



Article

# The Effect of Learning Orientation and Business Model Innovation on Entrepreneurial Performance: Focused on South Korean Start-Up Companies

Byungyun Bae <sup>1</sup> and Sungyong Choi <sup>2,\*</sup>

<sup>1</sup> Division of Global Business, College of Smart Mobility Convergence, Halla University, 28 Halladae-gil, Wonju 26404, Korea; byungyun.bae@halla.ac.kr

<sup>2</sup> Division of Service and Operations Management, School of Business, Hanyang University, 222 Wangsimni-ro, Seoul 04763, Korea

\* Correspondence: sungyongchoi@hanyang.ac.kr

**Abstract:** The purpose of this study is to empirically confirm the importance of learning orientation in the operation of start-up companies. In the literature, it is well known that this learning orientation plays a big role in improving the performance of start-ups by cultivating organizational members' capabilities in detail, encouraging active learning, and creating new knowledge. To this end, a business model innovation framework for start-ups was established by empirically validating the theoretical research model. For the analysis, 139 questionnaires from start-ups with less than 7 years of business history in the incubation center were used. For the novelty of this work, it investigates the causal relationship between the learning orientation of start-ups, business model innovation, and start-up performance (technology acquisition and market expansion). Our research has contributed to the literature on entrepreneurship, innovation and strategy as follows. First, it contributed to the literature on entrepreneurship by redefining the performance of start-up companies as technology acquisition and market expansion through a review of previous studies and providing insight into the importance of learning orientation for start-ups through empirical studies. Second, it contributed to the innovation literature by confirming the importance of business model innovation for start-ups to achieve start-up performance through empirical research. Third, it contributed to the strategic literature by presenting and empirically confirming business model innovation through learning-orientation improvement as a way to achieve the performance of start-up companies.

**Keywords:** learning orientation; business model innovation; entrepreneurial performance; start-up companies



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## 1. Introduction

### 1.1. Motivation of the Study

Entrepreneurship is the driving force for economic growth. Empirical research to elucidate the cause of the performance of start-ups is very important in a situation where the global economy is stagnating due to COVID-19. South Korea is undergoing rapid pursuit of new developing countries (China, India, Vietnam, etc.) [1]. In order to differentiate from new developing countries, Korea is required to shift its industrial paradigm from its role as a production base of advanced countries based on relatively low wages and imitation technology to an advanced start-up economy [1]. In other words, based on new ideas and technologies, the development of innovative products and services that can compete with developed countries was forced to shift to an entrepreneurial economy, which is an important element of competitiveness. The success or failure of a founding economy depends on the emissions of competitive founders who can create new value. Founding not only creates new companies through innovation, but also brings about industrial and

economic development, develops the human resources needed for new industries and markets, and helps to develop industry and national competitiveness [2,3].

Learning orientation and innovativeness contribute to improving a company's competitiveness and outcomes with systems and cultures that acquire, share, and disseminate market and environmental knowledge and information [4–7]. Innovation is a learning-based process that is a fundamental prerequisite for a founding economy, and organizational learning plays an important role in defining innovation [8,9]. Organizational learning enhances quality, strengthens customer relationships, and provides sustainable profitability through improved business strategies [10]. Sustainable profitability is achieved through learning and business model innovation through historical data and experience. Business model innovation refers to value-creating activities and plans for the development of new products and services with creative ideas [11–13]. Ref. [3] argued that iterative learning through innovation is important because the use of new knowledge is difficult with traditional methods. For this reason, companies should improve their business models and form an innovation-related process base through iterative learning to achieve business results.

### *1.2. Purpose of the Study*

Recently, research on business model innovation has been actively conducted. Business model innovation studies are conducted globally in management [13], innovation [14,15] strategy [16,17]. It is being carried out in various fields. However, research in the field of entrepreneurship is quite lacking. Business model innovation promotes the achievement of corporate strategic goals [18]. A start-up company should continuously conduct strategic management in a way to create performance by securing a competitive advantage. The basic purpose of strategic management is to create competitiveness [19]. To this end, start-up companies should actively encourage the learning of organizational members and strive to create new knowledge. In addition, start-up companies must innovate their business models in a way that newly connects technology and the market, not technology itself, to achieve start-up performance [20]. In addition, project management is relevant for the organizational members of start-up companies to achieve outcomes by innovating their business models through learning. For the development of differentiated products and services from existing companies in a rapidly changing market environment, project management tools and technologies enhance the innovation capabilities of start-ups [21,22].

The purpose of this study is as follows. First, it aims to empirically confirm the importance of learning orientation (LO), in which start-up companies cultivate the capabilities of organizational members, actively encourage learning, and strive to create new knowledge in order to produce entrepreneurial performance (EP). Second, based on prior research, entrepreneurship performance (EP) is defined as technology acquisition (TA) and market expansion (ME). Third, the theoretical LO-BMI-EP research model is empirically tested to advocate the mechanism for business model innovation (BMI).

