

Strategic Orientation, Innovation and Entrepreneurship Model and Economic Performance - Empirical Analysis from Chinese Data

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Through a systematical combination of domestic and foreign literature on strategic orientation, this paper proposes an exploratory model for the relationship between strategic orientation, innovative entrepreneurship model and economic performance, with 485 pieces of valid sample data collected for empirical testing. It was found that entrepreneurial orientation and network orientation have positive effects on economic performance to a significant extent. The impact of entrepreneurship orientation on business model innovation is far more significant compared with product innovation, while the impact of network orientation on product innovation is clearly more significant in contrast to business model innovation. Business model innovation plays an intermediary role between entrepreneurial orientation and economic performance, while product innovation plays an intermediary role between network orientation and economic performance. Based on the empirical results obtained, the following suggestions are made in this paper for innovation and Entrepreneurship Model Selection. Resource-deficient enterprises can rely on network-oriented product innovation to improve economic performance and risk-preferring firms can receive benefit from economic performance through entrepreneurial-oriented business model innovation.

Keywords: *Entrepreneurial Enterprise; Network Orientation; Product Innovation; Business Model Innovation; Economic Performance.*



JEL Classification: C4, M1, O3

1 Introduction

Innovation and entrepreneurship refer to the entrepreneurial activities carried out through innovation, including product innovation, technology innovation, service innovation, business model innovation, management innovation, channel innovation and other means of innovation. Innovation is the unique characteristic of innovative and entrepreneurial enterprises, while entrepreneurship is the ultimate goal of innovative and entrepreneurial enterprises. The impact of strategic orientation on new venture performance has attracted a lot of attention for research due to its manageability. As argued by Kohli and Jaworski (1990), strategic orientation is the strategic behaviour performed by enterprises to achieve superior and sustainable performance, which makes enterprises adaptive to the environment and capable to shape it. Based on oriented research literature review of previous strategy, there are some weaknesses identified. For example, the existing transfer mechanism between strategic orientation and business performance focused incremental innovation and radical innovation, a single product innovation, enterprise business venture face a profound change of business model innovation the lack of system research, this study analysing the logic relation between strategic orientation and entrepreneurial companies slightly insufficient. Besides, previous literature is lacking in the comparative studies on whether there are differences in the impact of the same strategic orientation on different modes of innovation and entrepreneurship, which makes it difficult to provide practical guidance for enterprises to choose appropriate modes of innovation and entrepreneurship.

With innovative and entrepreneurial enterprises as the starting point, an empirical study is conducted on the relationship between their strategic orientation, innovative and entrepreneurial mode and economic performance, based on which an exploration is conducted into the important influencing factors in the success achieved by an increasing number of innovative and entrepreneurial enterprises in the context of "mass entrepreneurship and innovation". The reasons for selecting innovative and entrepreneurial enterprises as the research object are detailed as follows. Under the national development strategy of "mass entrepreneurship and innovation", the number of innovative and entrepreneurial enterprises is on the increase year on year. The number of small and micro businesses in China has reached 80 million, accounting for about 70 percent of the national total. As of 2019, the number of new small and micro businesses nationwide reached nearly 15 million. From 2017 to 2019, the number of newly registered small and micro businesses exceeded 10 million on an annual basis. The prospect of survival and development for innovative and entrepreneurial



enterprises is not optimistic. In the US, 27 per cent of start-ups fail in their first year, and the average lifespan of small and medium-sized businesses is less than seven years. There are eight companies established per minute in China. The average life of a company is only two and a half years, but the failure rate is as high as 80%. The failure rate among college students is even higher, that is, 95%. Due to various subjective and objective factors, the survival and development of innovative and entrepreneurial enterprises are made increasingly difficult. According to the focus interview, entrepreneurship orientation and network orientation are the strategic orientation with high talking degree for innovative and entrepreneurial enterprises. Product innovation and business model innovation are the innovation modes that attract more attention from innovative and entrepreneurial enterprises. Therefore, entrepreneurial orientation and network orientation are taken as the representatives of strategic orientation in this paper. Product innovation and business model innovation are representative of innovation and entrepreneurship model. In this study, an attempt is made to solve two questions: Does the same strategic orientation have different effects on different innovation and entrepreneurship models? Does the innovation and entrepreneurship model play a mediating role between strategic orientation and economic performance?

