four angles. First is the business model point of view—the business model is the most direct and related mechanism to overcome new entry defects, a good business model can effectively overcome the entry defects of new ventures to the related problems, can directly pull the new ventures and mature companies back to the same starting point and be able to create value in the short term, to achieve the rapid growth of new ventures [15,22]. Zott & Amit proposed that the new business model includes two kinds of designs: efficiency-oriented business model and innovation-oriented business model. The choices of the two are different and the new business performance will be different [16]. On the basis of this, Wang Yingjun and Han Wei further proposed that the growth of a new enterprise itself is a process of building a business model [23]. However, there are few researches on this point at present and the research mainly focuses on mature enterprise. Second is the resource-based perspective, based on the resource-based theory, the growth of new ventures is a process of continuous access to resources. In the process, the entrepreneur's initial resources are crucial to the growth of new ventures, it determines the new ventures development potential from the very beginning. However, if the initial resources of a new enterprise are scarce, it must obtain further resources in a specific way so as to break through resource constraints to achieve entrepreneurial success. Some scholars have studied the ways of obtaining new business resources from many angles, for example, Zhu Zhenduo & Li Fei argues that the acquisition of new corporate resources can cultivate and develop a business-combination strategy through “internal and external support” and pay attention to the resource allocation mechanism and economic leverage of trust in relationships [17]. Batjargal et al. argue that new enterprise resources can be accessed through the entrepreneur's external network of relationships [24]. When resources are acquired, the first task of a startup is to identify and develop entrepreneurial opportunities efficiently using the resources, it has acquired in order to quickly adapt to changes in the environment and promote the survival and growth of startups [25]. Third, the perspective of innovation capacity, the point of view that the growth of new ventures is to develop their own ability to innovate the process, mainly divided into two aspects. External innovation capability mainly refers to the ability to cultivate and cope with the external environment and adjust the corporate strategy according to the external environment. The internal innovation ability refers to the innovation of new enterprise products and services. If an enterprise wants to be developed, it will depend on the size of its own innovation ability and new enterprises with good innovation ability can grow rapidly [26,27]. Fourth, the legitimacy of the point of view, the new business that the inevitable growth of the legitimacy of the obstacles. On the one hand, to enhance public awareness of the legitimacy of new enterprises, on the other hand, it is necessary to cultivate and improve the ability of the public legitimacy of new ventures. Because the new business only to solve the problem of legitimacy, the new enterprise can be recognized by the community and the existing enterprises but also to stand firm and continue to develop. Luo Xing wu et al. explored the impact of business model innovation on the performance of new start-ups based on the legitimacy perspective and business model theory. The results show that business model innovation can significantly promote the legal as well as new business performance improvement [18].

To sum up, it can be seen that the existing literature on the growth of new ventures has multiple angles and multiple perspectives and the degree of each angle is different. Based on this, this paper selects the current business model from the perspective of the new venture growth is defined as the business model from trial and error to stereotypes and the process of creating value.

2.2. Exploratory Orientation and New Venture Growth

In recent years, the word “exploration” has been widely used in the field of management [5], for example exploratory innovation [28], exploratory learning [3], etc. Exploration is a process of trial, discovery, trial and error in an unknown field, which is closely related to innovation [29] (p. 481). Recently, the exploration as a strategic direction of the enterprise, often used to refer to the enterprise to try a new way to make a new choice, to open up a new field [2].

With the rapid development of science and technology, consumer demand continues to change, enterprises in response to the dramatic change of market environment, had to take appropriate countermeasures, therefore, enterprises need to try to explore some new areas, some new technology, make some new choices, in order to form a sustainable competitive advantage [29] (p. 481). At the beginning of the establishment of the enterprise, due to the constraints of resource constraints and environmental changes, the growth of new ventures is difficult, for the sake of own survival, they had to jump out of the existing market and technical trajectory and actively to seek new knowledge, to get a foothold [30]. Further, enterprises with exploratory orientation can actively explore new markets, try new technical means and methods, develop new customer groups and sales channels and in a different way, to achieve a unique competitive advantage. At the same time, enterprises with exploratory orientation can effectively deal with “new entry defects”. Bauer & Leker argues that enterprises with exploratory orientation are more able to access resources and adapt to future environmental changes than others [2]. On the one hand, in terms of resources, the enterprise’s exploratory orientation as a recessive resource of entrepreneurs can help new ventures to make up for the shortcomings of natural resources deficiencies and reduce the gap between mature enterprises [6]. On the other hand, in terms of ability, enterprise’s exploratory orientation as an ability of enterprise to adapt to changes in internal and external environment and to resist risk, helping new ventures rapidly to locate their own customer groups, successfully identify potential business opportunities [7]. Based on this, the following hypothesis is made:

Hypothesis 1. *Exploratory orientation has a positive impact on the growth of new ventures.*

2.3. The Moderating Effect of Internet Embeddedness

The term “Internet embeddedness” is derived from the theory of “embeddedness” [31]. According to the theory of embeddedness, the influence of non-economic factors such as government, social culture and psychology on the economy is enormous and the human economy is embedded in the complex relationship between the non-economic and economic system [32]. Based on the theory of embeddedness, Mitchell put forward the concept of “job embeddedness” in 2001 and applied it to the field of employee turnover. He believes that the staff is embedded in a huge network of social relations, from the bondage of family, society and other aspects, the higher the degree of intercalation, the less likely the employee turnover [33]. After the further development of the embeddedness theory, some scholars have proposed the concept of social network embeddedness [34] and Internet embeddedness [31,35].