This study will be an important study in entrepreneurship, innovation, and strategy literature for the following reasons, and has practical significance. First, it will be possible to contribute to the entrepreneurship literature by defining the start-up performance of start-up companies as start-up performance and securing technology through prior research, and by providing insight into learning orientation to start-up companies through empirical research. Second, it will be possible to contribute to the innovation literature by confirming the importance of BMI for start-ups to achieve start-up performance through empirical research. Third, it will be possible to contribute to the strategy literature by revealing strategies for start-up companies to achieve start-up performance of securing technology and market expansion through empirical analysis of the LO-BMI-EP research model.

Although many studies have been conducted on learning orientation and innovation performance and management performance [2,8,23–25], the empirical research between learning orientation, business model innovation, and start-up performance for companies is still very lacking. Organizational learning, innovation, and performance-related studies were conducted mainly on companies with financial performance, such as large corpora-

tions and R&D companies [23–25]. The difference from these previous studies is that, first, the results that can be used for empirical studies of start-up companies that are not easy to achieve financial results are defined as the start-up performance of securing technology and market expansion [26,27]. Second, a structural model of learning orientation, business model innovation, and start-up performance (technology acquisition, market expansion) that can be applied to start-up companies was developed based on prior research. Third, in Korea, where a new industrial paradigm is being demanded with an advanced start-up economy, a survey was conducted on Korean start-ups to verify the hypothesis and present practical implications.

## 2. Theoretical Background

### 2.1. Learning Orientation

Learning orientation is an internal process that encourages the learning activities of organizational members, shares a vision, and strives to create new knowledge [4–6,28,29]. The level of corporate learning orientation refers to the degree to which work-related knowledge is created and utilized, which is the level at which management encourages employees' learning and development activities [5]. A firm's learning orientation directly affects firm performance [5,30,31] and this is expected to be the same for start-up firms.

A company with a high learning orientation can acquire and share information related to customers, competitors, technology and environmental changes, etc., and continuously launch new products and services to secure and maintain a competitive advantage [32]. In addition, start-up companies with high learning orientation will systematically acquire knowledge, information distribution, information interpretation, and organizational memory within the organization, so that high-level learning is possible and provides a foundation for innovation capability and entrepreneurial performance.

Start-up companies have fewer opportunities to continue learning and systematic work-related education systems compared to large companies. However, since the goals and visions of a company can be more deeply recognized by employees as the size of the company is smaller, education and learning based on the goals and vision of these start-ups are more important [33]. In particular, this means that the smaller the size of the company, the more flexible the organization and the ability to quickly respond to changes in the external environment through appropriate organizational strategies such as education and learning [33].

Ref. [34] emphasizes that organizations with high learning orientation not only learn naturally through work within the organization, but also emphasize future-oriented productive learning and creativity beyond the existing framework. Start-up companies with high learning orientation strive to ensure that members understand the purpose and strategy well, pursue continuous and systematic learning, promote knowledge accumulation, secure technology through innovation of new knowledge and business models or achieve start-up results of market expansion.

In this study, learning orientation was defined as an activity that actively encourages learning and strives to create new knowledge in order to cultivate the capabilities of organizational members to strengthen the competitiveness of start-ups.

### 2.2. Business Model Innovation

A business model is a way of describing how a company operates to explain value creation and capture of value [13]. Business model innovation refers to creating an innovative business model to acquire new value by developing a new business model that did not exist or did not previously exist. From this point of view, business model innovation refers to radical or disruptive innovation that affects the entire business rather than a gradual change in the business model [35].

As the conditions of competition between companies change and uncertainty grows, it is an era in which companies must create a business model suitable for their tangible and intangible assets in order to maintain their survival and competitiveness. Without its innovative business model, the results of innovation do not go back to the innovator or the

company. In other words, the inability of corporate members to create new business models means that they do not have the ability to create and acquire value. As a result, for a firm to acquire value, innovation must be combined with business model innovation [13]. Ref. [36] found that business model innovation is an important factor in corporate performance through a study of 376 Italian manufacturing SMEs.

Business model innovation is a very important factor for start-ups [37]. The need for new business models to access new markets and new business models created by the combination of technology and market are stronger than ever [38]. For start-ups with limited resources, business model innovation can have a major impact on start-up performance. In this context, [39] we argue that innovation is an important factor that positively affects business performance and growth in order to maintain competitiveness in an increasingly rapidly changing business environment. On the other hand, since innovation requires human knowledge, and capital, it is a risky task for start-ups with limited resources. However, start-ups have a tendency to boldly and quickly adjust the challenging business model innovation process [40]. These entrepreneurial tendencies of start-ups are helpful in increasing the start-up performance of securing technology and expanding the market by rapidly applying the acquired knowledge to new products [28]. In addition, the knowledge acquired by start-ups improves production technology, creates business model innovation, and results in higher start-up performance [41].

In [13], a business model was defined as a value creation plan. In this study, based on previous studies, business model innovation was defined as an activity and value creation plan that encourages creative ideas for the development of new projects, new products, and new services [11–13].