This paper will respond to the previous literature in two aspects: In the research on strategic orientation, there is some empirical research literature on the impact of strategic orientation on performance, but there is little attention paid to discussing the mechanism and boundary of the impact of strategic orientation on the performance of innovative and entrepreneurial enterprises. In literature, more consideration is given to the product innovation patterns of intermediary role, or the focus the transfer function of incremental innovation and radical innovation between the strategic orientation and performance, Lacking of the combination of two specific models of product innovation and business model innovation to explore the mechanism of the impact of strategic orientation on the performance of Innovative start-ups, this paper makes an attempt to close this gap. Effort is made to reveal the underlying reason for the differences in the choice made by enterprises over the modes of innovation and entrepreneurship. Although scholars have conducted extensive analysis on the importance of strategic orientation, there are still few comparative studies carried out on the difference on the impact of the same strategic orientation on different modes of innovation and entrepreneurship. Understanding the mechanism behind the impact of the same strategic orientation and the underlying strategic orientation from the perspective of enterprises can better help innovative and entrepreneurial enterprises to choose the appropriate mode of innovation and entrepreneurship.



2 Literature Review

2.1 Theoretical analysis

Entrepreneurial orientation is a significant subject in the research of enterprise entrepreneurship. Lumpkin and Dess (1996) were the first to explicitly propose the concept of entrepreneurial orientation. They defined the entrepreneurial orientation for new as the behaviour caused by the procedures, practices and decision-making activities, depicting key dimensions of entrepreneurial orientation including the tendency of independent action, innovation and the willingness to take risks, the inclination to positive action, and action in advance to market opportunities. According to Covin and Slevin (1991), entrepreneurial orientation exhibits three distinctive behavioural characteristics: innovation, risk-taking, and proactive action. Based on this, they are taken as three dimensions of entrepreneurial orientation for research.

Network orientation was first introduced into the field of management by Barnir and Smith (2002). From the perspective of enterprise strategic alliance, network orientation is defined as the attitude and tendency of managers to develop and maintain network relationships. Sorenson et al. (2008) discussed not only network orientation in the context of entrepreneurship, but also the important role of cooperation for female managers from the perspectives of conflict management theory and organisational orientation. It was believed that network orientation refers to the attitude and tendency of entrepreneurs and entrepreneurial organisations to build internal and external networks for entering into cooperation, resolving problems and promoting business success.

Business model innovation is receiving increasing popularity among academics and business circles for its effectiveness in creating additional value for enterprises, customers and society. Putting forward the concept of "atomic business model", Weill and Vitale (2001) believed that every atomic business model shows four characteristics, including key success factors, strategic objectives, revenue sources and core competitiveness. The development of new business models is contributed to by the change to the combination model of "atomic business model". Although scholars have different views on the elements of business model, a consensus has been reached among most scholars that target customers, products (or value proposition), cost and revenue models, and supply chain (or partnership) as the core elements of business model.

When exploring the relationship between market orientation and product innovation, Atuahene-Gima (1996) explained product innovation from the perspectives of enterprises and consumers respectively. Product innovation at the enterprise level refers to the low similarity between new products and the products marketed by enterprises in the past. At the consumer level, a new product refers to the novelty of the product to consumers. When consumers are less adaptable to the use experience and consumption pattern, they will consider the product as more novel [8]. From the perspective of enterprises, consumers are the final receivers of products. Thus, thinking about product innovation from the perspective of consumers is consistent with the fundamental purpose of enterprise marketing.

2.2 Conceptual model

Based on the RBT theory (Wernerfelt's Resource-based Theory of Enterprises), Hult et al. (2005) and Ketchen et al. (2007) proposed the framework of "strategic resources (capabilities) -- strategic execution -- strategic performance". The research framework is explained as follows. The strategic resources or capabilities of the firm exert influence on the strategic behaviour of the firm and then on the strategic performance of the firm. Based on this research framework, the conceptual model used in this research is proposed, as shown in Figure 1. By influencing the innovative and entrepreneurial model (business model innovation and product innovation), the strategic orientation (entrepreneurial orientation and network orientation) of innovative and entrepreneurial enterprises makes a difference to the strategic performance (economic performance) of enterprises.