In recent years, with the rapid development of the Internet, the Internet is playing a more and more important role in the economic and social development and all aspects of human society are affected by the Internet [12]. For new businesses, the Internet has brought a wealth of online resources and customer groups to broaden the survival of enterprises and the development of the channel [36].

Based on the above analysis, it can be concluded that the Internet embeddedness is likely to moderate the relationship between the exploratory orientation and the growth of new ventures. This is because in the context of Internet embeddedness, on the one hand, new ventures with exploratory orientation can obtain the initially required resources through the Internet, improve the efficiency of access to resources but also can use the Internet to expand access to enterprise resources and make full use of online resources, to make up for the defects of new ventures and any shortage of resources [37].

On the other hand, new ventures can also through the application of the Internet to enhance the speed of information dissemination, to enhance the ability to adapt to changes in the external environment and deal with internal challenges of new ventures, thereby reducing the risk of future development of enterprises and ultimately promote the growth of new ventures [12]. In short, Internet embedding is like a “moderator” between exploratory orientation and new venture growth. It not only provides a new channel for acquiring new resources for exploration-oriented enterprises, increases the speed of resource acquisition and plays an important role in accelerators. It also effectively improves the agility of the new enterprise in coping with the changes in the external environment, reduces the risk of new enterprises in exploring new fields and acts as a “protector”. Based on this, put forward the following hypothesis:

Hypothesis 2. *Internet embeddedness positively moderates the relationship between the exploratory orientation and the growth of new ventures, that is, the deeper the degree of Internet embeddedness, the stronger the relationship between the exploratory orientation and the new venture growth.*

2.4. The Mediating Effect of Business Model Innovation

Business model innovation has been the focus of scholars and entrepreneurs in recent years [38–40], mainly including three major perspectives. First, from the perspective of technological innovation, Chesbrough and Rosenbloom believed that business model innovation is the conversion mechanism between technological innovation and value creation [41]. Secondly, from the perspective of strategy, Bock et al. argue that business model innovation is a process that takes advantage of new opportunities and is a comprehensive and systematic change of organization [42]. Thirdly, from the perspective of E-Business, Paul defines the business model as the transformation and reorganization of information, products and services [43].

Although the concept of business model innovation has not been unified so far but scholars and entrepreneurs agree with its important role in the growth of new ventures. McGrath proposed that business model innovation is a process in which enterprises conduct experiments [30]. In the course of this experiment, companies were able to discover opportunities and create value [44], forming a firm’s sustainable competitive advantage [45], thereby contributing to business growth [46]. Therefore, from this perspective, it is important to explore the independent variable of the business model [44,47,48]. Johnson et al. proposed that the exploration of business orientation has an important influence on the innovation of business model from the perspective of experiment [49]. He believes that the innovation of the business model is largely due to try a new method to test a new technology and this attempt is precisely from the strategic change of the enterprise, especially the exploration-oriented enterprise innovation will produce important impact [2]. For example, Li & Yeh argue that exploration orientation will contribute to product and technology innovation [50]. Based on the viewpoint of Johnson et al., it is not difficult to find that there is an important correlation between the exploration of business orientation and the innovation of business models. This is because exploration-oriented companies are active in developing new technologies, finding new business opportunities and trying to change existing business practices, so as to enhance their ability to explore new things, discover new problems and come up with new ways [48], which will benefit the innovation of the business model [7]. Of course, the innovation of business model will also be conducive to the growth of new ventures. This is because the business model innovation can form a new business differentiation advantage in a short time, weaken its “new entry defects” problem, form the enterprise’s sustainable competitive advantage [16] and greatly enhance the new enterprise performance [45,46,49,51], ultimately helping companies grow rapidly in a short period of time. Based on this, the following hypothesis is made:

Hypothesis 3. *The impact of exploratory orientation on new venture growth is mediated by business model innovation.*

The theoretical model based on the above hypothesis is shown in Figure 1.

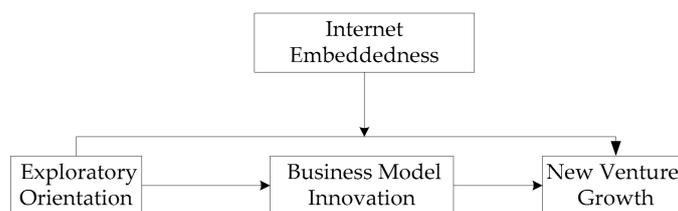


Figure 1. Theoretical Model.

3. Methodology

3.1. Sample and Data

This study refers to the viewpoints of the predecessors and chooses the enterprises whose establishment time is less than 8 years as the survey object, using questionnaires to collect data [52]. Based on the scientific research and normative research, the questionnaire is divided into two parts: preliminary research and formal research. In the Preliminary research session, through the discussion with the mentor, the questionnaire was modified to clarify the ambiguities in the questionnaire and the professional vocabularies in the entrepreneurial field were removed, so that investigators can understand the literal meaning. After that, the questionnaires were issued to the 74 CEO, testing and consulting with their views, to test the reliability of the various indicators and ensure that each indicator can truly reflect the actual situation of enterprises and ultimately to test the design of a reasonable purpose.