### 2.3. Entrepreneurial Performance

A company's performance is generally presented as financial performance, such as sales growth rate, investment return rate, and total asset growth rate. However, it is difficult to measure the performance of start-up companies only with numerical values in the financial statements due to the time lag between the initial investment and the generation of profits [27]. In addition, the establishment of the company's information system was not completed in the early stage of the establishment, and the reliability of accounting data was insufficient, making it difficult to conduct an objective evaluation. Therefore, the necessity of subjective performance measurement is emphasized considering that subjective evaluation rather than objective evaluation can provide information suitable for the purpose, the reliability of information is relatively higher, and qualitative evaluation is more realistic than quantitative evaluation [27]. In their study, [27] used market expansion and perceived job performance satisfaction as subjective indicators other than financial indicators. Prior research on entrepreneurial performance uses various measurement indicators, but rather than financial indicators generally used in business performance, it is measured by securing technology and market expansion in the process of preparing for business performance [26].

In this study, start-up performance was defined as securing technology and expanding the market during the start-up process. Technology acquisition means that a start-up company has secured technological differentiation capabilities through item development capabilities and intellectual property rights during the start-up process. Market expansion means that start-up companies have improved their ability to enter the market and secure demand sources during the start-up process.

## 3. Theoretical Framework and Hypotheses Development

### 3.1. Learning Orientation and Business Model Innovation

Learning orientation refers to the degree to which an organization receives and shares information about market changes, customer expectations and demands, competitive behavior, and development of new technologies to create new products or services that exceed competitive capabilities [42]. Learning-orientated firms learn faster than their competitors,

developing and implementing strategies that enable their products and services to gain a competitive advantage [43].

There are several previous studies that show that firms with high learning orientation are highly innovative [5,6,9,12]. It is said that a culture that values learning strengthens the relationship between the individual and the organization and leads to organizational commitment [8]. Farrell [19] confirmed through empirical studies that learning orientation has a positive effect on non-financial performance, such as organizational commitment and innovation.

Learning orientation is associated with new product success, and groups with a culture that emphasizes learning and development are more innovative [12,44,45]. That is, the higher the learning orientation, the higher the influence of a company on innovation for value creation [12,23]. Since a business model can be defined as a value creation plan [13], a company with a high learning orientation will have a high impact on business model innovation. Through these prior studies, it is expected that start-up companies with high learning orientation will have a positive effect on business model innovation.

**Hypothesis 1. (H1).** *The learning orientation of start-ups will have a positive effect on business model innovation.*

### 3.2. Business Model Innovation and Entrepreneurial Performance

Business model innovation is a powerful factor in overcoming the COVID-19 crisis [18,46]. A business model is important when a company intends to commercialize innovation [13,47]. Business model innovation is a value creation activity and plan for the development of new products and services through creative ideas [11–13].

Ref [36] found that business model innovation is an important factor in corporate performance through a study of 376 Italian manufacturing SMEs. There is growing consensus that firms succeed when their business models are dynamic and that business model innovation is key to firm performance [36,48–50].

In addition, [38] developed a business model framework from a new perspective linking technology and market. The entrepreneurial performance of start-up companies can be explained as the process of expanding the market by securing technological differentiation ability, entering the market, and securing demand [26,27]. Through these prior studies, it is expected that business model innovation of start-up companies will have a positive effect on the start-up performance of technology acquisition and market expansion.

**Hypothesis 2. (H2).** *Business model innovation of start-up companies will have a positive effect on technology acquisition.*

**Hypothesis 3. (H3).** *Business model innovation of start-up companies will have a positive effect on market expansion.*

### 3.3. Learning Orientation and Entrepreneurial Performance

Learning orientation provides a basis for achieving results by creating new knowledge and innovation by pursuing strategic learning and acquiring and sharing information related to customers, technologies, and markets [8,23–25]. Ref. [23] found that learning orientation had a significant effect on performance in a study of 187 US R&D companies. In addition, [24] found that organizational learning was found to have an impact on performance. Next, [8] found that organizational learning affects performance in a study of 408 large enterprises in Spain. Ref. [25] investigated the effects of knowledge sharing and performance on 200 female entrepreneurs in Indonesia.

Ref. [38] conducted a study from a new perspective that connects the technology and the market in the business model framework through social experiments at DGIST from 2011 to 2015. Since there are many cases where there is no financial performance in the early stages of start-up business, entrepreneurial performance can be measured by securing technology and expanding the market, which are non-financial performance [26,27]. Through these



prior studies, it is expected that the learning orientation of start-up companies has a positive effect on the start-up performance of technology acquisition and market expansion, and that technology acquisition has a positive effect on market expansion.

**Hypothesis 4. (H4).** *The learning orientation of start-up companies will have a positive effect on technology acquisition.*

**Hypothesis 5. (H5).** *The learning orientation of start-up companies will have a positive effect on market expansion.*

### 3.4. Technology Acquisition and Market Expansion

It is not easy for start-up companies to achieve sustainable financial results. For this reason, when measuring the performance of a start-up company, it is possible to measure the start-up performance by securing technology and expanding the market during the start-up process, which is a non-financial index rather than a financial index used for business performance [26,27]. Technology security refers to the ability to develop products and services in the process of starting a business, and it refers to securing technological differentiation factors compared to competitors [26,27]. Market expansion refers to the ability to enter the market and secure demand sources during the start-up process [26,27].

