

Innovation Subjects Impacting Business Model Changes in Chinese Wooden Furniture Manufacturers: An Empirical Study

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Abstract

In the era of a digital economy, business model innovation takes on a critical significance to the transformation of conventional manufacturing enterprises. Factors for the innovation originate from both inside and outside the manufacturing enterprises. Previous studies focused on external factors, and few on the main factors of innovation. With Chinese wooden furniture manufacturing enterprises as an example, the paper focuses on the effect of innovation subject factors on the formation and practice of business model innovation planning. It was found that employees of all ages and levels have different ideas about business model innovation practice, and learning and absorptive abilities of employees, entrepreneurship, and factors at all dimensions of enterprise culture at the organizational level play an active promoting role at different stages of business model innovation, among which enterprise culture has a regulatory effect. This study enriches the research field about the effect of innovation subjects on business model innovation behaviors, and provides reference for wooden furniture manufacturing enterprises and even conventional manufacturing enterprises to facilitate the realization of business model innovation.

With the advent of the digital economy era, the business community and academia pay more attention to the studies on business models and innovation. The conventional manufacturing industry must be transformed into the modern manufacturing industry to adapt to the ever-changing external environment. In general, enterprise transformation has always been concentrating on the innovation of products and key procedures, but business model innovation has higher and more sustainable returns compared to the development of new products or business procedures (Lindgardt et al. 2009). Bucherer et al. (2012) also highlighted that it is not enough to carry out innovation of products or production procedures in a specific environment. The role of business model innovation has become increasingly important. Thus, innovation of business models is an essential link in the process of transformation of conventional manufacturing enterprises. Enterprises in various industries have different development degrees and external environments, and the antecedents of business model innovation have discrepancies in the ways and degrees of the effect on innovation behavior. In existing studies on the antecedents of business model innovation by scholars, no matter the development and application of science and technologies

(Amit and Zott 2001, Reuver et al. 2009), the change of the macro system (Moyon and Lecocq 2010, Teece 2010), the opportunities and threats in the market (Lambert and Davidson 2013), or the in-depth understanding of customers (Frankenberger et al. 2013, Masanell and Zhu 2013), all the antecedents come from outside the enterprises. However, no matter how the external environment changes, business model innovation will not be generated and realized spontaneously. People, as the main body of organizational behaviors of enterprises as well as the planners and implementers of business

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model innovation, play an important dynamic role in the innovation behaviors. The perception of the enterprise management on changes in the external environment can influence how an organization reacts to external threats (Doz and Kosonen 2010, Cavalcante et al. 2011), which directly determines whether an enterprise will make decisions of business model innovation in response to the changes. In addition, employees' abilities of recognition, prediction, integration, and absorption when they are facing a dynamic external environment can influence business model innovation of an enterprise (Augier and Teece 2009). The above findings suggest that the discrepancies in the cognitions of business activity participants on business model innovation result in their different effects on business model innovation behaviors, and the resources and characteristics formed in the development course of enterprises will have different effects on the behaviors. For instance, strategic objectives drive enterprises to innovate business models towards specific directions (Smith et al. 2010, Sinkovics et al. 2014). Organizational learning is conducive to heightening enterprises' cognition of the external environment and understanding of external knowledge and information, such that they can learn from successful experience and avoid risks. Also, enterprises can continuously improve their management structure, attract professionals, and build intangible assets in practice based on organizational learning to realize business model innovation (Dunford et al. 2010, Itami and Nishino 2010). At present, few studies focus on the effect of internal innovation factors of Chinese conventional manufacturing industries, especially the main bodies of business model innovation—business organizations and employees.

Only a few overall studies on the business model innovation process in the equipment manufacturing industry and home appliance manufacturing industry have mentioned some factors of the innovation subject. For example, Cheng and Liang (2019) took the Hubei equipment manufacturing industry as an example to study the factors affecting the integration of technological innovation and business model innovation and proposed to strengthen the positive perception of integration expectations by participating subjects and strengthen cooperation among innovative subjects. This can promote the in-depth integration of technological innovation and business model innovation. Ma (2021) studied the influencing factors of business model innovation in the manufacturing industry under the background of the digital economy, and the results showed that entrepreneurship and corporate cognition are parts of the driving factors of business model innovation. Xia and Fang (2017) also hold the same view. Their research proves that entrepreneurship is equally important in the business model innovation process of traditional home appliance companies. X. Wang (2016) proved the vital role of employee literacy from the perspective of servitization of manufacturing enterprises. Liang's (2021) study did not distinguish between industries and simply demonstrated its importance in the business model innovation process from the perspective of knowledge acquisition. Moreover, studies of other industries are of not representative due to industrial differences. Therefore, in this study, an empirical analysis on the effect of the main factors of business model innovation on innovation behavior through a questionnaire survey was conducted with Chinese wooden furniture manufacturing enterprises, which are

Table 1.—Keywords of internal influence factors of business model innovation.

Level	Keywords	Percentage
Organization	Enterprise culture	13.4%
	Innovation legitimacy	9.9%
	Organizational resources	6.7%
Employee	Learning and absorptive ability	9.2%
	Entrepreneurship	6.6%
	Incentives	6%

typical conventional manufacturing enterprises, as a study object. In recent years, the concept of “green, low-carbon, energy conservation, and environmental protection” has been rooted into Chinese furniture manufacturing enterprises. As the furniture industry is located downstream in the industrial chain, factors including efficient utilization of forestry resources, energy conservation, and emission reduction in production and the use of low-carbon and environmental materials have an important effect on ecological environment protection. Thus, it is imperative for manufacturing enterprises to carry out green transformation. With the continuous optimization of the national green development policy, carbon trading and carbon finance systems, and production technologies, consumers develop increasing recognition of green environmental protection products, so it is an inevitable trend for the industry to switch to a new development track through green transformation. From a theoretical perspective, this study further enriches the research field on the impact of innovative subjects on business model innovation behavior and fills the gap in specialized research in the traditional manufacturing field. From the perspective of corporate practice, this study can provide a decision-making reference for traditional wood manufacturing companies that adhere to green concepts and are committed to business model innovation. Especially under the changing digital economic environment, the conclusions of this study can also provide certain guidance for the business model innovation behavior of other traditional manufacturing companies.

Study Design

According to the study by B.C. Wang (2016), the influencing factors from the main body of business model innovation are divided into the organizational level and the employee level. The rates of high-frequency factors occurring in the study are listed in Table 1.

The occurrence frequency of the keywords in Table 1 among the 45 keywords reached 51.8 percent, indicating that they are important factors for business model innovation. Among the top keywords, the proportions of entrepreneurship and learning and absorptive ability at the employee level is close to that of enterprise culture at the organizational level. Therefore, enterprise culture, learning and absorptive ability, and entrepreneurship were adopted in the study to explore the effect of the above innovative main body factors on business model innovation behaviors. In addition, specific factors at the organizational level have a certain degree of effect on employees' behaviors and modes of thinking, so it is also necessary to consider their regulatory role between the individual level and business model innovation.