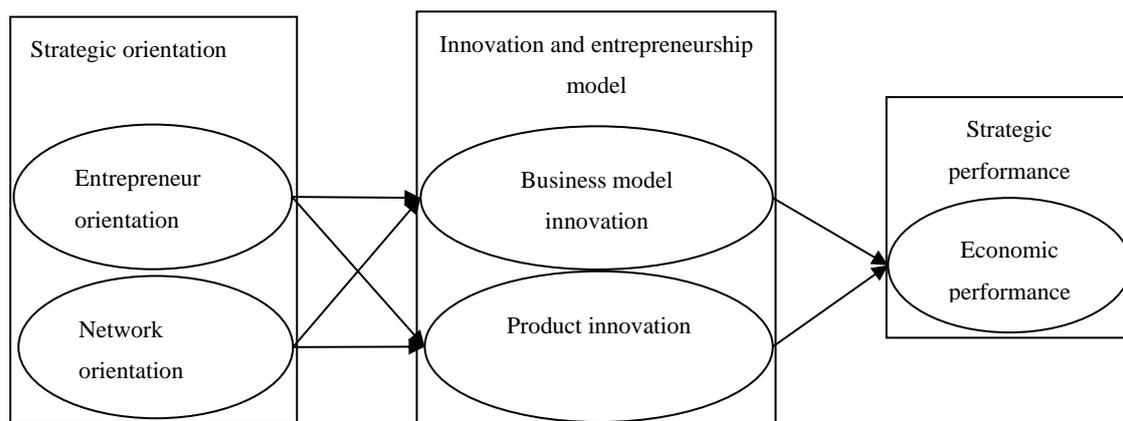


Figure 1: Conceptual model



3. Research hypothesis

3.1 Impact of entrepreneurial orientation on product innovation and business model innovation

Innovation plays an important role in entrepreneurial orientation, because entrepreneurial orientation reflects an important mode for enterprises to pursue new opportunities. As indicated by Miller and Friesen (1982), among the components of entrepreneurial orientation, proactive actions can assist enterprises in identifying and exploring new market opportunities, developing the new products that surpass competitors, and exceeding customer expectations. According to Menguc and Auh (2006), not only are innovative companies focused on taking advantage of existing advantages, they will also be proactive in exploring new opportunities and promoting innovation. Compared with conservative companies, innovative start-ups pay more attention to carrying out product innovation and attach more importance to external change. Moreover, they tend to encourage the spirit of taking risks and take the possible risks of entering unknown territory.

As indicated by Lumpkin and Dess (1996), entrepreneurship orientation focuses on introducing breakthrough innovation into enterprises when discriminating the conceptual structure of entrepreneurship orientation, so that enterprises can create new businesses or recover their growth vitality. In the view of Wang Qian (2011), apart from operation innovation and product/service innovation, business model innovation is the most original innovation behaviour in the development of enterprise innovation ability. Through 641 manufacturing sample enterprises, Li Hongqiao (2013) confirmed that the three dimensions of entrepreneurship orientation, including innovation, foresight and risk-taking, have a positive impact on breakthrough innovation to a significant extent. As a category of breakthrough innovation in essence, business model innovation can have a profound impact on the appearance of an enterprise. Based on this, entrepreneurial orientation plays a positive role in promoting business model innovation.

Business model innovation requires enterprises to make efforts in many aspects. For example, enterprises are required to steer away from their traditional thinking, and even to carry out reverse changes to culture, organisational structure and resource allocation. For innovative and entrepreneurial enterprises, R & D resources are quite limited. As for product innovation, it needs such support of R & D resources as capital and technology. In contrast, business model innovation is less dependent on such resources. Therefore, the impact of

entrepreneurial orientation on business model innovation is more significant than that on product innovation. Based on the above analysis, hypothesis H1 is proposed:

H1: The impact of entrepreneurial orientation on business model innovation is significantly greater than that on product innovation

3.2 Influence of network orientation on product innovation and business model innovation

Due to various resource constraints, innovative and entrepreneurial enterprises usually obtain valuable information and resources through the construction of social network relations, so as to facilitate their further development. Both internal and external social networks can help enterprises identify potential market opportunities, acquire critical development resources, cultivate core competence of enterprises and create entrepreneurial value. As argued by Jianhua (2013), the establishment process of an enterprise is the process to realise a business model under the guidance of value creation. The acquisition of resources from social networks provides an important way for new enterprises to achieve value creation and carry out business model innovation. Those enterprises paying attention to the construction of internal and external network relations are conducive to the acquisition of tangible and intangible resources, which is contributory to rebuilding the business process and realising business model innovation.