In general, start-up companies develop products and services by securing technology and expand the market through marketing. Through these preceding studies, it is expected that the acquisition of technology by start-up companies will have a positive (+) effect on market expansion.

**Hypothesis 6. (H6).** *The acquisition of technology by start-up companies will have a positive effect on market expansion.*

In the next session, we established a research model and tested the hypothesis of the effect of the learning orientation of start-up companies on business model innovation and start-up performance (technology security, market expansion) based on the previous research described above.

## 4. Research Methodology

### 4.1. Research Model

H1. The learning orientation of start-ups will have a positive effect on business model innovation.

H2. Business model innovation of start-up companies will have a positive effect on technology acquisition.

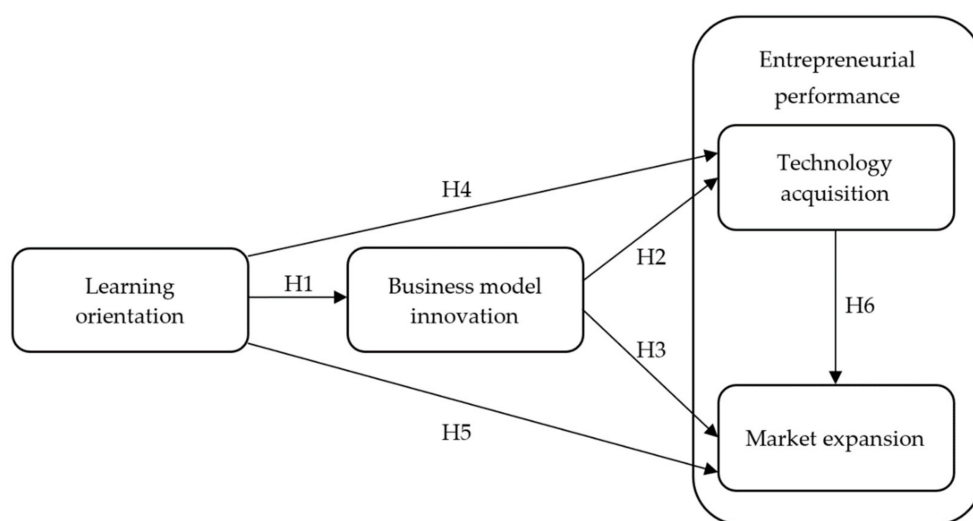
H3. Business model innovation of start-up companies will have a positive effect on market expansion.

H4. The learning orientation of start-up companies will have a positive effect on technology acquisition.

H5. The learning orientation of start-up companies will have a positive effect on market expansion.

H6. The acquisition of technology by start-up companies will have a positive effect on market expansion.

This study aims to find the factors for achieving start-up performance for the survival of start-ups in the rapidly changing business environment and to reveal the relationship between these factors. Among the various factors for start-ups to achieve start-up performance, this study focused on learning orientation and business model innovation factors based on prior research and developed a research model as shown in Figure 1. Based on previous studies, six research hypotheses were established as follows.



**Figure 1.** Research model.

#### 4.2. Measurement Variable

The effect of learning orientation of South Korean start-ups on business model innovation and start-up performance was measured using a structured questionnaire. The questionnaire items and sources of the questionnaire are shown in Table 1. The internal consistency of each construct was confirmed through Cronbach's alpha. The convergence validity of each construct was confirmed by performing confirmatory factor analysis (CFA) and calculating average variance extraction (AVE) and construct reliability (C.R.). And the discriminant validity of the construct was confirmed by comparing the AVE square root value of each variable and the correlation coefficient value. After checking the convergent validity and discriminant validity of each construct, the hypothesis was verified through structural equation modeling (SEM) analysis.

**Table 1.** Measurement variable and questionnaire items.

Construct	Operational Definition	Observed Variable	Description	Reference
Learning orientation	Activities that actively encourage learning and strive to create new knowledge to cultivate the ability of members of the organization to strengthen the competitiveness of start-up companies	Le1	Our company is encouraged to actively utilize acquired new knowledge or new technology.	[23,45]
		Le2	Our company shares and learns know-how with each other to improve business methods and procedures.	
		Le3	Our company shares success or failure cases and uses them for learning.	
		Le4	When introducing new equipment or equipment, our company encourages itself to learn and learn the contents quickly.	
Business model innovation	Value creation activities and plans for the development of new products and services through creative ideas	Bi1	Our company always devotes a lot of time to designing new ideas and items.	[11–13]
		Bi2	Even if our company is prepared for failure, we are constantly making new changes in management.	
		Bi3	Even if the existing ones are successful, I think that our company should boldly change the existing ones at some point.	
		Bi4	Our company reflects the new ideas of employees well in management.	

Table 1. Cont.

Construct	Operational Definition	Observed Variable	Description	Reference
Entrepreneurial performance	Technology acquisition	Te1	Our company's technology is recognized as being unique in the market	[26,27]
		Te2	Our company is focusing on developing its own technology rather than introducing external technology.	
		Te3	The number of applications for intellectual property rights (patent rights, utility model rights, design rights, trademark rights, copyrights, etc.) of our company is increasing.	
	Market expansion	Ma1	Our company intends to develop new items in addition to the existing items.	
		Ma2	Our company's overall ability to develop new products has improved.	
		Ma3	Our company's ability to secure customers has improved.	