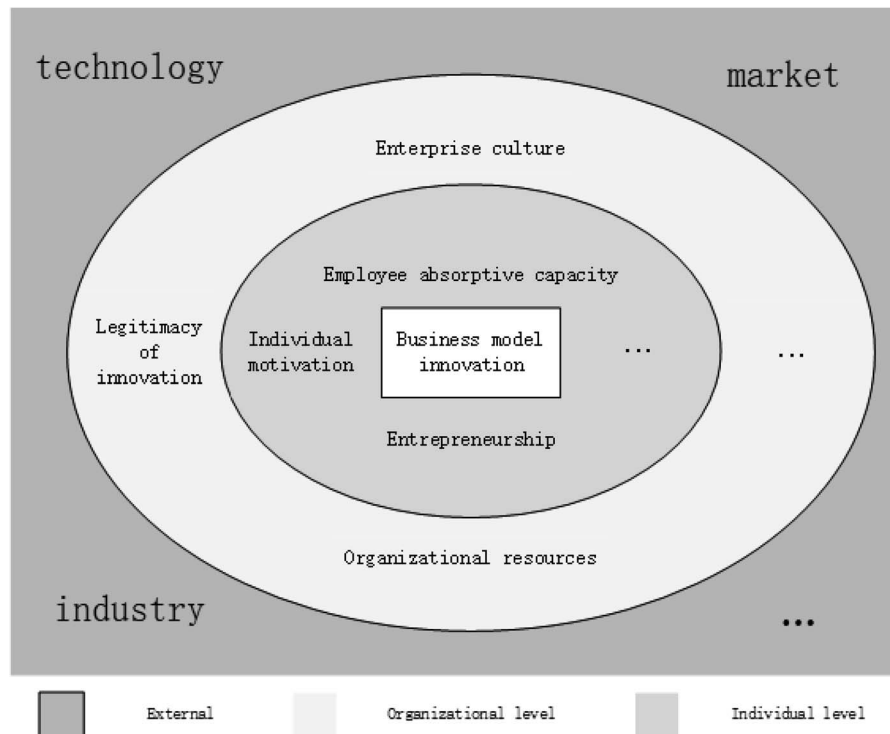


Figure 1.—Factors influencing business model innovation at different levels.

In previous studies, scholars generally used the activity stage model to describe the innovation process. For example, de Jong and Hartog (2010) divide the innovation process into four stages, namely opportunity exploration, idea generation, alliance building, and idea implementation. In their study of customer-driven business model innovation, Pynnonen et al (2012) also divided business model innovation into four stages, namely analyzing customer value preferences, innovating according to customer needs, implementing customer research, and implementing new business models. Although the stages of the innovation process divided in scholars' activity stage models are different, they can basically be divided into two stages: the generation of new ideas and the application of new ideas. Therefore, in recent years, scholars' innovation process models have gradually been simplified, and a two-stage model has been generally adopted, which can be referred to as the two stages of creativity and application, such as described by Dorenbosch et al. (2005), Kheng et al. (2013), Krause (2004), and Oukes (2010).

Business model innovation is a dynamic process. In recent years, scholars have gradually simplified the study model of the innovation process, which can be summarized as two stages: the generation of innovative ideas and the application of innovative achievements (Ding et al. 2013, Kheng et al. 2013). This is the same as in the study by Trimi and Mirabent (2012), and also consistent with the views of McAdam and McClelland (2002). New ideas, as the primary condition of business model innovation, are the beginning of the business model innovation process. Whether business model innovation can be finally realized must be tested through application. Therefore, the process of business model innovation is divided into two stages: the "planning and formation" of innovative ideas and the "practice" of innovative schemes, to study the effect of enterprise

culture at the business level, learning and absorptive ability at the individual level, and entrepreneurship on business model innovation behaviors. Combining the views of scholars, a three-level framework of factors influencing business model innovation can be formed (Figure 1), and a preliminary research route for this study is proposed (Figure 2).

Methodology

Data collection

The questionnaire used in this study comprises five parts. The first part represents the basic information of respondents: age, gender, educational background, and position. The second part is concerned with business model innovation. As the dependent variable of the study, it primarily aims to explore the attitude of management to the planning and practice of business model innovation, and it involves 14 questions. The third part refers to the dimension of entrepreneurship, mainly covering employees' views on spirits of collaboration, innovation, learning, and corporate social responsibility, and it comprises 14 questions. The fourth part is the dimension of the learning and absorptive ability, with a major aim of investigating the employees' understanding, recognition, and sharing of knowledge, as well as their willingness to participate in acquiring novel knowledge. This part includes 16 questions. The fifth part is the dimension of enterprise culture, with a major aim of investigating the effect of different dimensions in enterprise culture; it is composed of 19 questions. The questionnaire and the theoretical basis for the questions are presented in the appendix.

Considering the similarity of economic development and market environment in the places of the respondent enterprises, Shandong Province was selected as the

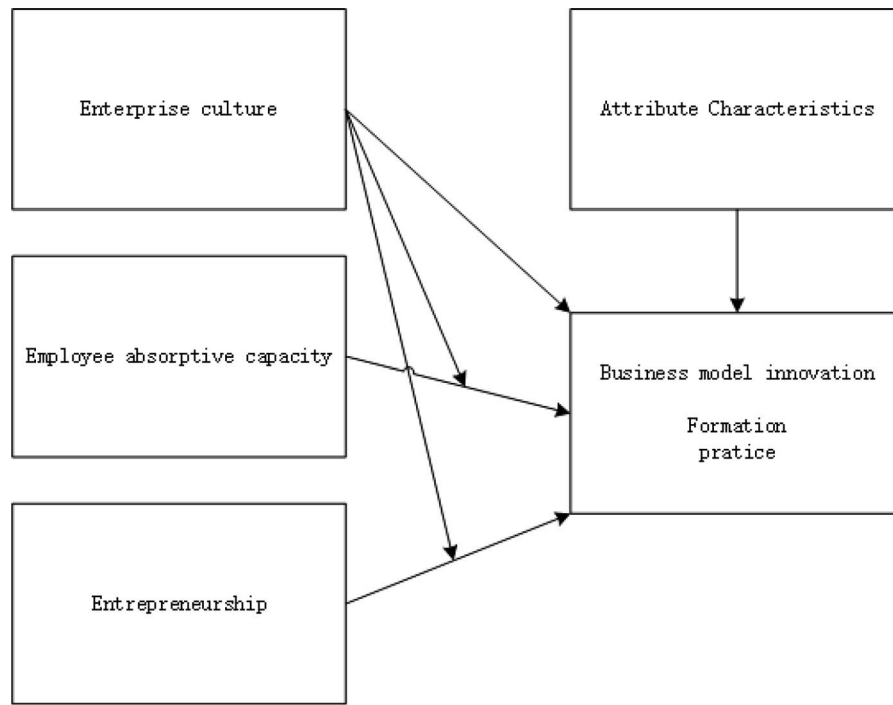


Figure 2.—Preliminary study design.

source of this survey. Shandong is one of the five industrial clusters of wooden furniture in China, with development reaching the upper-middle level and a good industry representativeness in terms of scale, environment, and maturity. This study focuses on the impact of innovative subjects on innovative behavior, which requires fully eliminating the impact of differences in external environmental factors on the cognition of innovative subjects. Enterprises in an industrial cluster face similarities in the external environment, which can solve this problem of differences. Thus, based on careful consideration and evaluation, 20 standardized wooden furniture manufacturing enterprises in Shandong were randomly selected as the survey objects with the assistance of the Shandong Furniture Association, including wooden furniture manufacturing enterprises, such as brand furniture manufacturing enterprises integrating production and marketing, export-oriented furniture manufacturing enterprises, primary furniture product manufacturing enterprises, or furniture part Original Equipment Manufacturers. Twelve questionnaires were distributed to management of different levels in each enterprise totaling 240 questionnaires. One hundred eighty-one of 214 questionnaires finally collected are valid, with a valid rate of 85 percent. The personal characteristics of the management personnel of the surveyed enterprises are listed in Table 2.