The survey was conducted from September 2016 to January 2017. Data were collected mainly in two ways: (1) The first way is that researchers carried paper-based questionnaires to four local business incubators to conduct research. After obtaining the relevant responsible persons' agreement, a brief description of the purpose and cause of the investigation were told to the respondents and distributed the questionnaires to them, at the same time, the process of respondents writing the questioner was supervised. And at last, the survey sent a total of 150 questionnaires, 114 questionnaires were recycled; (2) And the second way is that the paper version of the questionnaire were distributed to the researchers where the EMBA, MBA students. The specific situation was to attend the EMBA and MBA classes by the tutor's opportunity, before the course starts, sending the paper-based questionnaire personally to the entrepreneur's trainee and telling precautions to them before writing the questionnaire. After the course was over, the questionnaires were withdrawn. Among them, 50 questionnaires were issued by EMBA, 48 were collected; 150 were distributed by MBA and 137 were recovered. In this way, 200 questionnaires were distributed and 185 were returned.

Through the above methods, a total of 350 questionnaires were issued and a total of 299 questionnaires were collected. Then, this paper processed the collected questionnaires, eliminating missing items more than 20% questionnaires as well as the questionnaire in which all questions are selected for the same option for the total of 89 questionnaires. Finally, 210 valid questionnaires were collected and the effective recovery rate was 60% [53].

3.2. Common Method Bias

The questionnaires are collected through 2 ways, in order to validate the questionnaire belonging to the same matrix. This paper uses the method of difference analysis t test and ANOVA for each sample collection method was tested to find the differences between the 2 groups in the sample in the primary study on variables. The results showed that there were no significant differences between the 2 items in the questionnaire of the 31 items. Next, this article examines the common method variation. First of all, this paper divides the questionnaire into four parts according to the independent variables, the dependent variables, the mediator variables and the moderator variables and measures them

separately to prevent the common method variation. Secondly, this study validates the significant effect of the interaction between the exploratory orientation and the Internet embeddedness on the growth of the new ventures, which means that this article is less affected by the common method variation. Finally, the single factor analysis of Harman is carried out. All the items in the questionnaire were put into the SPSS20.0 factor analysis and the extraction factor was set as 1, to check the degree of variation caused by the one factor. The results showed that the precipitation of one factor of explained the variation of 30%, which was less than 50%, which indicated that this method was not affected by the common method.

3.3. Measures

In this paper, we choose the scale which has high reliability in both domestic and overseas studies and responses are made on a 5-point Likert-type scale, ranging from 1 = strongly disagree to 5 = strongly agree. All items are listed in Table 1.

The measurement of new venture growth, existing research mainly from the employee growth, sales revenue growth, market share growth, profit growth and other aspects, including single-index measurement and multi-index measurement of two ways. Relatively speaking, however, multi-index measurements are more common. Baum et al. used the annual average growth rate of sales, the average annual growth rate of employees and the average annual growth rate of profit as the measure of new venture growth. The reliability of the scale is 0.87 [54]. However, Cavazos et al. still use Baum et al.'s scale, they point out that the combination of multiple indicators for measuring the growth of an enterprise should be used. They measured the growth of startups using three indicators: growth in employees, sales growth and operating profit, with a gauge reliability of 0.794 [55]. Based on this, this paper measures the growth of new ventures for reference by Baum et al. and Cavazos and measures the growth of new start-ups by three indexes: employee growth rate, sales growth rate and operating profit growth rate, including three items and these three items are often used to measure the growth of new ventures which has been recognized by many scholars. However, unlike the previous studies, this paper uses the relative indicators of the growth performance of the target company as compared with other major competitors in the industry. The reason is that many start-ups in China are reluctant to disclose such sensitive figures as corporate performance.

For exploratory orientation measurements, He and Wong suggested that consideration should be given to four aspects: new products and services, new markets, new technologies and new ideas [29]. Atuahene-Gima followed He and Wong's [56], while Hai Guo et al. revised and applied them appropriately in the Chinese context based on the two measurements, this measurement table has a total of 4 entries and it is also the main reference of this paper for exploratory orientation measurement [7]. For the business model innovation, this paper draws on the research of Zott and Amit and the case of Hai Guo et al. in the same way with the Chinese situation and the scale has a total of 9 items [7,16,57]. For the measurement of Internet embeddedness, Xu Xiaomei et al. first developed the Internet embedding scale based on the previous research results of "work embedding" from the three dimensions of contact degree, matching degree and sacrifice, including "I like to get information through the Internet", "leaving the network makes me feel lost spirit support" and 15 other items, the scale as the main reference for measuring Internet embeddedness [35].

For the rigor of the study, three variables that may produce substitutional effects are selected as control variables and incorporated into the regression equation. The first is the size of the firm, that is, the number of employees owned by the firm. The second is the region, some areas of entrepreneurial atmosphere and some areas rarely venture, this factor also have an impact on the growth of new ventures. The third is the industry which new business belongs to, different industries demands for business model innovation is different, some industry demand is high, some industry demand is low. The above three variables as a virtual variable is measured.

Table 1. Measures and validation.