#### 4.3. Data Collection

In order to carry out this study, a questionnaire was collected for a total of 5 months from January to May 2021 targeting start-up companies that moved into business incubation centers in Korea. There are about 250 business incubation centers in Korea, and about 6000 start-up companies are located there. The questionnaire collection was conducted in parallel with the method of requesting questionnaires from start-ups by visiting business incubation centers in the metropolitan and non-metropolitan areas, and the method of conducting a questionnaire through e-mail. A total of 151 questionnaires were collected, and 139 questionnaires were used for the final analysis, excluding those that were insincere. In the Small and Medium Venture Business Act of the Republic of Korea, a start-up company is defined as having less than 7 years of business experience. In Korea, companies with less than 7 years of experience are not easy to achieve stable financial performance, so various start-up support policies are prepared and supported. In the 139 samples used in the final analysis, the start-up business history was less than 7 years.

#### 4.4. Questionnaire Items and Operational Definitions

The questionnaire of this study was composed of questionnaires to measure the learning orientation, business model innovation, and entrepreneurial performance of start-ups based on previous studies. The entrepreneurial performance of start-up companies was divided into technology acquisition and market expansion, and questionnaire items were constructed. Table 1 below is the questionnaire for each variable according to the theoretical background.

Learning orientation, an independent variable, consisted of four questionnaire items based on the studies of [43,45]. And the operational definition of learning orientation is an activity that actively encourages learning and strives to create new knowledge in order to cultivate the capabilities of organizational members in order to strengthen the competitiveness of start-ups.

The parameter business model innovation consisted of 4 questionnaires based on the studies of [11–13]. And the operational definition of business model innovation is a value creation activity and plan for the development of new products and services through creative ideas.

The dependent variable entrepreneurial performance consisted of 3 items of technology acquisition and three items of market expansion based on studies by [26,27]. And



the operational definition of entrepreneurial performance is the performance of securing technology and expanding the market in the start-up process.

The questionnaire questions of each variable were measured on a Likert 5-point scale.

## 5. Analysis

### 5.1. Demographic Analysis

The demographic analysis results are summarized in Table 2. In the sample of this study, the gender was 85.6% male and 14.4% female, and the position was representative 57.6%, executive 22.3%, and employee 19.4%. Also, 10.8% of those under 25, 25.9% of those aged 26–35, 30.9% of those aged 36–45, 30.2% aged 46–55, and 2.2% older than 55. The majors of respondents were Engineering field 41.7%, Business field 19.4%, Humanities and social field 16.5%, Culture and arts field 9.4%, Sports field 2.9%, etc. 8.6%. As for the location of the workplace of the respondents, 43.2% were in the metropolitan area and 55.4% were in the non-metropolitan area.

**Table 2.** Characteristics of respondents.

	Item	<i>n</i>	%		Item	<i>n</i>	%
Gender	Male	119	85.6	Major	Engineering field	58	41.7
	Female	20	14.4		Business field	27	19.4
Position	CEO	80	57.6		Humanities and social field	23	16.5
	Executives	31	22.3		Culture and arts field	13	9.4
	employee	27	19.4		Sports field	4	2.9
Age	25 or less	15	10.8		etc.	12	8.6
	26~35	36	25.9	Location of workplace	Missing value	2	1.4
	36~45	43	30.9		Metropolitan area	60	43.2
	46~55	42	30.2		Non metropolitan area	77	55.4
	56 or more	3	2.2		Missing value	2	1.4
		Total				139	100.0

### 5.2. Reliability and Validity Analysis

Statistical analysis was performed to verify the reliability and validity of the research model, and the results of the analysis are summarized in Table 3. In the reliability analysis, the minimum allowable value for Cronbach's alpha is generally 0.7 [51], and in this study, the Cronbach's alpha value for all variables was 0.7 or higher. It can be said that the reliability of all variables was secured according to the literature [51]. In Table 3, as a result of the CFA (Confirmatory factor analysis) analysis, the model fit satisfies or is very close to the general standard, so it can be said that this research model is suitable [51]. The convergence validity of the model was verified by calculating the average variance extraction (AVE) value and the construct reliability (C.R.) value through CFA analysis. In Table 3, standardized loading was 0.5 or more, C.R. value was 0.7 or more, and AVE value was 0.5 or more. Through these results, the convergence validity of the research model can be confirmed because the correlation between the measured values of each variable is high [51].