In accordance with the personal characteristics of the respondent, the current proportion of male managers in Chinese wooden furniture manufacturing enterprises is significantly higher than that of female managers, which is correlated with a characteristic that Chinese wooden furniture production pertains to a conventional manufacturing industry. For the age structure, the proportion of young and middle-aged managers under 44 years old reaches 90.6 percent. In general, the education of the managers also has been optimized. The proportion of

managers with higher education has reached 92.3 percent, including 48.6 percent of them with undergraduate degrees. It can be preliminarily speculated for the two characteristics of age and education that the talent structure of Chinese wooden furniture manufacturing enterprises has been optimized. Young managers with higher educational background are more likely to accept novel ideas, have stronger learning ability, and play a more significant role in promoting business model innovation. Moreover, 49.2 percent of the respondents are middle-level managers of the enterprises, i.e., the “managers of functional departments” defined in this study. In accordance with the organization theory, this group is at the middle level of the management, effectively connecting the decision-making level and the production and operation line employees of an enterprise. Furthermore, this group gains more insights

Table 2.—Sample characteristics.

Attribute characteristics		<i>n</i>	Percentage
Gender	Male	155	85.6%
	Female	26	14.4%
Age	Under 25 yr	24	13.3%
	25–34 yr	55	30.4%
	35–44 yr	85	47%
	Over 45 yr	17	9.4%
Education	Secondary education	14	7.7%
	College	72	39.8%
	Undergraduate	88	48.6%
	Postgraduate	7	3.9%
Position	Primary management	63	34.8%
	Midlevel management	89	49.2%
	Senior management	23	12.7%
	Decision level	6	3.3%

Table 3.—Exploratory factor analysis of questionnaire.

Factor group	Naming	Questions ^a	Cronbach's α	KMO ^b test	Barlett test	
					χ^2	Significance
Learning and absorptive ability (H1)	Identification and sharing	38, 43, 44	0.924	0.859	2,547.206	0.001
	Understanding and integration	33, 34, 35, 37, 39, 41, 42				
	Personal investment	36, 40				
Entrepreneurship (H2)	Development and innovation spirits	16, 17, 18, 27	0.888	0.812	2,038.386	0.001
	The learning spirit	21, 23, 26				
	The cooperative and win-win spirit	20, 24				
	Entrepreneurs' social sense of responsibility	19, 28, 29				
Enterprise culture (H3)	The standardization	47, 50, 54, 56, 61, 62	0.891	0.837	2,920.935	0.001
	Innovative	51, 53, 55, 57				
	Mutual trust	45, 46, 49				
	Equality	48, 52, 63				
	Bureaucratic	58, 59				
Business model innovation (dependent variable)	Formation of business model schemes	3, 4	0.915	0.888	1,336.287	0.001
	Implementation of business model innovation	1, 7, 8, 10, 11, 12, 13, 14				

^a See Appendix.

^b KMO = Keiser-Meyer-Olkin.

into the actual situation of enterprises' operation and holds clearer viewpoints.

Preliminary data analysis and hypotheses formation

Preliminary data analysis.—In this study, the dimensions of the questionnaire were reduced using the exploratory factor analysis method, and the number of variables was reduced by searching for common factors. The principal component analysis was conducted, with the characteristic root as 1, followed by variance maximization rotation. The applicability of the questionnaire data for factor analysis was examined using Keiser-Meyer-Olkin and Barlett's spherical tests. Factor analyses were conducted on the four independent parts of the questionnaire, representing the independent variables (the third, fourth, and fifth parts) and the dependent variables (the second part). The results are listed in Table 3.

Hypothesis Formation

Dimension of learning and absorptive ability.—Gaining novel knowledge is most conducive to the development of innovation (Bandura 1986). Application of novel knowledge endows conventional business activities with new elements, and partial or complete innovation of conventional business models will breed new business models. Bucic and Ngo (2012) consider that low knowledge absorptive ability will hinder the transmission and accumulation of knowledge, whereas the high ability can stimulate more innovation. Accordingly, there is a positive correlation between employees' learning absorptive ability and business model innovation. In the era of digital economy, when the enterprise management deals with the problem of a business model, the challenge facing them is the information saturation caused by the development of "big data" technologies, instead of the lack of information. Baron and Byrne (2003) defined information overload as a state in which an individual's information processing capacity is exceeded. In this

state, people must adopt a quick and simple way to process a large amount of information. This method must be reasonable in most situations, that is, people need an ability to identify useful external information. People must be able to process a large amount of information at a high speed, and the way should be as reasonable as possible. Moreover, based on the ability of knowledge identification, managers will share knowledge, gain more insights into knowledge through group interaction, and reach a consensus (Mintzberg et al. 1998), such that new business models are created. Given the literature discussion and the results of exploratory factor analysis, there are two assumptions:

H1-1. Identification and sharing of novel knowledge by the enterprise management has a positive and significant effect on the formation of business model innovation schemes.

H1-2. Identification and sharing of novel knowledge by the enterprise management has a positive and significant effect on business model innovation practice.

Innovation subjects have an access to novel knowledge through knowledge identification and sharing, but it cannot guarantee that the knowledge is fully absorbed by organizational members. Innovation can only be generated by fully understanding the knowledge and integrating it into the organization (Roberts et al. 2012). Innovation subjects will integrate novel knowledge and experience to obtain more innovative ideas (Nonaka and Takeuchi 1995). Roberts et al. (2012) believe that pure exposure to external knowledge is not enough to ensure the successful absorption of this knowledge. Knowledge must be absorbed or transferred into the enterprise's knowledge base, that is, knowledge must be understood and integrated to produce innovation. Formation of the above new ideas is divided into the formation of brand-new thinking and the improvement of original thinking, but it is an innovation process. Through the integration and understanding of novel knowledge, innovation subjects will have a new understanding of the original

business model and propose ways to improve it. Therefore, the following is assumed: H1-2-1. Understanding and integration of novel knowledge by the enterprise management has a positive and significant effect on the formation of business model innovation schemes.

H1-2-2. Understanding and integration of novel knowledge by the enterprise management has a positive and significant effect on business model innovation practice.

According to Wang's (2016) study, employee personal investment is also an important element of employee learning and absorptive ability. Cohen and Levinthal (1990) believe that dispatching employees to learn new skills is an investment in improving their learning and absorptive ability. This ability must be formed in a long-term investment and accumulation. The more an organization invests in its research and development (R&D), the stronger its employees' learning and absorptive ability will be, and the stronger their innovation ability will be (Tsai 2001). Dutse (2013) points out that different investment is a key reason for the discrepancy in innovation degrees of enterprises. Harvey et al. (2010) also believe that R&D expenses, research intensity, development investment, and the number of developers are all important indicators to measure the level of absorptive capacity. The above views are also applicable to the improvement of employees' learning and absorptive ability. Personal investment in this study refers to the time, energy, and money invested by employees to absorb knowledge related to business model innovation. Thus, the following statements are assumed:

H1-3-1. Personal investment of the enterprise management in novel knowledge has a positive and significant effect on the formation of business model innovation schemes.