As indicated by Tsai (2001), acquiring new knowledge is one of the key factors for successful product innovation. The product innovation of innovative and entrepreneurial enterprises is closely associated with the R&D activities of enterprises. Peng Xinmin et al. (2012) conducted empirical testing on 208 manufacturing enterprises in Zhejiang Province and found out that whether an enterprise is located in a network centre or a network intermediary has a significant positive impact on the performance in product innovation [17]. Network orientation stimulates the enthusiasm of internal employees for self-sufficiency and innovation while strengthening the ability of enterprises to learn and adapt to the external environment, so as to meet the needs of consumers on the market for new products.

The enterprise embeds into the social network and pays attention to the establishment of connection with the network partners, the fundamental purpose of which is to learn knowledge and ability for improving their own innovation level. The acquisition of resources from within the enterprise network reduces the difficulty of product innovation. Compared with the business model innovation with no more reliance on resources, the influence of

network orientation on product innovation is more significant than that on business model innovation. Therefore, hypothesis H2 is proposed:

H2: The influence of network orientation on product innovation is significantly greater than that on business model innovation

3.3 Impact of entrepreneurial orientation on economic performance: the mediating role of business model innovation

Entrepreneurial oriented companies are more willing to innovate, more likely to take risks, and more aggressive in the market. The empirical research conclusions of scholars on the impact of entrepreneurial orientation on firm performance are inconsistent. Most scholars believe that entrepreneurial orientation has a significant positive correlation with enterprise performance (Peng Wei and Fu Zhengping, 2012). In the meantime, there is another voice about the relationship between entrepreneurial orientation and firm performance. In the view of Lumpkin and Dess (2001), entrepreneurial orientation has a weak or even insignificant relationship with firm performance. For innovative and entrepreneurial enterprises, they should strive to seize entrepreneurial opportunities for further development. The "innovation" factor in entrepreneurial orientation is bound to facilitate the creation of markets and the improvement of enterprise performance. As argued by Giesen et al. (2007), business model innovation can support enterprises in creating new markets or making them more efficient in the existing markets. Thus, enterprises gain more value. Therefore, hypothesis H3 is proposed:

H3: Business model innovation plays a mediating role between entrepreneurial orientation and economic performance. Entrepreneurial orientation has a significant positive impact on economic performance; Entrepreneurial orientation has a positive impact on business model innovation to a significant extent; Business model innovation has a positive impact on economic performance to a significant extent.

3.4 Influence of network orientation on economic performance: the mediating role of product innovation

Due to the short time of establishment and small scale, innovative and entrepreneurial enterprises are often faced with the lack of capital, technology, information and other resources required for their development. The construction and attention of internal and external networks can enrich the development resources needed by enterprises. As indicated



by Sharma and Blomstermo (2003) from the perspective of internationalisation of new ventures, the external network relationship of an enterprise is a key provider of knowledge, while both direct and indirect network relationships can provide knowledge support. In the hyper-competitive market environment, gaining first-mover advantage is conducive to improving the competitive advantage of innovative and entrepreneurial enterprises over their competitors. In order to gain first-mover advantage, it is essential to ensure that customers and competitors can understand the market dynamics in advance.

Product life cycle theory is the underlying reason for product innovation. Product life cycle refers to the process of product entry and exit to and from the market, which is divided into four different periods: entry, growth, maturity and decline. Since the product will eventually withdraw from the market, enterprises must carry out product innovation in the growth period of the product. In the view of Cui and O'Connor (2012), innovation creates value for enterprises through the generation of new technologies, new products/services and new markets. Atuahene-Gima and Ko (2001) take the view that new product performance is the extent to which a new product gains market share, sales growth, customer usage and profit targets. Therefore, hypothesis H4 is proposed:

H4: Product innovation plays a mediating role between network orientation and economic performance. Network orientation has a significant positive impact on economic performance; Network orientation has a significant positive impact on product innovation; Product innovation has a significant positive impact on economic performance.