**Table 3.** Results of reliability and validity analysis.

Constructs.	Items	Mean	S.D.	Standardized Loading	Cronbach's Alpha	C.R.	AVE
Learning orientation	Le1	3.86	0.856	0.714 ***	0.797	0.856	0.598
	Le2	3.92	0.703	0.695 ***			
	Le3	3.85	0.842	0.690 ***			
	Le4	3.82	0.879	0.727 ***			
Business model innovation	Bi1	3.63	0.950	0.604 ***	0.724	0.796	0.569
	Bi3	3.94	0.886	0.783 ***			
	Bi4	3.91	0.760	0.731 ***			
Technology acquisition	Te1	3.43	0.901	0.784 ***	0.724	0.757	0.512
	Te2	3.66	0.905	0.610 ***			
	Te3	3.50	0.988	0.665 ***			
Market expansion	Ma1	4.22	0.743	0.688 ***	0.785	0.869	0.69
	Ma2	3.87	0.769	0.852 ***			
	Ma3	3.68	0.818	0.718 ***			
Model fit	$\chi^2$ (df) 130.988 (71), $p$ 0.0, $\chi^2$ /df1.845, IFI 0.910, TLI 0.881RMSEA 0.078, RMR 0.109, CFI 0.907, NFI 0.823, GFI 0.884						
General standard	Significance of $\chi^2$ ( $p >.05$ ), $\chi^2$ /df less than 3, IFI greater than 0.9, TLI greater than 0.9, RMSEA less than 0.1, RMR less than 0.08, CFI greater than 0.9, NFI greater than 0.8, GFI greater than 0.9						

Note: \*\*\*  $p < 0.01$ .

Table 4 shows the results of correlation and discriminant validity analysis between variables. In Table 4, the bold diagonal line represents the square root value of AVE. The AVE square root value of each of these variables has a larger value than the correlation coefficient value, so the discriminant validity of this research model can be confirmed [51].

**Table 4.** Results of discriminant validity.

Constructs	Learning Orientation	Business Model Innovation	Technology Acquisition	Market Expansion
Learning orientation	0.774 *			
Business Model innovation	0.761	0.754 *		
Technology acquisition	0.409	0.345	0.715 *	
Market expansion	0.386	0.52	0.651	0.831 *

Note: \* The diagonal in boldface is the square root of AVE.

### 5.3. Assessment of Structure Fit of the Model

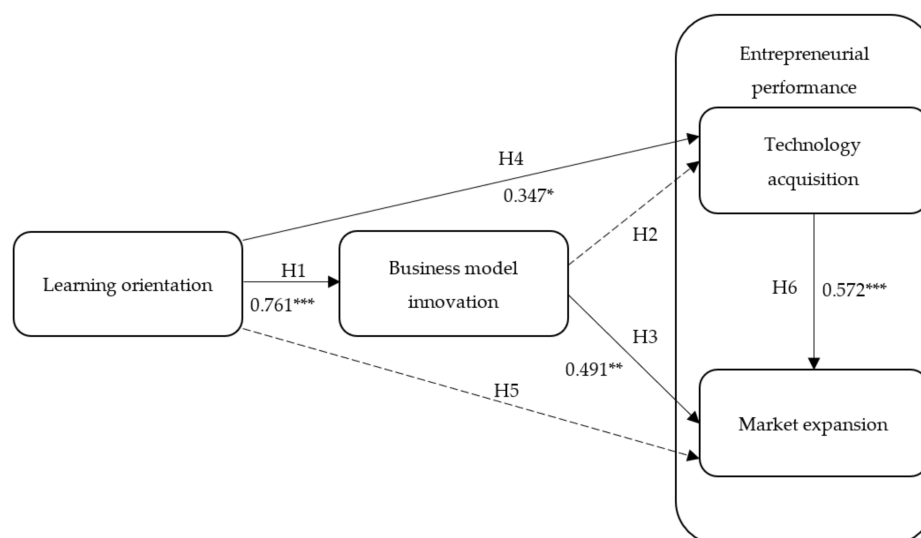
Table 5 summarizes the results of hypothesis testing after SEM (structure equation model) analysis. The  $\chi^2(p)$  is 121.727 (0.00) and  $\chi^2/\text{degree of freedom}$  is 2.063, which is less than 3, which meets the general criteria. The IFI value is 0.906 and the TLI value indicates that the explanatory power of the structural model is 0.873. The value of CFI is 0.904 (CFI greater than 0.9), indicating the explanatory power of the model. The value of RMSEA is 0.088 (less than 1.0), which is good enough. In addition to the above-mentioned indices of model fit, other indices (RMR, NFI, GFI) also met or had values very close to the general criteria, so the final structural equation fit analysis proved appropriate. As a result of the hypothesis test of the model, it can be seen in Table 5 that two of the six hypotheses were rejected.

**Table 5.** Results of hypothesis test.

	Hypotheses	$\beta$	t	Adoption
H1	Learning orientation → Business model innovation	0.761 ***	5.294	accept
H2	Business model innovation → Technology acquisition	0.082	0.394	reject
H3	Business model innovation → Market expansion	0.491 **	2.498	accept
H4	Learning orientation → Technology acquisition	0.347 *	1.67	accept
H5	Learning orientation → Market expansion	−0.222	−1.174	reject
H6	Technology acquisition → Market expansion	0.572 ***	4.366	accept
Model fit	$\chi^2$ (df) 121.727 (59), $p$ 0.0, $\chi^2$ /df 2.063, IFI 0.906, TLI 0.873, CFI 0.904, RMSEA 0.088, RMR 0.052, NFI 0.833, GFI 0.886			
General standard	Significance of $\chi^2$ ( $p > 0.05$ ), $\chi^2$ /df less than 3, IFI greater than 0.9, TLI greater than 0.9, CFI greater than 0.9, RMSEA less than 0.1, RMR less than 0.08, NFI greater than 0.8, GFI greater than 0.9			