H1-3-2. Personal investment of the enterprise management in novel knowledge has a positive and significant effect on business model innovation practice.

Entrepreneurship dimension.—The uncertainty of the results always arouses the concern of people facing changes. They yearn for changing the status quo of enterprises while worrying about the negative influence after the changes, which causes their ambivalent attitude. Only people with the entrepreneurial spirit can overcome the above negative effects. Entrepreneurship can be manifested everywhere, and it can facilitate the adjustment of the status quo to fulfill goals (Soto 2010). Morris also highlighted that entrepreneurship can promote the realization of innovation (e.g., new products, new services, new procedures, new markets, and novel technologies) (Morris 1998). Bessant and Tidd (2011) consider that entrepreneurship drives innovation, and effective changes will not occur without it. For business model innovation, innovation subjects will eliminate conflicts with two methods as follows. One is to reduce business model innovation and ignore its significance, and the other is for subjects to change their attitudes and behaviors and persevere in business model innovation. The latter is more active, and it is manifested as the innovation spirit in

entrepreneurship (Wang 2016). Given the above analysis, it is assumed that the following statements are true:

H2-1-1. Development and innovative spirits of entrepreneurs have a positive and significant effect on the formation of business model schemes.

H2-1-2. Development and innovative spirits of entrepreneurs have a positive and significant effect on the implementation of business model innovation.

When coming to realize that the business model innovation will more significantly contribute to the operation, innovation subjects will also be aware of the gap between their actual state and the expected state in the future. They will find ways to fill the gaps in relevant knowledge, which represents a process of acquiring novel information, i.e., a process of gaining novel knowledge. Baron and Byrne (2003) pointed out that one can reduce the degree of cognitive holes by acquiring new information to support one's attitudes or behaviors. When corporate employees recognize a more effective business model, they will realize the gap between the current state and the future state, and the process of filling this gap often requires the acquisition of new information. Obtaining new information is essentially a job-search process: learning to use techniques and methods to apply more effective business models to the company's operations. The process of launching business model innovation by learning some methods and theories refers to a process with continuous and dynamic involvement, i.e., a process of keeping on learning to obtain knowledge. Given the above analysis, the following is assumed:

H2-2-1. The learning spirit of entrepreneurs has a positive and significant effect on the formation of business model schemes.

H2-2-2. The learning spirit of entrepreneurs has a positive and significant effect on the implementation of business model innovation.

All the knowledge required in the process of business model innovation requires collaboration to give full play to the strength of the team. Collaboration and enterprising spirit are important components of entrepreneurship (Chen and Hao, 2008). Through the pooling of group knowledge, it is necessary to obtain as much useful information as possible to promote the smooth realization of business model innovation. For example, the role of social networks in business model innovation is to obtain the necessary knowledge for business model innovation through the cooperation of network nodes in social relations (Li et al. 2010, Ding et al. 2013). Based on the above analysis, the following is assumed:

H2-3-1. The cooperative and win-win spirit of entrepreneurs has a positive and significant impact on the formation of business model planning.

H2-3-2. The cooperative and win-win spirit of entrepreneurs has a positive and significant impact on the implementation of business model.

The factor of "responsibility" has also been taken seriously with the deepening understanding of theory and practice. Scholars' studies on the sense of responsibility focus

on the field of corporate social responsibility. Social responsibility is an important part of entrepreneurship (Xu and Wang 2008). Chinese enterprises take responsibility as a mission under the effect of conventional ideology. Academic studies also pay attention to the entrepreneurs' sense of responsibility. For instance, some scholars interpret entrepreneurs' sense of responsibility from two aspects of basic social responsibility and nonbasic social responsibility (Ju 2012), and some consider that society and personality are essential components of entrepreneurship (Yu 2012). Employees holding a strong sense of responsibility and courage to take responsibility will develop a stronger awareness of innovation, thus playing a more proactive role in business model innovation. In contrast, ones with low sense of responsibility tend to be content with things as they are while having low willingness to participate in expediting business model innovation. Accordingly, the following statements are assumed:

H2-4-1. Entrepreneurs' social sense of responsibility has a positive and significant effect on the formation of business model schemes.

H2-4-2. Entrepreneurs' social sense of responsibility has a positive and significant effect on the implementation of business model innovation.

Dimension of enterprise culture.—In the theoretical or business circles, a view is proposed that the constraints caused by standardized management will hinder the motivation of employees to innovate. The reason for this view is the differences in the understanding of “standardization.” The critical point of standardization is that rules to be followed should be established. What effect is exerted on innovation is determined by the content to be standardized. Organization standardization will not significantly limit the enthusiasm and flexibility of employees, and they can still complete work as their will. A premise for any enterprise to ensure the realization of innovation is standardized management. Only standardized management is capable of stimulating employees' innovation enthusiasm, nurturing innovation ability, and expediting the improvement of innovation ability, while ensuring the efficient operation of the enterprise organization (Shu 2008). Thus, the following assumptions:

H3-1-1. The standardization culture in enterprise culture has a positive and significant effect on the formation of business model schemes.

H3-1-2. The standardization culture in enterprise culture has a positive and significant effect on the implementation of business model innovation.

The innovative enterprise culture is result-oriented, characterized by the courage to accept challenges and the spirit of adventure. This culture encourages employees to develop innovative thinking (Wallach 1983). Employees are allowed to freely express opinions and propose ideas and unique views on work, without being punished and excluded for making mistakes (Nemeth and Staw 1989). Innovative culture boosts the innovative willingness and openness of an enterprise. In accordance with the environment and competitive advantages, enterprises are enabled to promote the

innovation of business models under the effect of innovative culture. At the same time, if the enterprise culture pays attention to innovation, the organization will also invest more resources to promote innovation (Hurley and Hult 1998). Accordingly, it is assumed that the following statements are true:

H3-2-1. Innovative culture in enterprise culture has a positive and significant effect on the formation of business model schemes.

H3-2-2. Innovative culture in enterprise culture has a positive and significant effect on the implementation of business model innovation.

In social science, trust is considered a type of interdependence. Trustworthy individuals or organizations abide by the code of ethics, laws, and their promises. Interdependence means that there is an exchange correlation between two parties, which are conditions to obtain interests for each other. In management, trust is a faith that the other party will not harm its own interests. Organizational trust is considered as one of the factors that influence employees' innovative behaviors. An empirical study by Li and Xu (2018) has confirmed that trust strengthens the bonding role of employee innovation teams and plays an intermediary role in nonmaterial incentives and innovation performance. Likewise, Zhang and Yang (2017) also explained the process and mechanism of the effect of trust among relevant interest groups within an enterprise on innovation from the emotional and cognitive dimensions of trust, and their result revealed that both trust modes positively enhance the innovation ability of the management. Some studies have also noted that trust from organizations, leaders and colleagues will have positive effect on the innovative behavior of knowledge-based employees in young teams (Liu 2017). Thus, the following assumptions are made:

H3-3-1. Mutual trust culture in enterprise culture has a positive and significant effect on the formation of business model schemes.

H3-3-2. Mutual trust culture in enterprise culture has a positive and significant effect on the implementation of business model innovation.