4. Aims

4.1 Data collection and samples

Through the list and catalogue (Random checks from China) of innovative and entrepreneurial enterprises provided by third-party professional consulting and investigation companies, a total of 1000 innovative and entrepreneurial enterprises were randomly selected to issue questionnaires. In this study, a total of 1000 questionnaires were distributed and 750 of them were collected. Among them, 485 were valid with a recovery rate of 65%, and the remaining 265 unusable questionnaires were deleted for a number of reasons as follows. Firstly, the data in 85 questionnaires suffered a significant loss. Secondly, 120 surveyed enterprises had been established for less than 3 years. As it takes a period of time for the implementation effect of strategic orientation to emerge, this study focuses only on

innovative and entrepreneurial enterprises established for more than 3 years. Thirdly, the positions of 60 respondents in the questionnaire failed to fit the research topic.

4.2 Questionnaire design and measurement scale

(a) Measurement of entrepreneurial orientation

The Entrepreneurship Oriented Measurement Scale refers to the classic scale developed by Covin and Slevin (1991). Involving a total of 9 items, it measures three dimensions of entrepreneurship orientation: innovation, proactive action and risk-taking.

(b) Network-oriented measurement

The networked oriented measurement scale refers to the scale developed by Sorenson et al. (2008). Involving a total of 6 items, it measures the two dimensions of internal network openness and external network cooperation.

(c) Measurement of business model innovation

The Business Model Innovation Scale adopts the classic scale developed by Zott and Amit (2007) involves a total of 9 items to measure three dimensions: value proposition model innovation, value creation model innovation and value transmission model innovation.

(d) Measurement of product innovation

The scale of product innovation refers to the scale developed by Sethi et al(2001) , which has a total of 6 items and measures two dimensions of product innovation, namely, product novelty and product usability.

(e) Measurement of economic performance

The measurement scale of economic performance adopts the scale developed by Fraj-Andres, Martinez-Salinas and Matute-Vallejo (2009), with three items involved to measure the performance of innovative and entrepreneurial enterprises.

(f) Measurement of control variables

The control variables mainly include enterprise size, registration history, industry type and ownership type.

4.3 Research methods and tools

Firstly, according to the existing research literature both at home and abroad, the measurement scales are summarised and integrated for entrepreneurship orientation, network orientation, product innovation, business model innovation, economic performance and other factors, based on which the questionnaire suitable for this research scenario is developed. Secondly, on the basis of a preliminary survey, confirmatory factor analysis is conducted on the reliability and validity of the questionnaire, so as to obtain the final version of the questionnaire. Finally, the 485 valid questionnaires collected were statistically analysed and the hypothesis was empirically tested. The software used in this study includes AMOS20.0 and SPSS21.0.

5. Methods

5.1 Reliability test of variables

Table 1 shows the results obtained from exploratory factor analysis of the original scale. After the removal of items with factor load of less than 0.6 and "sitting on the fence", there were five factor dimensions formed, including entrepreneurship orientation, network orientation, product innovation, business model innovation and economic performance. The cumulative variance contribution rate was 68% for the five factors, and the KMO(Kaiser-Meyer-Olkin) value was 0.81, indicating the suitability of the data for factor analysis. The reliability α value of all factor dimensions was greater than 0.7, indicating the high reliability of the scale.

Table 1. Reliability test of variables and related items

| variable | item | Load factor | α value |
|----------------------------------|--|-------------------|----------------|
| Entrepreneurial orientation (EO) | EO1: Your company is more inclined to deal in new products (services) | 0.67 ^a | 0.70 |
| | EO2: Your company spends a lot of money on the development of new products (or services) | 0.74 (***) | |
| | EO3: Your company has made a lot of efforts to transform existing products (or services) | 0.70 (***) | |