Items	Loading
Exploratory orientation (Alpha = 0.78; AVE = 0.60)	
1. Creating products or services that are innovative for the firm	0.76
2. Aggressively venturing into new market segments	0.83
3. Acquiring skills and technologies completely new to the firm	0.74
4. Generating creative ideas among firm members	0.76
Business model innovation (Alpha = 0.85; AVE = 0.69)	
1. Our business model offers new combinations of products, services and information	0.83
2. Our business model attracts a lot of new customers	0.85
3. Our business model attracts a lot of new suppliers and partners	0.79
4. Our business model bonds participants together in novel ways	0.72
5. Our business model links participants to transactions in novel ways	0.78
6. We frequently introduce new ideas and innovations into our business model	0.88
7. We frequently introduce new operational processes, routines and norms into our business model	0.85
8. We are pioneers of the business model	0.91
9. Overall, our business model is novel	0.84
Internet embeddedness (Alpha = 0.91; AVE = 0.55)	
1. I often surf the Internet	0.76
2. The Internet takes up most of my time	0.75
3. Much of my work needs to be done through the Internet	0.71
4. I often pay attention to what other people are doing on the Internet	0.77
5. I mainly through the network to contact friends in life	0.74
6. I like to communicate with people through the Internet	0.75
7. I think in the network can find like-minded friends	0.71
8. I like to get information through the Internet	0.72
9. I fully trust the Internet	0.76
10. leaving the Internet makes me feel anxious	0.78
11. leaving the Internet makes me feel out of touch with the society	0.72
12. leaving the Internet makes me feel lost spiritual support	0.76
13. leaving the Internet will let me lose all kinds of opportunities	0.78
14. I will need to pay a higher cost of communication to leave the Internet	0.71
15. leaving the Internet will increase the cost of my life	0.73
New venture growth (Alpha =0.96; AVE = 0.72)	
1. Compared with competitors, the number of employees in the enterprise is growing rapidly	0.81
2. Compared with competitors, the company's sales growth rapidly	0.85
3. Compared with competitors, the company's operating profit growth quickly	0.88

3.4. Reliability and Validity

In this study, the reliability of the scale was analyzed by SPSS20.0 and the reliability of each variable was tested using Cronbach's α coefficient. As can be seen from Table 1, all variables Cronbach's alpha coefficients are more than 0.7, indicating that the questionnaire has a high degree of reliability but also shows that the collected data is more reliable.

This paper examines the validity of the scale from two aspects: content validity and construct validity. Because the scale used in the study is mostly an expert-proven mature scale, it can be said to have a higher content validity. Using the confirmatory factor analysis to check the construct validity of the scale, it can be seen from Table 1 that the number of factor loads of all variables is greater than 0.5, indicating that the scale convergent validity is better. Then, the discriminant validity of the scale

was tested. The results showed that the square root of AVE was greater than the correlation coefficient between the 2 variables and the results showed that the scale had a high degree of discriminant validity.

3.5. Results

The mean, standard deviation and Pearson correlation coefficient of latent variables were statistically analyzed by SPSS20.0, as shown in Table 2. It can be seen from the table that the mean and standard deviation of the variables are within the acceptable range, from the Pearson correlation coefficient between variables, enterprise exploratory orientation and new venture growth ($r = 0.255, p < 0.01$) are significantly related, exploratory orientation and business model innovation ($r = 0.594, p < 0.01$) are significantly related, business model innovation and new business growth ($r = 0.517, p < 0.01$) are significantly related. The results preliminarily support the Hypothesis 1, Hypothesis 3.

Table 2. Descriptive statistics and correlation matrix.

Variables	Mean	SD	1	2	3	4	5	6	7
1. Firm size	1.64	0.92	1						
2. Region	1.30	0.56	0.508 *	1					
3. Industry	3.51	1.11	-0.583 *	-0.087	1				
4.Exploratory orientation	3.72	0.66	0.063	-0.066	-0.187 **	1			
5.Business model innovation	3.70	0.60	0.006	-0.051	-0.175 *	0.594 **	1		
6. Internet embeddedness	3.69	0.74	0.264 **	-0.111	-0.199 **	0.342 **	0.434 **	1	
7. New venture growth	3.50	0.85	0.229 **	-0.060	-0.132	0.255 **	0.517 **	0.450 **	1

Notes: ** $p < 0.01, * p < 0.05.$

In this paper, Amos17.0 and Mplus6.0 is used to test the effect of exploratory orientation on the growth of new ventures and the mediating effect of business model innovation and the moderating effect of Internet embeddedness. First of all, the model of mediating effects is constructed by Amos17.0. Results indicated that the proposed model provided a good fit to the data $\chi^2/df = 1.152; RMSEA = 0.07; CFI = 0.968; TLI = 0.960; IFI = 0.970; NFI = 0.910.$ This model is shown in Figure 2.

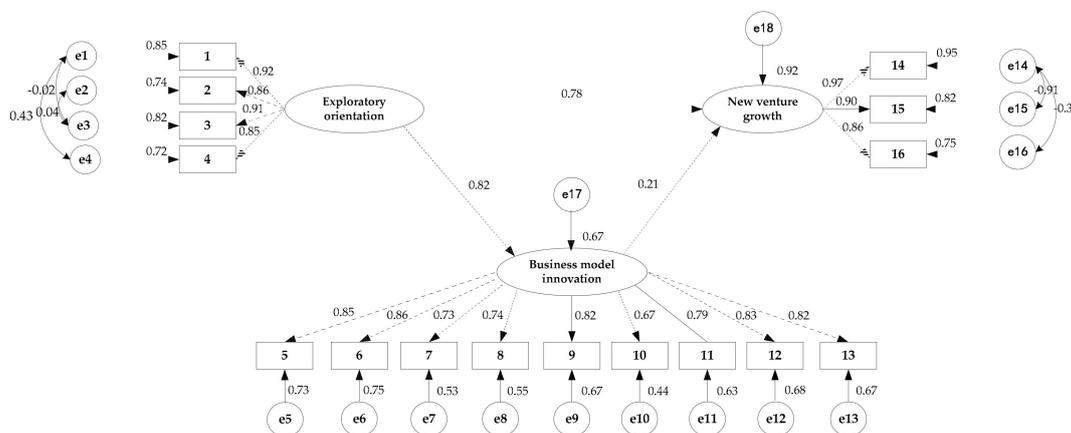


Figure 2. Best fitting model.

