Determinants of Entrepreneurial Intention and Startup Timing – Who and When will Start up?

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Abstract: As the activation of startup based on creative ideas is perceived to be a new growth engine for the national economy, political and social interest in campus CEOs is increasing. Under this background, the present study analyzes determinants of entrepreneurial intention and startup timing. What differentiates this study from other previous studies is that it helps better forecasting of actual startup activities through a simultaneous or consecutive analysis of factors affecting entrepreneurial intention and preferred startup timing.

The analytic results suggest that direct and indirect experience of startup, access to funding, fear of failure and the entrepreneurship education are key factors affecting entrepreneurial intention and startup timing. In addition, most of undergraduate and graduate students prefer the startup after getting a job to the startup right after the graduation. Consequently, policy support is necessary including employment-linked startup support programs, entrepreneurship education for the employed, and corporate venturing.

Keywords: Entrepreneurial intention, startup timing, experience of startup, entrepreneurship education, corporate venturing.

1. INTRODUCTION

In the aftermath of the global financial crisis, major countries around the world are now emphasizing the re-emergence of startups and entrepreneurship for their survival and growth. The reason why major countries promote startups and entrepreneurship is because they serve to create jobs and provide new engine for growth.

The world has now entered into an era of growth without employment, in which job creation through large companies has reached its limitations, so startups can be an alternative. Evidences supporting this assertion are various. For example, startups create a significant number of new jobs in the U.S., with over 3.7 million new jobs created by businesses less than one year old in 2023 alone, according to the Bureau of Labor Statistics, which proves high employment impact of startup companies.

Startups and entrepreneurship are essential for national economic growth. Wennekers et al. (2005) show a U-shaped relationship between the ratio of new startups less than 3 months and per capita GDP by analyzing Global Entrepreneurship Monitoring (GEM) data. Lee and Lee (2013) argues that variables representing entrepreneurship indices including startup support policy and education have significant positive impact on per capita GDP.

As the successful stories of campus CEOs like as Apple, Google and Facebook were born, there has been mounting political and social interest in startups led by undergraduate and graduate students in the campus. To promote campus startups, the Korean government is also implementing various supportive policies to create favorable environment and culture for startups. Colleges and universities are also stepping up their efforts to support startups by offering education programs for startups. Despite such efforts by the government and universities, the entrepreneurship level of undergraduate and graduate students is not high due to their preference of stable jobs over startups, lack of confidence, and fear of failure, which have all negative affected startup activities.

Against this background, the present study aims at identifying key factors affecting entrepreneurial intention of campus CEOs and their startup timing through empirical analysis and presenting implications for which factors or areas the government needs to strengthen its support. In other words, this study attempts to provide a theoretical basis for the government to discover potential campus CEOs and provide necessary support for them by identifying key characteristics of campus CEOs with high entrepreneurial intention. This study also attempts to provide a theoretical ground for government support policies tailored to the needs of campus CEOs by identifying their preferred startup timing. For these purposes, the present study has set the following two research questions.

First, what characteristics do potential campus CEOs with entrepreneurial intention have?

Second, when is the preferred timing for starting up their business by potential campus CEOs?

There have been many previous studies on entrepreneurial intention itself and factors affecting the entrepreneurial intention, through which researchers attempted to forecast startup activities. However, not everybody with entrepreneurial intention actually starts up his or her own business,

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so the analysis of entrepreneurial intention alone is not sufficient to understand the whole picture. Unlike the previous studies, the present study also analyzed factors determining startup timing which reflect the behavioral characteristics of potential CEOs with entrepreneurial intention. What differentiates the present study from other previous studies is that the present study helps better forecasting of actual startup activities through a simultaneous or consecutive analysis of factors affecting entrepreneurial intention and preferred startup timing.

2. THEORETICAL BACKGROUND

Literature review has been conducted to design research models for empirical analysis of entrepreneurial intention and startup timing of potential campus CEOs. In the previous studies, entrepreneurial intention has been often measured by young potential CEOs' will to start up business. The conceptual definitions of entrepreneurial intention can be summarized as follows. In a broader concept, entrepreneurial intention is composed of three sub-intentions: startup intention to start up a new business or acquire and operate an existing business before or after college graduation; preparation intention to prepare resources and capabilities for starting up or acquiring a business; negative intention to strongly oppose startup activities. In a narrower concept, entrepreneurial intention only includes startup intention (Wu and Wu, 2008; Nabi et al., 2006; Guerrero et al., 2008).