Note: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

As a result of the SEM analysis, as shown in Figure 2, the  $t$ -value was 5.294 ( $p < 0.01$ ) for the effect of the business model on the learning orientation of start-ups, and hypothesis H1 was adopted at the significance level of 1%. The effect of start-up business model innovation on technology acquisition Hypothesis H2 was rejected. As for the effect of business model innovation of start-up companies on market expansion, the  $t$ -value was 2.498 ( $p < 0.05$ ), so hypothesis H3 was adopted at the 5% significance level. As for the effect of the learning orientation of start-up companies on technology acquisition, the  $t$  value was 1.67 ( $p < 0.1$ ), and hypothesis H4 was adopted at the 10% significance level. The effect of the learning orientation of start-up companies on securing the market Hypothesis H5 was rejected. As for the effect of technology acquisition of start-up companies on market expansion, the  $t$  value was 4.366 ( $p < 0.01$ ), and hypothesis H6 was adopted at the significance level of 1%.

**Figure 2.** Results of the Research model. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

#### 5.4. Discussion

The economy is in recession due to COVID-19 not only in Korea but also around the world. Entrepreneurship is the driving force of economic growth. In this situation, research to reveal the performance of start-up companies is very important. Studies on learning orientation, business model innovation, and management performance were mainly conducted by large or medium-sized enterprises. This study developed a framework to study

the learning orientation, business model innovation, and start-up performance of start-up companies. This model was tested using data from Korean start-ups with a history of less than 7 years. As a result of the empirical study through SEM, 4 out of 6 hypotheses were significant. Based on the results of the empirical study, various guidelines can be provided to both scholars and practitioners on the role of learning orientation as a prerequisite for business model innovation, an important factor for overcoming COVID-19 [18].

First, as a result of this study, entrepreneurial performance was defined as technology acquisition and market expansion [24,28], business model innovation was defined in terms of innovation [27,28,45], and then the questionnaire was revised and empirically analyzed. As a result, it was confirmed that Cronbach's alpha 0.724 for technology acquisition, Cronbach's alpha 0.785 for market expansion, and Cronbach's alpha 0.724 for business model innovation. As a result, guidelines for entrepreneurship performance and business model innovation variables were provided to researchers in the field of entrepreneurship and innovation who wish to conduct empirical research on start-up companies.

Second, the learning orientation of start-up companies had a significant positive (+) effect on business model innovation. These results confirm that the existing studies [12,23] that the higher the learning orientation affects the innovation for value creation are equally applicable to start-up companies. In other words, it can be said that the learning orientation, which fosters the capabilities of start-up members and encourages learning, affects business model innovation, which is a value creation plan for the development of new products and services through creative ideas. Business model innovation reflects the recognition and acceptance of creative ideas. Organizations committed to learning seek a full understanding of the environment, including customers, competitors, and new technologies. The results of this study suggest that business model innovation itself is a broad learning process that enables the implementation of new ideas, products or processes.

Third, it was found that the business model innovation of start-up companies did not have a significant effect on technology acquisition and had a significant positive (+) effect on market expansion. These results are partially consistent with previous studies [36] that revealed that business model innovation is an important factor in corporate performance. In other words, start-up companies revealed that business model innovation through creative ideas and value creation plans for developing new products and services does not affect technology security but affects market expansion such as market entry ability and ability to secure demand sources. Start-up companies have various risk factors in the process of launching services and products, verifying the market, and generating profits. Business model innovation not only helps companies to generate revenue during crises, but also contributes to their sustainable readiness for the future [18]. Through the results of this study, the importance of business model innovation was revealed to achieve the start-up performance of start-up companies' market expansion. Through these research results, guidelines on the importance of business model innovation were provided to entrepreneurship and innovation researchers, as well as to the representatives and executives and employees of start-up companies.

Fourth, the learning orientation of start-up companies was found to have no significant effect on market expansion and had a significantly positive (+) effect on technology acquisition. Moreover, the acquisition of technology by start-up companies had a significant positive (+) effect on market expansion. These findings are partially consistent with previous studies [8,23–25] that learning orientation significantly affects performance. In other words, the learning orientation that encourages start-up companies to learn and strives to create new knowledge does not affect market expansion but affects the acquisition of technologies that secure technological differentiation capabilities such as intellectual property rights. In addition, it can be said that the acquisition of technology by which a start-up company secures the ability to differentiate technology through item development ability and intellectual property rights during the start-up process affects market expansion, such as the ability to enter the market and secure demand sources. It is not surprising to find that learning orientation has a direct impact on corporate performance. The literature has long

acknowledged the importance of the relationship. However, since there are not many studies on start-up companies, this study provided guidelines on the importance of learning orientation to entrepreneurship researchers, founders, and executives and employees. This study suggests that start-up companies' learning-orientation can achieve entrepreneurial performance by securing essential resources and technologies and expanding the market through the influence of learning-orientation on competitive advantage.