Figure 2 show that the exploratory orientation has a positive effect on the growth of the new ventures ($\beta = 0.781, p < 0.01$) and the Hypothesis 1 is verified. The business model innovation is introduced as a mediated variable, the results show that the exploratory orientation has a positive effect on business model innovation ($\beta = 0.823, p < 0.01$) and business model innovation positively influences the growth of new ventures ($\beta = 0.215, p < 0.05$). Therefore, the Hypothesis 3 is partly verified. In addition, in order to the rigor of the study, this article add control variables into the Mplus 6.0 software based on the best fitting model. Results indicated that the results of the mediating effects were less influenced by the control variables and were not very different.

Finally, Mplus6.0 is used to test the moderating effect of Internet embeddedness. Before the regression analysis, the VIF values were tested and found to be no more than 1.5. Next, begin the formal test. First of all, this article has made a centralization of exploratory orientation, business model innovation and Internet embeddedness. Secondly, the model of the moderating effects is constructed. Results indicated that the model of the moderating effects provided a good fit to the data and Internet embeddedness positively affects the growth of new ventures ($\beta = 0.426, p < 0.01$) and the interaction term between exploratory orientation and Internet embeddedness positively affects the growth of new ventures ($\beta = 0.227, p < 0.01$). It was found that Internet embeddedness positively moderates the relationship between enterprise exploratory orientation and the growth of new ventures, thus, Hypothesis 2 is supported.

4. Discussion

4.1. Contributions

The main contributions of this paper are as follows. Firstly, on the basis of enterprise exploratory orientation, this paper explores its' effect on new venture growth in detail and expands Hai Guo's research [7]. At the same time, by combining the perspectives of resources and ability, this paper proposes that exploratory orientation as a hidden resource and a unique ability will contribute to the identification of opportunities and access to resources. This proves Entrepreneurial Process School's opinion that "opportunity discovery—resource acquisition—the formation and growth of new ventures" [58]. "Why some startups are more successful than others?" which is the basic problem in the field of entrepreneurship. The contribution of this article is expanding the Entrepreneurial Process Theory, which point out that enterprise exploratory orientation may be one of the important factors that determine their success or not.

Secondly, this paper elaborates the mechanism of enterprise exploratory orientation in promoting the growth of new ventures. That is, the new ventures with exploratory orientation can form a differentiated advantage in the early days of business through the process of business model innovation, so as to overcome the new entry defects. It helps companies through the start-up period and promotes the growth of new ventures. It means that the role of business strategy in the development of new ventures is further clarified from the perspective of business model innovation and has broadened the application of business model innovation by Zott & Amit's [59]. Scholars have been paying close attention to Business model innovation in recent years. Most studies focus on the effects of business model innovation, such as the formation of a sustainable competitive advantage [16] and the improvement of business performance [45] and neglects the antecedent variables of business model innovation. This paper proposes that, only if business model innovation is in line with corporate strategic guidance will it be conducive to the growth of new ventures. From this point of view, this provides a reference for further research.

Thirdly, this paper finds that Internet embeddedness plays a positive moderate role between exploratory orientation and new venture growth. That is, the deeper the Internet embeddedness, the stronger the relationship between exploratory orientation and new venture growth. This article introduces the Internet embeddedness as the moderate variable, which to some extent explains the important role of the Internet in the growth of new ventures and expands Guo, Runping et al.'s research on the results of Internet embeddedness [11]. At the same time, the findings of this paper have also broadened the scope of application of the basic theory of resources and the theory of capabilities from the perspective of the Internet and have acquired important theoretical significance.

4.2. Managerial Implications

This paper also has important implications for the practice of entrepreneurial management: Firstly, this paper explores the antecedents of new venture growth and points out the importance of enterprise exploratory orientation in the growth of new ventures. Concerned about the growth of

new ventures, which are all entrepreneurs need to face the problem. However, from the previous relevant research trend of new venture growth point of view, the strategic orientation will become an important field on the further study of the new venture growth. Based on this trend, from the perspective of an entrepreneur to return to the real world, we will find that successful entrepreneurs are able to create a successful enterprise, largely depending on its entrepreneurial spirit and excellent quality of continuous exploration. In terms of new enterprises, corporate exploratory orientation is like an entrepreneurial spirit, to a certain extent this strategic orientation promotes the growth of new ventures, which gave the practice of a large number of managers a profound inspiration, an important factor in the success of an enterprise will depend to a large extent on its early strategic orientation.

Secondly, it emphasizes the importance of business model innovation and points out that business model innovation is an effective way to promote the growth of new enterprises. For new enterprises, with advanced technology and differentiated business model can effectively solve the “new entry defects”, so as to lay the foundation for the development of the enterprise after the day. The research results of this paper show that the innovation channel of the enterprise business model depends on the exploratory orientation of the new venture, which requires the new enterprise to develop its own strategic plan to uphold the spirit and orientation of exploration, so as to enable the rapid development of new enterprises, to adapt to the rapidly changing market environment and changing customer needs.