| | | | |
|--------------------------------|--|-------------------|------|
| | EO4: Your company is often ahead of its competitors | 0.71 (***) | |
| | EO5: Your company tends to retire a new product (or service) earlier than its competitors | 0.65 (***) | |
| | EO6: Your company tends to sell new products (or services) rather than introduce them | 0.71 (***) | |
| | EO7: Your company tends to choose products (services) with high risks and high returns | 0.77 (***) | |
| | EO8: In general, your company tends to act boldly and quickly rather than conservatively | 0.76 (***) | |
| | EO9: Your company tends to take a bold and aggressive stance when faced with uncertainty and risk | 0.74 (***) | |
| Network oriented (NO) | NO1: The various departments in your company often communicate with each other to promote the optimal solution of problems | 0.83 (***) | |
| | NO2: Your company often carries on the team cooperation, the consistency degree is high | 0.85 (***) | |
| | NO3: Your company's internal relations are very human, members can speak freely | 0.78 (***) | |
| | NO4: Your company often obtains information from external sources | 0.81 (***) | |
| | NO5: Your company values obtaining relevant opinions and suggestions from external parties | 0.73 (***) | |
| | NO6: Your company often takes on board the concerns and ideas of external parties | 0.65 (***) | |
| Product innovation (PI) | PI1: Your products are out of the ordinary compared with those of your competitors | 0.77 (***) | 0.77 |
| | PI2: Compared with the competitors, your products are very novel | 0.79 (***) | |
| | PI3: Compared with your competitors, your products are very unique | 0.82 (***) | |
| | PI4: Compared with your competitors, your products are very original | 0.82 (***) | |
| | PI5: Compared with your competitors, your products are very modern | 0.77 (***) | |
| | PI6: Compared with competitors, your products satisfy customers' desires better | 0.73 (***) | |
| Business model innovation (MI) | MI1: Your company has developed an innovative value proposition for its strategic resources and core competencies | 0.61 ^a | 0.72 |
| | MI2: Your company has clearly defined target customers and a distinct and consistent value proposition | 0.75 (***) | |
| | MI3: Your company has an effective operational and management process for the value proposition | 0.78 (***) | |
| | MI4: Your company is able to explore customer needs in an innovative way | 0.69 (***) | |
| | MI5: The value your company provides to customers is innovative | 0.77 (***) | |
| | MI6: The profit model of your company is innovative | 0.83 (***) | |
| | MI7: Your company has created a new distribution model | 0.63 (***) | |

| | | | |
|---------------------------|--|-------------------|------|
| | MI8: Your company has an innovative approach to reaching and retaining customers | 0.66 (***) | |
| | MI9: Your company's channels are well integrated | 0.67 (***) | |
| Economic performance (EP) | EP1: Compared with your competitors, your market share has increased significantly | 0.61 ^a | 0.76 |
| | EP2: Compared with your competitors, your sales growth is below | 0.81 (***) | |
| | EP3: Compared to your competitors, your profitability is below | 0.87 (***) | |

5.2 Validity test of data

Table 2 shows the validity test and confirmatory analysis results of the scale. AVE (mean variance extraction rate) was greater than 0.5 for the five factor dimensions, and CR (complex reliability) was greater than 0.7 for each factor dimension, indicating the good convergence validity of the scale. In respect of discriminative validity, the correlation coefficient is less for the five factors than for the square root of their AVE (the underlined number in Table 2), indicating the excellent discriminative validity of the scale. In addition, the software AMOS20.0 was applied to carry out confirmatory factor analysis on the scale. CMIN/DF < 3, CFI, NFI, IFI were invariably greater than 0.8, while RMSEA was less than 0.08. The confirmatory analysis results of the scale demonstrated that the data fits the model well.

Table 2. Validity test and confirmatory factor analysis of the scale

| Factor dimension | CR | AVE | EO | NO | PI | MI | EP |
|-------------------------------------|-------|-------|--------------|--------------|--------------|--------------|--------------|
| EO | 0.923 | 0.501 | <u>0.708</u> | | | | |
| NO | 0.937 | 0.536 | 0.024 | <u>0.732</u> | | | |
| PI | 0.923 | 0.572 | 0.026 | 0.295 | <u>0.756</u> | | |
| MI | 0.941 | 0.516 | -0.032 | 0.327 | 0.292 | <u>0.718</u> | |
| EP | 0.893 | 0.629 | 0.008 | 0.551 | 0.542 | 0.430 | <u>0.793</u> |
| Model fitting index | | | CMIN/DF | RMSEA | CFI | NFI | IFI |
| Indicator value of this model | | | 2.78 | 0.037 | 0.871 | 0.885 | 0.872 |
| Indicator values of a good standard | | | <3 | <0.08 | >0.8 | >0.8 | >0.8 |

5.3 Results of hypothesis testing

In this paper, two models are adopted to verify whether entrepreneurial orientation and network orientation have different impacts on business model innovation and product innovation. The results of the empirical test are shown in Table 3.