At the initial stage of innovation of an enterprise, the organization has not yet formed a complete innovation knowledge system and a good innovation environment, so innovation activities are mainly inspired by the enterprise culture with innovative characteristics. Low power distance, long-term equality-oriented culture, and the avoidance of low uncertainty guide employees to try exploratory innovation freely and equally (Guo 2014). An equal enterprise culture environment will greatly promote the development of innovation. Accenture (2019) highlighted in its research report in 2019 that the employees in enterprises paying attention to equality culture have an innovative thinking ability five times higher than ones in enterprises without this attention. On the basis, we assume the following:

H3-4-1. Equality culture in enterprise culture has a positive and significant effect on the formation of business model schemes.

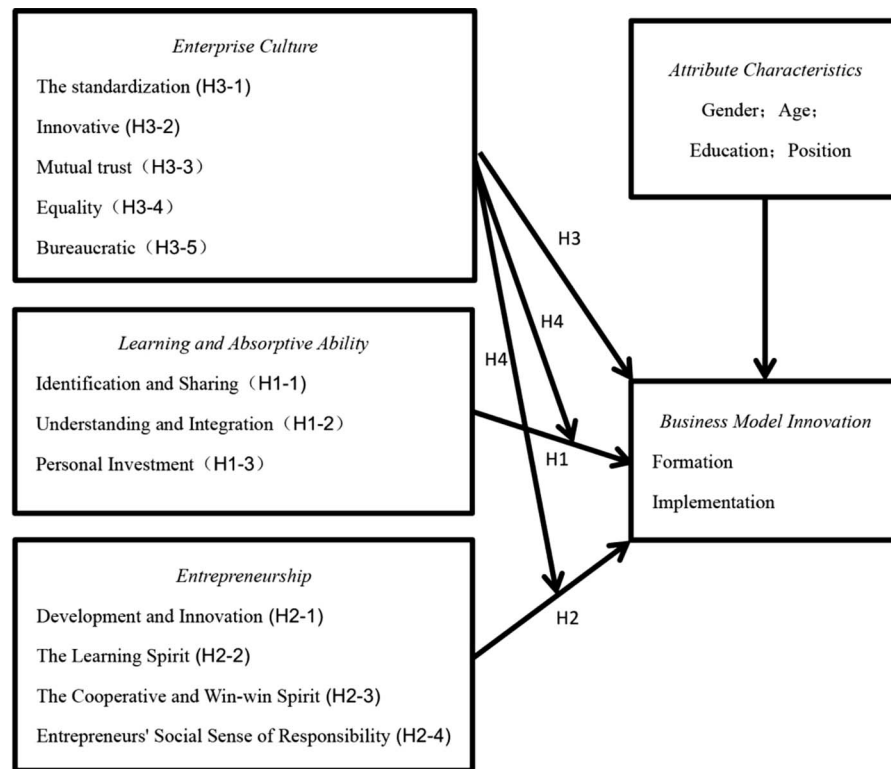


Figure 3.—Final framework model.

H3-4-2. Equality culture in enterprise culture has a positive and significant effect on the implementation of business model innovation.

Corresponding to equality, power orientation is the enterprise culture of some enterprises. Bureaucratic culture is the representative of power-oriented culture, characterized by clear authorization, delineated responsibilities, working content tending to be similar, and emphasis on system and order of work in an organization (Wallach 1983). Bureaucratic culture stresses obedience, without tolerance to deviations, such that it cannot achieve exploratory learning or discover novel practical technologies and standards (Sorensen 2002). Innovation will be stifled under such strong constraints. On that basis, it is assumed that the following statements are true:

H3-5-1. Bureaucratic culture in enterprise culture has a negative and significant effect on the formation of business model schemes.

H3-5-2. Bureaucratic culture in enterprise culture has a negative and significant effect on the implementation of business model innovation.

Regulatory effect of enterprise culture.—The elements of enterprise culture constitute the internal environment of an enterprise. Values in the environment determine that employees should consider the organizational characteristics of the enterprise, the standards of core competitiveness and the code of conduct at their individual level. Enterprise culture will evolve over time and guide employees to understand “what is important, what is worthy, and what is possible” (Brentani and Kleinschmidt 2004). In the

meanwhile, enterprise culture is manifested in practice, especially for senior leaders and managers of enterprises (Andriopoulos 2001). Among the hypotheses from the three dimensions in this study, enterprise culture is a factor at the organization level, while learning and absorptive ability and entrepreneurship are factors at the employee level. Enterprise culture will influence various relationships at the employee level through the internal environment it creates and under the action of “downward causality” (Hodgson 2004). Therefore, further assumptions include the following:

H4-1-1. Enterprise culture plays a regulatory role in the correlation between learning and absorptive ability and the formation of business model innovation schemes.

H4-1-2. Enterprise culture plays a regulatory role in the correlation between learning and absorptive ability and the implementation of business model innovation.

H4-2-1. Enterprise culture plays a regulatory role in the correlation between entrepreneurship and the formation of business model innovation schemes.

H4-2-2. Enterprise culture plays a regulatory role in the correlation between entrepreneurship and the implementation of business model innovation.

Based on the above hypotheses, the final framework of this study is shown in Figure 3.

Results and Discussion

Effect of respondents’ personal attributes

The independent-sample *t* test and one-way analysis of variance were used to study the effects of personal attributes

Table 4.—The influence of personal attributes on business model innovation.

Dependent variable	N	Mean	Attribute characteristics	T/F ^a	Significance
Formation of business model schemes	181	4.15745856	Gender	-0.359	0.720
			Age	0.531	0.661
			Education	2.243	0.085
			Position	1.550	0.203
Implementation of business model innovation	181	3.86395028	Gender	-0.976	0.330
			Age	4.126	0.007
			Education	0.225	0.879
			Position	4.276	0.006

^a T/F =T-value/F-value.

of the management on business model innovation, so as to reveal the effects of different characteristics of managers on business model innovation. The results are listed in Table 4.

The test results indicate that the personal attributes have different effects on the formation of business model innovation schemes and innovation practice. The gender, age, education, and level of the management do not show differences in the effect on their views about the formation of enterprises' business model innovation schemes. However, the age and level of the management have significant differences in the effect on the views about the practice of business model innovation. With the growth of age and the change of position in an organization, managers have different attitude towards innovation practice, which may be because the improvement of social experience with the age helps the managers form more and more rational cognition about novel things, such that their attitude towards innovation is more cautious. The managers at all levels in an enterprise have different responsibilities. The higher position they have, the greater responsibility they should take. Thus, when facing innovation practice, they will consider many factors comprehensively and cautiously. As a result, the factors of age and level should be selected as control variables to investigate their effect on the correlation between independent variables and business model innovation practice. Furthermore, based on the difference analysis of the views about business model innovation based on the study hypotheses and respondents' personal attributes, hypothesis tests were conducted on the correlation between independent variables and dependent variables.

Effect of learning and absorptive ability

The results of regression analysis are listed in Table 5. The variables of the dimension of the learning and absorptive ability positively affect the formation of business model innovation schemes, whereas only the "identification and sharing" ability reaches a significant level. After the gradual replacement and deletion of nonsignificant variables, only the ability of "identification and sharing" has a positive and significant effect on the formation of business model innovation schemes. However, the adjusted R^2 is lower, thus suggesting that many other factors affect the formation of business model innovation schemes. According to the regression results, enterprises should enhance the identification and sharing ability of innovation subject teams for external knowledge and information when they conceive business model innovation. In practice, human resources training should be strengthened; it is imperative to increase employees' awareness of the significance of business model

innovation, a "learning-oriented organization" should be formed, and the system should facilitate the formation of business model innovation schemes.