Thirdly, this paper discusses the influence of Internet embeddedness on the growth of new ventures and points out that the new enterprises with exploratory orientation are more likely to obtain information and resources in the Internet embeddedness situation. In today’s policy background of “mass entrepreneurship and innovation”, people rely on the Internet for entrepreneurship has become the trend of our times. This paper proposed in the context of Internet embeddedness, the enterprise resources acquisition is more convenient, fast and effective, which has pointed out the inherent mechanism behind the Internet startup, on the other hand, the conclusion of this paper also gives the visual suggestion for the new enterprises to open up the Internet resources, coordinate the online and offline activities and promote the growth of new ventures.

4.3. Limitations and Future Research

The research limitations of this paper are mainly in the following aspects: Firstly, the research of this paper is based on the Chinese context, the research results are suitable for other countries yet to be further verified. Future research can explore the universality of research in other countries, or explore the differences and comparisons of research in different contexts. Secondly, this paper explores the mechanism of exploratory orientation, Internet embeddedness, new venture growth, innovation of business model and so on. The future research can further explore its mechanism from the specific dimension of each variable. Finally, the paper collects the data in the form of questionnaire. The form of cross-sectional data will be biased by subjective memories of respondents. Future studies should be conducted in multi-stage surveys or more detailed studies using panel data.

5. Conclusions

The conclusion of the study shows that the exploratory orientation is helpful to the growth of new ventures and further expounds the mediating and moderating effects of the business model innovation and the Internet embeddedness in the exploratory orientation and the growth of new enterprises.

First of all, this paper discusses the growth process of new enterprises from the perspective of enterprise strategy, taking the frontier concept of entrepreneurship as the breakthrough point. At the same time, the empirical test of the positive impact of corporate exploratory orientation on the growth of new ventures. This conclusion confirms the important role of the academic circle on the growth of new ventures. To a certain extent, enterprise with exploratory orientation at the start-up stage can quickly grow has been recognized.

Secondly, this paper confirms that business model innovation plays a mediating role between exploratory orientation and new venture growth. The results show that new companies with exploratory orientation can promote new venture growth by exploring new approaches, developing new technologies and experimenting with new business models. Based on the process development point from exploratory orientation—business model innovation—new venture growth, this study provides a new way to solve the problem of “new entry defects”. This is because the enterprise exploratory orientation nature will encourage new enterprises in the development process to spare no effort to try new development ideas, test new technologies and methods, which will help promote the business model of innovation and business model innovation will form the differentiation competitive advantages which the old enterprises do not possess and even lead to a breakthrough in technology and business model leap, which effectively reduces the new business dependence on resources but also help enterprises to form a sustainable advantage.

Thirdly, this paper innovatively finds that the Internet embeddedness positively moderates the relationship between the enterprise exploratory orientation and the growth of new ventures. This shows that in the context of Internet embeddedness, new enterprises with exploratory orientation can rely on the Internet to gain the information and resources needed for growth and successfully respond to the challenges posed by changes in internal and external environments, thereby accelerating the growth of new businesses. To further speaking, on the one hand, enterprise Internet embeddedness can make full use of online resources to make up for the shortage of resources, so as to broaden the channels of enterprise resource acquisition but also can improve the efficiency of enterprise resource utilization. On the other hand, the enterprise Internet embeddedness greatly enhances the agility of the enterprise to reflect the external environment and information, enhances the enterprise’s ability to deal with the environment change and the emergent event, at the same time can improve the efficiency and communication efficiency of the internal staff, optimize enterprise operation and management and further promote the growth of new ventures. It is not difficult to find that enterprise Internet embeddedness effectively solves the problem of “new entry defects”, which also confirms the important role of the Internet in promoting the growth and development of new enterprises and improving the social and economic life in real life.

To sum up, this paper makes a detailed analysis and verification about the impact of exploratory orientation on the growth of new ventures. Based on the literature of exploratory orientation, new venture growth, business model innovation and Internet embeddedness, this paper constructs a theoretical model of the impact of exploratory orientation on the growth of new ventures and puts forward the corresponding assumptions. On this basis, the empirical research method is used to test and verify the theoretical model.

Acknowledgments: We would like to thank the Beijing Natural Science Foundation of China (Grant Number: 9162003), and acknowledge the editors and reviewers for their language assistance and valuable comments.

Author Contributions: Hao Zhang and Xinbo Sun conceived and designed the experiments; Hao Zhang performed the experiments; Hao Zhang and Xinbo Sun analyzed the data; Chan Lyu contributed reagents/materials/analysis tools; Hao Zhang wrote the paper.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Porter, M. The competent strategy. *Harv. Bus. Rev.* **1995**, *78–90*. Available online: <http://www.syv.pt/login/upload/userfiles/image/Reinventing%20Your%20business%20model%20HBR.pdf> (accessed on 26 December 2017).
2. Bauer, M.; Leker, J. Exploration and exploitation in product and process innovation in the chemical industry. *R&D Manag.* **2013**, *43*, 196–212.
3. March, J.G. Exploration and exploitation in organizational learning. *Organ. Sci.* **1991**, *2*, 71–87. [CrossRef]
4. McGrath, R.G. Exploratory learning, innovative capacity, and managerial oversight. *Acad. Manag. J.* **2001**, *1*, 118–131. [CrossRef]