Through this study, we provided a strategy to expand the market through business model innovation by increasing learning orientation for start-ups to achieve start-up performance and a strategy to secure technology and expand the market by increasing learning orientation. The strategy of the start-up company through the analysis of results through two important pathways (H1 and H3 pathways, H4 and H6 pathways) of the structural model is as follows, and the results of this empirical analysis will be important guidelines for researchers in the fields of entrepreneurship, innovation, and strategy, as well as executives and employees of start-up companies.

First, the learning orientation of start-ups had an effect on business model innovation ( $\beta = 0.761^{***}$ ), and business model innovation had an effect on market expansion ( $\beta = 0.491^{**}$ ). It is consistent with the results of studies on the continuous release of products and services and the results of previous studies that learning orientation affects innovation [1,10,17,35]. Start-up companies can achieve the start-up performance of market expansion through business model innovation through operation in a way that can increase their learning orientation.

Second, the learning orientation of start-up companies had an effect on technology acquisition ( $\beta = 0.347^{*}$ ), and technology acquisition had an effect on market expansion ( $\beta = 0.572^{***}$ ). This is a learning-oriented start-up that actively utilizes new knowledge and new technologies, shares know-how to improve work methods and procedures, shares successes and failures with each other and uses them for learning, and wants to learn quickly when new equipment or devices are introduced. It means that a company can achieve the start-up performance of market expansion by securing technology.

## 6. Conclusions

Through this study, we confirmed the importance of learning orientation as a prerequisite for business model innovation [18,46], which is a strong factor for overcoming the COVID-19 crisis, for start-up companies, and Strategies to achieve this were identified. In this study, a sample of 139 start-ups with less than 7 years of experience was used for the final analysis, and structural equation analysis was performed to verify the hypothesis.

As a result of this study, the implications for theory and practice in light of the theoretical framework are as follows. First, entrepreneurship performance was defined as technology acquisition and market expansion [26,27], and through empirical studies, Cronbach's alpha 0.724 of the technology acquisition questionnaire and Cronbach's alpha 0.785 of the market expansion questionnaire were confirmed. In addition, business model innovation was defined in terms of innovation [11–13], and the business model innovation Cronbach's alpha 0.724 was confirmed through empirical studies. This is thought to be helpful for researchers in the field of entrepreneurship or innovation who conduct empirical research using entrepreneurial performance and business model innovation variables. Second, the importance of learning orientation was confirmed in order for start-ups to achieve start-up performance, as in the previous studies [5,30,31,52,53], which showed that learning orientation affects business performance. This suggests that we need to cultivate the capabilities of organizational members, actively encourage learning, and strive to create new knowledge. Third, this study provided a strategy to expand the market through business model innovation by increasing learning orientation for start-ups to achieve start-up performance, and a strategy to secure technology and expand the market by increasing learning orientation.

This study contributed to the entrepreneurship, innovation, and strategy literature as follows. First, it contributed to the literature on entrepreneurship by defining the start-up



performance of start-up companies as securing technology and market expansion through prior research, and providing insight into the importance of learning orientation to start-ups through empirical research. Second, it contributed to the innovation literature by confirming the importance of business model innovation for start-ups to achieve start-up performance through empirical research. Third, as a strategy for start-up companies to achieve the start-up performance of securing technology and market expansion, the path to secure technology and market expansion by increasing learning orientation and to innovate the business model and the path to market expansion by increasing learning orientation. It contributed to the strategy literature by revealing it through empirical analysis.

The theoretical contribution of this study is to analyze the causal relationship of the effect of learning orientation on business model innovation and start-up performance with a structural equation model for start-up companies. Analysis Results First, the learning orientation of start-ups affects business model innovation, and business model innovation affects market expansion. Second, the learning orientation of start-up companies affects technology acquisition, and technology acquisition affects market expansion. The practical implication of this study is that start-ups can expand the market through business model innovation through organizational culture that enhances learning orientation, and market expansion through securing technology by increasing learning orientation.

The results of this study will serve as theoretical data for the CEO and executives and employees of start-ups who want to have new start-up opportunities to achieve start-up performance. In addition, it can be used as basic data for the development of policies to support start-up businesses by government agencies and local governments that support start-ups, such as the Ministry of SMEs and Start-ups.

The limitations of this paper and future research directions are as follows. First, empirical studies on Korean start-ups that have been recognized by advanced countries in 2021 according to the UN decision are meaningful, but additional research on start-ups in advanced countries such as the United States and Europe is needed to generalize this research model. Second, this study is meaningful in that it is a quantitative study of the application of the concept of business model innovation to start-up companies. However, there is a limit to the generalization of the research results from the perspective of business model innovation because the business model innovation measure was used as a business model innovation measure that was revised and supplemented based on previous research on innovation. In future studies, empirical studies based on business model measures are needed. Third, in this paper, entrepreneurial performance is defined as securing technology and expanding the market, but it is necessary to refine the concept of entrepreneurial performance through quantitative and qualitative future research. Fourth, since the research model of this thesis reveals some of the causes of start-up performance of start-up companies, it is necessary to expand the research model or develop a new research model by finding more new variables that affect start-up performance.

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