After the control variables of "age" and "level" are introduced, the variable of the learning and absorptive ability dimension significantly promotes the practical application of business model innovation. This result demonstrates that at the second stage of business model innovation, the entire innovation team should stress the learning and sharing of information and knowledge, gain insights into knowledge, and conduct meta-analysis of knowledge. In addition, it should devote more energy to absorbing novel knowledge and enhancing learning ability. The process of business model innovation refers to a systematic and complex project. The uncertainty of the results caused by innovation urges innovation subjects to be more cautious and serious during practice, gain more insights into the innovative business model, implement the model by constantly improving their learning and absorptive ability, and accurately evaluate the implementation effect, thus ensuring the optimal performance. In brief, the learning and absorptive ability of the management takes on a vital significance in promoting the practical application of business model innovation.

Effect of entrepreneurship

As depicted in Table 6, the results of the regression analysis suggest that only the development and innovative spirit among all the variables of entrepreneurship dimension has a significant and positive effect on the formation of business model innovation schemes. It is demonstrated that in China's wooden furniture manufacturing enterprises, managers with more innovative and developmental ideas will better promote the formation of the thinking about business model innovation. Schumpeter believes that innovation is the soul of entrepreneurship and a typical feature of entrepreneurs' behaviors (1912). Existing in the whole operational process, entrepreneurship is reflected in the development of new management models and new markets. Excellent entrepreneurs are better at exploring opportunities that others cannot perceive and coordinating the use of all kinds of resources. Drucker emphasizes that the formation and development of entrepreneurial innovative spirit are based on organized and systematic practice and training, which is the job and responsibility of the management (1985).

After the control variables of "age" and "level" are introduced, development innovation, win-win cooperation, and social responsibility in entrepreneurship exert positive and significant effects on the practice of business model

Table 5.—Regression of the influence of learning and absorptive capability on business model innovation.

Dependent variable	R ²	Ad R ²	Variable	β	t	Collinearity statistics	
						Tolerance	VIF
Formation of business model schemes	.112	.097	Constant	2.688	7.741		
			Identification and sharing	0.271***	3.497	0.770	1.299
			Understanding and integration	.018	0.228	0.733	1.363
			Personal investment	0.078	1.157	0.803	1.245
Implementation of business model innovation.	.607	.596	Constant	−0.218	−0.813		
			Age	0.175	4.205	0.614	1.629
			Position	−0.115	−2.328	0.526	1.900
			Identification and sharing	0.616***	10.912	0.764	1.308
			Understanding and integration	0.169***	2.855	0.719	1.390
			Personal investment	0.174***	3.445	0.740	1.351

¹ *** Significantly correlated at the 0.01 level.

² R²: R-squared.

³ Ad R²: Adjusted R Squared.

⁴ VIF: Variance Inflation Factor.

innovation. After insignificant variables are gradually replaced and deleted, the significance of the above three variables remains constant. The above result suggests that at the practice stage of business model innovation, an organization with an efficient and harmonious team spirit and a good sense of social responsibility is required in addition to managers with the innovative spirit. The implementation of an innovation scheme covers a considerable number of uncertain factors (e.g., internal resistances, resource coordination, and unknown implementation effects). Thus, the effect of entrepreneurship on the management is becoming increasingly comprehensive.

Effect of enterprise culture

As depicted in Table 7, the results of the regression analysis indicate that only innovative enterprise culture among the variables of enterprise culture dimension has a significant and positive effect on the formation of business model innovation schemes of Chinese wooden furniture manufacturing

enterprises. It is proven that enterprises cultivating and shaping innovative culture will be very beneficial to the formation of the thinking about business model innovation. Enterprise culture influences the internal motivation of enterprises for acquiring external knowledge and information and the focus of resource allocation, as well as employees' cognition of certain events. Hence, enterprises with more prominent innovative culture are more prone to identify with business model innovation, which is more conducive to the development of business model innovation schemes.

After the control variables of “age” and “level” are introduced, the normative culture and innovative culture in the enterprise culture exert a positive and significant effect on the practice of business model innovation. After insignificant variables are progressively deleted, the significance of the above two variables remains constant. This result suggests that enterprises with innovative culture, normative culture, and standardized management will implement business model schemes more effectively at the implementation

Table 6.—Regression of the influence of entrepreneurship on business model innovation.

Dependent variable	R ²	Ad R ²	Variable	β	t	Collinearity statistics	
						Tolerance	VIF
Formation of business model schemes	0.185	0.166	Constant	2.423	6.826		
			Development and innovation spirits	0.370***	4.452	0.646	1.548
			The learning spirit	−0.016	−0.245	0.766	1.305
			The cooperative and win-win spirit	0.028	0.372	0.835	1.197
			Entrepreneurs' social sense of responsibility	0.070	1.021	0.674	1.484
Implementation of business model innovation	0.705	0.695	Constant	−0.200	−0.817		
			Age	0.090	2.444	0.591	1.692
			Position	−0.040	−0.928	0.527	1.899
			Development and innovation spirits	0.614***	11.262	0.644	1.553
			The learning spirit	0.039	0.861	0.687	1.455
			The cooperative and win-win spirit	0.112**	2.216	0.807	1.240
Entrepreneurs' social sense of responsibility	0.245***	5.436	0.660	1.514			

¹ *** Significantly correlated at the 0.01 level.

² ** Significantly correlated at the 0.05 level.

³ R²: R-squared.

⁴ Ad R²: Adjusted R Squared.

⁵ VIF: Variance Inflation Factor.

Table 7.—Regression of the influence of enterprise culture on business model innovation.

Dependent variable	R^2	Ad R^2	Variable	β	t	Collinearity statistics	
						Tolerance	VIF
Formation of business model schemes implementation of business model innovation	.211	.188	Constant	2.951	3.816		
			The standardization	0.083	0.739	0.410	2.437
			Innovative	0.402***	4.248	0.523	1.913
			Mutual trust	0.011	.122	0.831	1.203
			Equality	-0.197	-0.967	0.874	1.144
Implementation of business model innovation	.753	.743	Bureaucratic	-0.023	-0.274	0.621	1.611
			Constant	-0.572	-1.202		
			Age	0.096	2.863	0.602	1.660
			Position	-0.071	-1.801	0.526	1.903
			Standardization	0.201***	2.925	0.403	2.481
			Innovative	0.771***	13.312	0.518	1.932
			Mutual trust	0.068	1.251	0.768	1.301
			Equality	0.072	0.573	0.845	1.183
Bureaucratic	0.039	0.758	0.616	1.624			

¹ *** Significantly correlated at the 0.01 level.

² R^2 : R-squared.

³ Ad R^2 : Adjusted R Squared.

⁴ VIF: Variance Inflation Factor.

stage of business model innovation. From the perspective of strategic management, enterprises at the new stage of strategy implementation should constantly indicate and evaluate the implementation effect, and carry out improvement and adjustment in a timely fashion. In the above process, a set of standardized system is required to ensure the complete implementation of the strategy. The same is true of the process of business model innovation practice. The business model innovation schemes and relevant systems will be more effectively implemented for organizations with prominent normative cultural atmosphere.