As for factors affecting entrepreneurial intention, many researchers have pointed out individual factors, sociocultural factors, startup support programs and etc.

Individual factors include demographic characteristics such as gender and age, psychological traits or dispositions like personality, experience or capabilities. Mazzarol et al. (1999) argued that women's intention to become startup CEOs was weaker than men's. Pruett et al. (2009) analyzed the impact of cultural, social and psychological factors on entrepreneurial intention and discovered that self-efficacy or proactiveness was a better predictor than social or cultural factors in explaining entrepreneurial will. Regarding experiences, Kolvereid (1996) argued that experienced business founders had higher entrepreneurial intention than novice business founders. Moreover, it was reported that those whose parents were entrepreneurs tended to show higher entrepreneurial intention (Krueger, 1993).

There are various sociocultural factors affecting entrepreneurial. In general, individuals tended to decide to start up a new business when they perceived the startup environment was favorable while they showed the opposite when they had negative perception of startup environment (Luthje and Franke, 2003; Kristiansen and Indarti, 2004). The startup environmental factor representing sociocultural factors is well explained in "Entrepreneurship at a Glance" published by OECD. As OECD presents, socio-cultural factors affecting entrepreneurial intention include regulatory framework, market conditions, access to finance, knowledge creation and diffusion, entrepreneurial capabilities and culture.

One of the important sociocultural factors is barriers entrepreneurs face when they start up a business. Giacomin et al. (2011) analyzed barriers to entrepreneurial intention such as lack of capital, lack of entrepreneurial capabilities, fear of bankruptcy or failure, and lack of knowledge on startup activities. The results of the analysis revealed that the impact of these barriers to entrepreneurial intention did not differ by country but the levels of sensitivity to each barrier differed by country.

Entrepreneurial intention varies depending on the degree of policy support as well as family and relatives' support. Support or encouragement from family members, relatives or friends was shown to be associated with the development of entrepreneurs (Davidson and Honig, 2003; Baughn et al., 2006). Souitaris et al. (2007) analyzed the effect of entrepreneurship program, one of government support policies, on entrepreneurial intention and confirmed the positive effect of entrepreneurship education on the attitudes and actual entrepreneurial intention. It also revealed that inspiration was the most influential benefit of educational programs.

The reason for abundant research on entrepreneurial intention and factors affecting entrepreneurial intention is because entrepreneurial intention is considered to be a valid predictor of actual startup. However, there exists a time lag between entrepreneurial intention and real action. Due to the lack of empirical studies, the correlation between entrepreneurial intention and action still remains uncertain. For these reasons, Katz (1990) raised a question about the link between entrepreneurial intention and behavior and Lüthje and Franke (2003) pointed out that not everyone wishing to start a business ended up with actual startup.

Because the choice of startup timing represents the behavioral characteristic of a person with entrepreneurial intention, analysis of factors affecting startup timing should be conducted in addition to the analysis of entrepreneurial intention itself. By analyzing both entrepreneurial intention and startup timing, it gets possible to forecast actual startup more accurately. Therefore, the present study analyzes factors affecting startup timing concurrently with the analysis of factors of entrepreneurial intention.

3. RESEARCH MODEL AND ANALYSIS METHOD

3.1. Models for Analysis

The data analyzed in the present study represent individuals' choices in entrepreneurial intention and startup timing. As was confirmed in the literature review, individuals' choices are made under the influences of various determinants such as personal factors (demographic characteristics, psychological traits and tendencies, experience, and capabilities), sociocultural factors (startup barriers as well as startup environment including regulatory framework, market conditions, and access to financing), entrepreneurship support programs (entrepreneurship education). Therefore, it is necessary to identify econometric models that can represent the relationship between dependent variables (i.e. entrepreneurial intention and startup timing) and explanatory variables (*i.e.* personal factors, sociocultural factors, and entrepreneurship support programs).