Table 3. The influence of strategic orientation on innovation and entrepreneurship model

| variable | Product innovation | Business model innovation | Hypothesis testing |
|-----------------------------|--------------------|---------------------------|--------------------|
| Entrepreneurial orientation | 0.23* | 0.831*** | H1 |
| Network oriented | 0.427** | 0.16 | H2 |
| Model statistic | | | |
| R2 | 0.502 | 0.528 | |
| Adjusted R2 | 0.361 | 0.505 | |
| F statistic | 3.567** | 12.153*** | |

Note: the regression coefficients are standardized regression coefficients, and the control variables are omitted in the table

* means $P < 0.1$, ** means $P < 0.05$, *** means $P < 0.01$.

As shown in Table 3, the influence of network orientation ($\beta=0.427, P < 0.05$) and entrepreneurial orientation ($\beta=0.23, P < 0.1$) is positive and significant, indicating that both network orientation and entrepreneurial orientation have positive effects on product innovation to a significant extent. The influence of entrepreneurial orientation on business model innovation ($\beta=0.831, P < 0.01$) is significantly positive. The coefficient of network orientation ($\beta=0.16, P > 0.1$) is positive but not to a significant extent, indicating that entrepreneurial orientation has a significantly positive impact on business model innovation, while network orientation has no significant impact on business model innovation.

Through a horizontal comparison with network orientation, it can be found out that entrepreneurship orientation has a more significant impact on business model innovation. According to the test results, the path coefficient of entrepreneurial orientation on business model innovation is significantly better than that on product innovation, suggesting that the impact of entrepreneurial orientation on business model innovation is far more significant than that on product innovation. In other words, hypothesis H1 holds. The path coefficient of network orientation on product innovation is clearly better than that on business model innovation, indicating that the influence of network orientation on product innovation is more significant than that on business model innovation. That is to say, hypothesis H2 holds.

In this paper, regression analysis is conducted to study the impact of entrepreneurial orientation and network orientation on the economic performance of innovative and

entrepreneurial enterprises. Then, a test is carried out on the mediating role played by business model innovation and product innovation in the relationship between entrepreneurial orientation, network orientation and economic performance respectively. The test results are shown in Table 4.

Table 4 Results of path analysis and hypothesis testing

| The path | Normalized path coefficient | P Value | Corresponding hypotheses | Whether it passes the inspection |
|--|-----------------------------|---------|--------------------------|----------------------------------|
| Entrepreneurial orientation → economic performance | 0.23 | ** | H3a | Y |
| Entrepreneurial orientation → business model innovation | 0.831 | *** | H3b | Y |
| Business model innovation → economic performance | 0.62 | *** | H3c | Y |
| Network orientation → economic performance | 0.555 | *** | H4a | Y |
| Network orientation → product innovation | 0.427 | ** | H4b | Y |
| Product innovation → economic performance | 0.469 | *** | H4c | Y |
| Entrepreneurial orientation → business model innovation → Economic performance | 0.21 | ** | H3 | partial mediation |
| Network orientation → product innovation → Economic performance | 0.171 | 0.301 | H4 | complete mediation |

Note: the explanatory variable in the table is enterprise performance, the regression coefficient is the standardised regression coefficient, and the control variable is omitted in the table.

*means $P < 0.1$, **means $P < 0.05$, ***means $P < 0.01$.

It can be seen from Table 4 that entrepreneurial orientation and network orientation have significantly positive impacts on economic performance, while product innovation and business model innovation have positive impacts on economic performance to a significant extent. As indicated by the results of mediation test, the path coefficient between entrepreneurial orientation and economic performance decreases but remains significant after the addition of business model innovation, implying that business model innovation plays a

partial intermediary role between entrepreneurial orientation and economic performance. After the addition of product innovation into the relationship between network orientation and economic performance path, the path coefficient decreases significantly and ceases to be significant, indicating that product innovation plays a complete intermediary role between network orientation and economic performance.