Regulatory effect of enterprise culture

As a factor at the organizational level, enterprise culture is a universally recognized value that forms over a long time in an enterprise. This value will influence the thinking and behaviors of employees at the individual level. Therefore, it is necessary to further study the moderating effect of enterprise culture variables when individual variables play a role in business model innovation. The previous study results demonstrate that normative culture and innovative culture have a significant effect on business model innovation, so normative culture and innovative culture were selected as the adjusting variables of enterprise culture dimensions to test their regulatory effects in the correlation between the independent variables of employee learning and absorptive ability and entrepreneurship and business model innovation. First, the hierarchical regression method was used for testing after decentralization of the independent and regulatory variables. The moderating effect of hypotheses concerning enterprise culture (see “Regulatory effect of enterprise culture”) was tested, and the result indicates that enterprise culture, as a regulatory variable, has no significant regulatory role in the correlation between learning and absorptive ability and the formation of business model innovation schemes, between entrepreneurship and the formation of business model innovation schemes, or between learning and absorptive ability and business model innovation practice. The change of model R^2 is not significant after the regulatory

variable is introduced, and the regression coefficients of interaction terms representing the regulatory effect fail to reach a significant level. Enterprise culture plays a significant role only in regulating the correlation between employees’ entrepreneurship and business model innovation practice.

As depicted in Table 8, the results of the regulatory effect test indicate that innovative culture plays a significant role in regulating the correlation between entrepreneurship and business model innovation practice. The model R^2 changes significantly after the adjustment variable is introduced (significance: 0.001). For the mechanism of regulatory effect, the interaction coefficient, is significantly positive, suggesting that innovative enterprise culture has a significant positive regulatory effect on the entrepreneurial learning spirit at the stage of business model innovation practice. It can be speculated that in Chinese wooden furniture manufacturing enterprises, stronger innovative culture will obviously stimulate the desire of the management to learn, and they will more proactively promote the smooth implementation of business model innovation practice based on continuous learning and understanding of relevant knowledge.

Conclusions

This study suggests that the ability of innovation subjects to identify and share knowledge and information facilitates the whole process of business model innovation, enhances the ability to understand and integrate knowledge, and stimulates the personal investment in learning on the practice stage of business model innovation. In other words, the stronger the ability of innovation subjects to identify and share the external environmental information based on organizational learning in Chinese wooden furniture manufacturing enterprises, the better it will drive the formation of business model innovation schemes. Moreover, higher requirements will be raised for the learning and absorptive ability of the management at the implementation stage of a new business model. It is necessary to fully understand and integrate the contents of business model schemes at the

Table 8.—The regulating effect of enterprise culture on the relationship between entrepreneurship and business model innovation practice.

Dependent variable	Independent variable	β	t	Collinearity statistics	
				Tolerance	VIF
	Constant	3.840			
	Age X_{00}	0.069	2.164	0.550	1.819
	Position X_{01}	-0.040	-1.076	0.487	2.054
	Development and innovation spirits X_{21}	0.178**	2.173	0.202	4.956
	The learning spirit X_{22}	0.032	0.807	0.629	1.591
	The cooperative and win-win spirit X_{23}	0.003	0.059	0.706	1.416
	Entrepreneurs' social sense of responsibility X_{24}	0.169***	4.076	0.555	1.803
Implementation of business model innovation	Standardization X_{31}	0.122	1.964	0.409	2.444
	Innovative X_{32}	0.457***	4.827	0.162	6.162
	$X_{21}X_{31}$	0.025	0.165	0.202	4.943
	$X_{22}X_{31}$	-0.124	-1.305	0.340	2.942
	$X_{23}X_{31}$	0.100	0.841	0.383	2.612
	$X_{24}X_{31}$	-0.078	-0.907	0.374	2.674
	$X_{21}X_{32}$	-0.251	-1.846	0.176	5.670
	$X_{22}X_{32}$	0.220**	2.197	0.306	3.268
	$X_{23}X_{32}$	0.008	0.065	0.287	3.490
	$X_{24}X_{32}$	-0.149	-1.411	0.260	3.846
R^2		0.804			
Adj R^2		0.785			
Significant F change		0.001			

¹ *** Significantly correlated at the 0.01 level.

² ** Significantly correlated at the 0.05 level.

³ X: independent.

⁴ VIF: Variance Inflation Factor.

early stage. At this stage, the management should also increase their investment in learning to improve the level of business model innovation practice. On that basis, for Chinese wooden furniture manufacturing enterprises, the establishment of a learning organization in line with the characteristics of the new era will expedite the realization of the business model innovation process.

This study suggests that the development and innovative spirit of entrepreneurs significantly facilitates the formation and practice of business model innovation schemes. As innovation enters to the practice stage, entrepreneurship more extensively boosts innovation. The spirit of win-win cooperation is significantly correlated with team building, and a cohesive organization is capable of maximizing the effectiveness of innovation practice. During business model practice, an entrepreneur's social responsibility spirit takes on an increasing significance. Innovation subjects will measure the social benefits of a new business model in the implementation based on the measurement of economic benefits (e.g., environmental protection, integrity, and employee welfare).

As revealed by this study, the innovative culture of Chinese wooden furniture manufacturing enterprises significantly facilitates the formation of business model innovation schemes. At the practice stage of business model innovation, innovative culture and normative culture jointly boost the practice of business model innovation. The significance of a standardized organizational culture reveals that it is capable of expediting the implementation of innovation schemes. The standardized culture is an institutionalized feature over a long term in conventional wooden furniture manufacturing enterprises. In the whole process of production and management, standardization and normalization serve as vital factors for enhancing the competitiveness of products and management.

Furthermore, the result of the empirical study suggests that innovative culture, an organizational factor, has a significant and positive effect in regulating the learning spirit of employees in wooden furniture manufacturing enterprises, thus indirectly affecting the innovation practice of a business model. This result reveals that in the process of business model innovation practice of wooden furniture manufacturing enterprises, innovative culture helps employees establish the belief of pursuing novel knowledge and ensure business model innovation practice by constantly gaining novel knowledge and skills.

By comparing relevant research results, we found that there are still few specialized studies on the impact of traditional manufacturing innovation entities on business model innovation behavior. Existing similar research results also prove that factors such as "entrepreneurial spirit" and "cognition of organizational members" will promote business model innovation behaviors in other traditional manufacturing industries. Therefore, the conclusions of this study can also be used as a reference for other traditional manufacturing industries when making business model innovation decisions.

This study can be extended to conduct the next phase of research in the future and continue to examine whether the attitudes of the innovative subjects of these enterprises towards business model innovation behavior have changed over time. If their attitudes change, the study will further assess the reasons for these differences.

Limitation

The "individual" scope of the research object of this study is defined as managers at all levels of the enterprise,

and the impact of corporate culture on individuals was fully considered in the study, but without considering the potential changes or evolution of these factors over time. In the long operating process of a company, managers' attitudes may also change over time, which provides a good research direction for this study in the future. Moreover, due to limitations of time and available resources, this study only focused on the representative furniture industry cluster "Shandong Province" and has not yet conducted research on furniture industry clusters in other regions. Therefore, it is not known whether the results are significantly different. It also provides ideas for subsequent research.

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APPENDIX

Questionnaire

Dear Madam/Sir:

Thank you very much for participating in this survey for the purpose of academic research. The research is to understand your views on business model innovation. Answers to this questionnaire are anonymous and answers are kept strictly confidential. Please be sure to answer each question according to your actual thinking, so as not to cause invalid questionnaires and affect the results.