5. Gupta, A.K.; Smith, K.G.; Shalley, C.E. The interplay between exploration and exploitation. *Acad. Manag. J.* **2006**, *49*, 693–706. [[CrossRef](#)]
6. Voss, G.B.; Sirdeshmukh, D.; Voss, Z.G. The effects of slack resources and environmental threat on product exploration and exploitation. *Acad. Manag. J.* **2008**, *51*, 147–164. [[CrossRef](#)]
7. Guo, H.; Su, Z.; Ahlstrom, D. Business model innovation: The effects of exploratory orientation, opportunity recognition, and entrepreneurial bricolage in an emerging economy. *Asia Pac. J. Manag.* **2016**, *33*, 533–549. [[CrossRef](#)]
8. Auh, S.; Menguc, B. Balancing exploration and exploitation: The moderating role of competitive intensity. *J. Bus. Res.* **2005**, *58*, 1652–1661. [[CrossRef](#)]
9. Wiklund, J.; Shepherd, D.A. Where to from here? EO-as-experimentation, failure, and distribution of outcomes. *Entrep. Theory Pract.* **2011**, *35*, 925–946. [[CrossRef](#)]
10. Wang, H.; Su, Z. A strategic entrepreneurship perspective on the performance implications of exploratory orientation. *Sci. Sci. Manag. S. T.* **2015**, *36*, 123–131.
11. Guo, R.; Cai, L.; Zhang, W. Effectuation and causation in new internet venture growth. *Internet Res.* **2016**, *26*, 46–483. [[CrossRef](#)]
12. Birnbaum, M.H. Human research and data collection via the internet. *Annu. Rev. Psychol.* **2004**, *55*, 803–832. [[CrossRef](#)] [[PubMed](#)]
13. Shane, S.; Venkataraman, S. The Promise of Entrepreneurship as a Field of Research. *Acad. Manag. Rev.* **2000**, *25*, 217–226. [[CrossRef](#)]
14. Sexton, D.L.; Upton, N.B.; Wacholtz, L.E.; Mcdougall, P.P. Learning needs of growth-oriented entrepreneurs. *J. Bus. Ventur.* **1997**, *12*, 1–8. [[CrossRef](#)]
15. Shephard, D.A.; Douglas, E.J.; Shanley, M. New venture survival: Ignorance, external shocks, and risk reduction strategies. *J. Bus. Ventur.* **2000**, *15*, 393–410. [[CrossRef](#)]
16. Zott, C.; Amit, R. Business model design and the performance of entrepreneurial firms. *Organ. Sci.* **2007**, *18*, 181–199. [[CrossRef](#)]
17. Zhu, Z.; Li, F. The dynamic impact of entrepreneurial bricolage on new firm performance: An evidence based on China's transitional economy. *Sci. Sci. Manag. S. T.* **2017**, *35*, 124–132.
18. Luo, X.; Xiang, G.; Ning, P.; Cheng, C. The impact of BMI on new venture performance: The effects of legitimacy and policy orientation. *Stud. Sci. Sci.* **2017**, *35*, 1073–1084.
19. Mitra, R.; Pingali, V. Analysis of growth stages in small firms: A case study of automobile ancillaries India. *J. Small Bus. Manag.* **1999**, *37*, 43–61.
20. Ambos, T.; Birkinshaw, J.M. How do new ventures evolve? An inductive study of archetype changes in science-based ventures. *Organ. Sci.* **2010**, *21*, 1125–1140. [[CrossRef](#)]
21. Levie, J.; Lichtstein, B.B. A terminal assessment of stages theory: Introducing a dynamic states approach to entrepreneurship. *Entrep. Theory Pract.* **2010**, *34*, 317–350. [[CrossRef](#)]
22. Hite, J.M.; Hesterly, W.S. The evolution of firm networks: From emergence to early growth of the firm. *Strateg. Manag. J.* **2001**, *22*, 275–286. [[CrossRef](#)]
23. Wang, Y.; Wei, H. Research on business model construction in the process of new firm growth. *Sci. Sci. Manag. S. T.* **2011**, *32*, 51–58.
24. Batjargal, B.; Hitt, M.A.; Tesi, A.S.; Arregle, J.-L.; Webb, J.W.; Miller, T.L. Institutional polycentrism, entrepreneurs' social networks, and new venture growth. *Acad. Manag. J.* **2013**, *56*, 1024–1049. [[CrossRef](#)]
25. Eshima, Y.; Anderson, B.S. Firm growth, adaptive capability, and entrepreneurial orientation. *Strateg. Manag. J.* **2017**, *38*, 770–779. [[CrossRef](#)]
26. Geroski, P.A. The growth of firms in theory and practice. In *Competence, Governance and Entrepreneurship; Advances in Economic Strategy Research*; Foss, N., Mahnke, V., Eds.; Oxford University Press: Oxford, UK, 2000; pp. 168–186.
27. Audretsch, D.B. New-firm survival and the technological regime. *Rev. Econ. Stat.* **1991**, *73*, 441–450. [[CrossRef](#)]
28. Wang, Y.D.; Roijakkers, N.; Vanhaverbeke, W.; Chen, J. How chinese firms employ open innovation to strengthen their innovative performance. *Int. J. Technol.* **2012**, *59*, 235–254. [[CrossRef](#)]
29. He, Z.; Wong, P. Exploration and exploitation: An empirical test of the ambidexterity hypothesis. *Organ. Sci.* **2004**, *15*, 481–494. [[CrossRef](#)]
30. McGrath, R.G. Business models: A discovery driven approach. *Long Rang. Plan.* **2010**, *43*, 247–261. [[CrossRef](#)]