6. Discussion

6.1 Research significance

The theoretical contribution of this paper lies in clarifying the critical driving factors of innovation and entrepreneurship model and deepening the theoretical research on innovation and entrepreneurship. Up to now, empirical studies have been conducted to confirm two different significant driving factors for innovation and entrepreneurship model. With the assistance of external forces, network orientation drives product innovation more than business model innovation. Rooted in intrinsic motivation, entrepreneurial orientation has a significant driving effect on business model innovation. The study of strategic orientation in this paper can not only predict enterprise performance, but also explain how strategic orientation can be effective in improving economic performance through innovation and entrepreneurship model, thus answers the question of how to choose the strategic direction for innovative and entrepreneurial enterprises.

The practical guiding significance is detailed as follows. On the one hand, through the control of strategic orientation, innovative and entrepreneurial enterprises can choose the influence path of strategic orientation → innovation and entrepreneurship model → economic performance. Product innovation and business model innovation represent two different innovation capabilities of enterprises. Understanding the potential differences between the two innovation capabilities can help enterprise managers choose appropriate strategic orientation and perform better in the allocation of resources. If the enterprise expects to gain profits through product reform, it is necessary to strengthen the network orientation of the cooperative relationship. Innovative and entrepreneurial enterprises are keen on improving their economic performance through disruptive business innovation mode, which can be achieved through entrepreneurship orientation. On the other hand, it reminds enterprises to consider the preference of strategic orientation when choosing innovation and entrepreneurship mode. The viewpoint of this study is that consideration shall be given to the preferred strategic orientation of the enterprise whether innovation and entrepreneurship adopt intangible business model innovation or tangible product innovation. If innovation and



entrepreneurship enterprise prefers entrepreneurial orientation, they should choose business model innovation. If innovative and entrepreneurial enterprises prefer network orientation, they should choose product innovation.

6.2 Research Limitations

This paper shows its guiding significance to some extent for innovative and entrepreneurial enterprises to develop appropriate strategic guidance and choose a matching innovation and entrepreneurship model, for improving economic performance. In spite of this, it still has the following shortcomings. Firstly, there is no subjectivity to remove the variable measure. The subjectivity of the survey questionnaire itself is inevitable, and there may be some measurement deviation or error that will affect the accuracy of the research results. Secondly, there is an absence of longitudinal data. Due to the difficulty in obtaining longitudinal data, static data was collected in this study at a certain point of innovation and entrepreneurship, which may affect the accuracy of the research results. In future studies, if objective data is available, the longitudinal data of innovative and entrepreneurial enterprises will be adopted to ensure the objectivity and accuracy of research results.

7. The research conclusion

With innovative and entrepreneurial enterprises as the research object, this study collected 453 pieces of valid sample data and conducted empirical research on the relationship between strategic orientation, innovation and entrepreneurship model and economic performance. In this paper, there are four hypotheses tested and supported by the data to draw two conclusions. Firstly, the same strategic orientation has different effects on different innovation and entrepreneurship modes. Under the same conditions, the impact of entrepreneurial orientation on business model innovation is significantly greater than that on product innovation, which means hypothesis H1 holds. The influence of network orientation on product innovation is significantly greater than that on business model innovation, which means hypothesis H2 holds. Network orientation lays emphasis on the openness of the internal network and the cooperation of the external network in order to obtain the resources conducive to innovation, as supported by the test results of hypothesis H2. From the perspective of enterprise cooperation, Arnold (2011) discovered that the channel network embeddedness has a significant impact on innovation performance, and proposed that manufacturer channel network embeddedness can be viewed as a strategic resource of cooperative innovation. Through the relationship between learning and using the ability to promote the cooperative innovation performance, their core competitive advantage can be improved.



Secondly, innovation and entrepreneurship model play an important role in the transmission between strategic orientation and economic performance. In this study, it is demonstrated that, business model innovation and product innovation have different key driving factors in the same context. Entrepreneurial orientation can be effective in improving the economic performance of innovative and entrepreneurial enterprises through business model innovation. Through product innovation, network orientation can effectively improve the economic performance of innovative and entrepreneurial enterprises.

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