Part 1.—Personal Information

Q1. Gender

A. Male B. Female

Q2. Age (years)

A. Under 25 B. 25–34 C. 35–44 D. Over 45

Q3. Education

A. Secondary education B. college C. Undergraduate D. Postgraduate

Q4. Position

A. Primary management B. Midlevel management C. Senior management D. Decision level

No.	Question	1	2	3	4	5
Q1	I will try to use new business models in my work and find out the problems.					
Q2	I will know the business model from different points of view to gain a deep understanding.					
Q3	I can often think of new ideas to improve the business model.					
Q4	I will propose new solutions to problems in business operations.					
Q5	I will look for opportunities to improve the business model.					
Q6	I will try to convince others of the importance of the new business model.					
Q7	While working, I follow topics about new business models.					
Q8	I will actively promote the implementation of new business models.					
Q9	When implementing a new business model, I will find ways to correct possible problems.					
Q10	I will apply the new business model to my work.					
Q11	I will change my work habits for the application of the new business model.					
Q12	I am willing to take the risk of failure of the new business model.					
Q13	I will actively try new methods in my work.					
Q14	I will influence the decision-makers to make them pay attention to the new business model.					

Part 2.—About Business Model Innovation

1. Strongly disagree 2. Disagree 3. Not sure 4. Agree 5. Strongly agree

The following references form the theoretical basis for the questions,

1. Audenaert, M., A. Vanderstraeten, and D. Buyens. 2013. Unleashing employees' power to innovate: Cross-level effects of employment relationships and job complexity. Working Paper 13/836. Ghent University Faculty of Economics and Business Administration, Belgium.

2. De Jong, J. and D. Den Hartog. 2007. How leaders influence employees' innovative behaviour. *Eur. J. Innov. Manag.* 10(1):41–64.

3. Janssen, O. 2005. The joint impact of perceived influence and supervisor supportiveness on employee innovative behavior. *J. Occup. Organ. Psychol.* 78(4): 573–579.

4. Ojedokun, O. 2012. Role of perceived fair interpersonal treatment and organization-based self-esteem

No.	Question	1	2	3	4	5
Q15	I pay more attention to market trends.					
Q16	I dare to try to change the content of work.					
Q17	I am adventurous and willing to take the consequences of the risk.					
Q18	I am good at making decisive decisions at work.					
Q19	I respect traditional social culture.					
Q20	I have a strong sense of teamwork.					
Q21	I will lead others to learn together.					
Q22	I can tolerate the work mistakes of my subordinates.					
Q23	I often pay attention to the new policies of the industry.					
Q24	I have good relationships in the company.					
Q25	I respect others at work.					
Q26	I am willing to learn new knowledge and practice it in my work.					
Q27	I have a strong insight into new things.					
Q28	I have a sense of social responsibility and am willing to serve the society at work.					
Q29	I pay attention to social benefits and environmental protection.					
Q30	I will actively communicate with others.					

in innovative work behavior in a Nigerian bank. *Psychol. Thought.* 5(2):124–140.

Part 3.—Entrepreneurship

1. Strongly disagree 2. Disagree 3. Not sure 4. Agree 5. Strongly agree

The following references form the theoretical basis for the questions,

1. Crook, T. R., C. L. Shook, M. L. Morris, and T. M. Madden. 2010. Are we there yet? An assessment of research design and construct measurement practices in entrepreneurship research. *Organ. Res. Methods.* 13(1):192–206.

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3. Chen, Z. W. and X. L. Hao. 2008. Empirical study of relationship between entrepreneurship of entrepreneurial team and corporate performance. *J. Manag. Sci.* 21(1): 39–48.

4. Li, W., M. Nie, and S. C. Li. 2010. The impact of entrepreneurship on external knowledge competence and network competence. *Stud. Sci. Sci.* 28(5):763–768.

5. Ma, W. D., Y. Cao, L. J. You., and L. C. Zhang.

No.	Question	1	2	3	4	5
Q31	I focus on hot issues and new perspectives.					
Q32	I know where to get new knowledge about the work.					
Q33	I have a strong ability to analyze and accept new knowledge and new methods.					
Q34	I can keep my knowledge updated.					
Q35	I am good at using new ideas to analyze existing things.					
Q36	Compared with my colleagues, I invest more in my studies.					
Q37	When others have questions, I can quickly explain new knowledge clearly.					
Q38	I am willing to share information, experience, technology with others.					
Q39	I am more willing to use new methods and technologies than my colleagues.					
Q40	I spend more time studying than my colleagues.					
Q41	I have the ability to distinguish whether new knowledge and new methods can guide the work.					
Q42	I have the ability to apply new knowledge to practical work.					
Q43	I am willing to participate in training to improve my ability.					
Q44	I have the quality of constantly learning new knowledge.					

2010. Research on the influence of entrepreneurship on the evolution of dynamic capabilities of enterprises. *J. Huaiyin Inst. Technol.* 19(4):57–64.

PART 4.—Learning and Absorptive Ability

1. Strongly disagree 2. Disagree 3. Not sure 4. Agree 5. Strongly agree

The following references form the theoretical basis for the questions,

1. Cepeda-Carrion, G., J. G. Cegarra-Navarro, and D. Jimenez-Jimenez. 2012. The effect of absorptive capacity on innovativeness: context and information systems capability as catalysts. *Br. J. Manag.* 23(1): 111–129.

2. Flatten, C. T., G. I. Greve, and M. Brettel. 2011. Absorptive capacity and firm performance in SMEs: The mediating influence of strategic alliances. *Eur. Manag. Rev.* 8(3):137–152.

3. Rodriguez-Castellanos, A., M. Hagemeister, and M. Ranguelov. 2010. Absorptive capacity for R&D: The identification of different firm profiles. *Eur. Plann. Stud.* 18(8):1267–1283.

4. Wang, X. Y., Z. L. Liu, and Y. X. Zhao. 2011. The affect mechanism of creative self-efficacy on employees' creative behavior. *Sci. Res. Manag.* 32(9): 1–6.

No.	Question	1	2	3	4	5
Q45	In my company, colleagues are able to collaborate with each other.					
Q46	In my company, colleagues trust each other very much.					
Q47	My company has systematic rules and regulations, and everyone strictly abides by them.					
Q48	My company gives employees a high degree of autonomy in decision-making.					
Q49	I feel safe in my job.					
Q50	My company treats its employees equally.					
Q51	Most of the employees in my company are adventurous.					
Q52	In my company, the working atmosphere is active.					
Q53	My company encourages employees to accept new ideas and pursue innovation.					
Q54	My company takes job performance very seriously.					
Q55	My company encourages employees to think more.					
Q56	My company often rewards employees.					
Q57	My company will actively collect information about customers.					
Q58	In my company, superiors often speak in a commanding tone.					
Q59	My company is power oriented.					
Q60	In my company, employees feel relatively high work pressure.					
Q61	In my company, the management is very strict.					
Q62	The process of my company's work is quite clear.					
Q63	My company has a clear management hierarchy.					

PART 5.—Enterprise Culture

1. Strongly disagree 2. Disagree 3. Not sure 4. Agree 5. Strongly agree

The following references form the theoretical basis for the questions,

1. Khoja, F. and S. Maranville. 2010. How do firms nurture absorptive capacity? *J. Manag. Issues.* 22(2):262–278.

2. Liu, S. S., J. Peng, and S. W. Kuang. 2010. The relationship among human resource management system, organizational culture and organizational performance. *Chin. J. Manag.* 7(9):1282–1289.

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