31. Liu, Y.; Wang, X.; Yin, M.; Dong, C. The effect of internet embedding on the acquisition of entrepreneurial team resources—The mediating effect of entrepreneurial learning. *Stud. Sci. Sci.* **2016**, *34*, 916–922.
32. Karl, P. *The Economy as Instituted Process in Trade and Market in the early Empire*; Free Press: New York, NY, USA, 1957.
33. Mitchell, T.R.; Holtom, B.C.; Lee, T.W.; Sablinski, C.J.; Erez, M. Why people stay: Using job embeddedness to predict voluntary turnover. *Acad. Manag. J.* **2000**, *44*, 1102–1121. [[CrossRef](#)]
34. Granovetter, M.S. The Strength of Weak Ties. *Am. J. Sociol.* **1973**, *78*, 1360–1380. [[CrossRef](#)]
35. Xu, M.; Chen, X.; Yu, H. Impact of Internet Embeddedness on Social Capital. *World Sci. Technol. Res. Dev.* **2014**, *36*, 698–702.
36. Feher, A.; Towell, E. Business use of the internet. *Internet Res. Electron. Netw. Appl. Policy* **1997**, *7*, 195–200. [[CrossRef](#)]
37. Bargh, J.A.; Mc Kenna, K.Y.A. The internet and social life. *Annu. Rev. Psychol.* **2004**, *55*, 73–90. [[CrossRef](#)] [[PubMed](#)]
38. George, G.; Bock, A. The business model in practice and its implications for entrepreneurship research. *Entrep. Theory Pract.* **2011**, *35*, 83–111. [[CrossRef](#)]
39. Zott, C.; Amit, R. Business model design: An activity system perspective. *Long Rang. Plan.* **2010**, *49*, 216–226. [[CrossRef](#)]
40. Teece, D.J. Business models, business strategy and innovation. *Long Rang. Plan.* **2010**, *43*, 172–194. [[CrossRef](#)]
41. Chesbrough, H.; Rosenbloom, R.S. The Role of the Business Model in Capturing Value from Innovation: Evidence from Xerox Corporation Technology Spin-off Companies. *Ind. Corp. Chang.* **2002**, *11*, 529–555. [[CrossRef](#)]
42. Bock, A.; Gerard, G. Business model innovation and strategic flexibility: A study of the effects of informal and formal organization. In Proceedings of the Sumantra Ghoshal Conference for Managerially Relevant Research, London, UK, 18 February 2010.
43. Paul, T. Business Models for Electronic Markets. *J. Electron. Mark.* **1998**, *8*, 3–8.
44. Amit, R.; Zott, C. Creating value through business model innovation. *Sloan Manag. Rev.* **2012**, *53*, 41–49.
45. Demil, B.; Lecocq, X. Business model evolution: In search of dynamic consistency. *Long Rang. Plan.* **2010**, *43*, 227–246. [[CrossRef](#)]
46. Casadesus-Masanell, R.; Zhu, F. Business model innovation and competitive imitation: The case of sponsor-based business models. *Strateg. Manag. J.* **2013**, *34*, 464–482. [[CrossRef](#)]
47. Chesbrough, H. Business model innovation: Opportunities and barriers. *Long Range Plan.* **2010**, *43*, 354–363. [[CrossRef](#)]
48. Hamel, G. *What Matters Now: How to Win in a World of Relentless Change, Ferocious Competition, and Unstoppable Innovation Hardcover*; Jossey-Bass: San Francisco, CA, USA, 2012.
49. Johnson, M.W.; Christensen, C.M.; Kagerman, H. Reinventing your business model. *Harv. Bus. Rev.* **2008**, *86*, 50–59.
50. Li, C.R.; Yeh, C.H. Leveraging the benefits of exploratory learning and exploitative learning in NPD: The role of innovation field orientation. *R&D Manag.* **2017**, *47*, 484–497.
51. Christensen, C.M.; Raynor, M.E. *The Innovators Solution: Creating and Sustaining Successful Growth*; Harvard Business School Press: Boston, MA, USA, 2003.
52. Mc Dougall, P.P.; Covin, J.G.; Robinson, R.B.; Herron, L. The effects of industry growth and strategic breadth on new venture performance and strategy content. *Strateg. Manag. J.* **1994**, *15*, 537–554. [[CrossRef](#)]
53. Krishnan, R.; Martin, X.; Noorderhaven, N.G. When Does Trust Matter to Alliance Performance? *Acad. Manag. J.* **2006**, *49*, 894–917. [[CrossRef](#)]
54. Baum, J.R.; Locke, E.A.; Smith, K.G. A Multidimensional Model of Venture Growth. *Acad. Manag. J.* **2001**, *44*, 292–303.
55. Cavazos, D.E.; Patel, P.; Wales, W. Mitigating environmental effects on new venture growth: The critical role of stakeholder integration across buyer and supplier groups. *J. Bus. Res.* **2012**, *65*, 1243–1250. [[CrossRef](#)]
56. Atuahene-Gima, K. Resolving the capability-rigidity paradox in new product innovation. *J. Mark.* **2005**, *69*, 61–83. [[CrossRef](#)]

57. Zott, C.; Amit, R. The fit between product market strategy and business model: Implications for firm performance. *Strateg. Manag. J.* **2008**, *29*, 1–26. [[CrossRef](#)]
58. Hills, G.; Lumpkin, G.T.; Singh, R.P. Opportunity Recognition: Perceptions and Behaviors of Entrepreneurs. *Front. Entrep. Res.* **1997**, *3*, 203–218.
59. Zott, C.; Amit, R.; Massa, L. The business model: Recent developments and future research. *J. Manag.* **2011**, *37*, 1019–1042.



© 2017 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).