For this analytical purpose, econometric models suitable for the data used are necessary. The startup decision-making of players (for this research, undergraduate and graduate

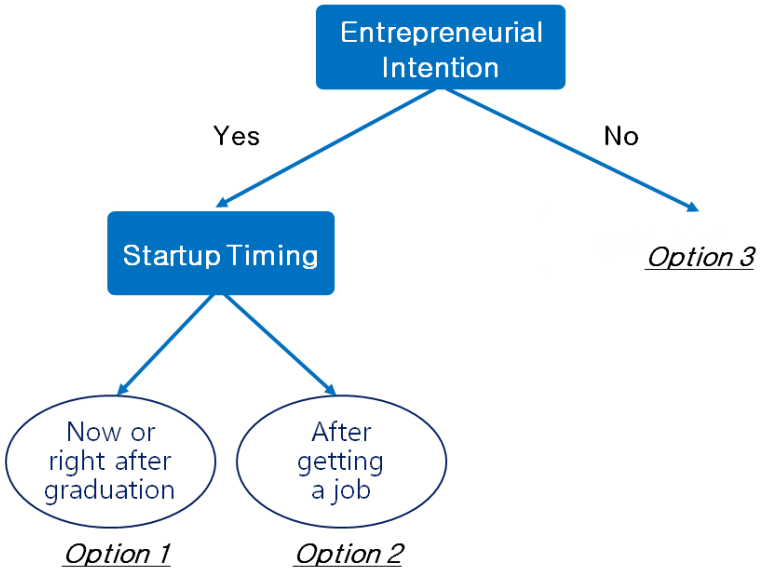

Fig. (1). Startup Decision-making Structure depending on Entrepreneurial Intention and Startup Timing.

students) can be understood in a hierarchical structure as in Fig. (**1**). The first level choice is between "Yes" and "No". "Yes" means that a respondent has entrepreneurial intention while "No" means the opposite. If the respondent's answer is "Yes", then it proceeds to level 2 decision-making on startup timing between "now or right after the graduation" and "after having job experience". As Fig. (**1**) shows, there exist three options for final decision-making on entrepreneurial intention and startup timing: start up a business now or right after the graduation; start up a business after having job experience; no intention to startup a business.

Regression modeling taking continuous variables as dependent variables is not suitable for analyzing discrete or categorical data of startup decision-making, where the types of variables are expressed as the results of decision-making. Instead, discrete choice modeling taking discrete variables as dependent variables is often used for this type of data analysis. Depending on the types of choice data, assumed error terms, preference dissimilarity reflected, and estimation methods, various models can be applied. Of these models, a nested logit model is often used for the hierarchical structural analysis of Figure 1, where the results of choices are in a hierarchical structure.

A nested logit model can reflect all the results of choices at multiple levels. So, the present study adopts a structural formula to better incorporate startup choice data structured in two levels. Based on the random utility theory, the utility that respondent n obtains from alternative j in nest B_k denoted as (Train, 2009):

$$U_{nj} = \alpha W_{nk} + \beta Y_{nj} + e_{nj} \quad (j \in B_k) \qquad (1)$$

Here, W_{nk} depends only on variables that describe nest k. These variables differ over nests but not over alternatives within each nest. Meanwhile, Y_{nj} depends on variables that describe alternative j. These variables vary over alternatives within nest k. α and β are coefficient vector that we want to estimate. While $\alpha W_{nk} + \beta Y_{nj}$ is the deterministic part that is measurable, e_{nj} is the stochastic part that cannot be measured.

When applied to the hierarchical structure of Figure 1, B_k represents level 1 choices; if the respondent has entrepreneurial intention, $k = 1$ and if not, $k = 2$. The startup timing under nest B_1 is represented with j value. If the respondent has intention to start up a business "now or right after the graduation", it is represented as $j = 1$ and if the startup timing is "after having job experience", it is represented as $j = 2$.

When the respondent n selects the alternative i under nest B_k (the probability of choosing alternative $i \in B_k$, P_{ni}), it means that the respondent chooses B_k at the first level (marginal probability of choosing an alternatives in B_k, P_{nB_k}) and, under the choice of B_k, the respondent selects alternative i (the conditional probability of choosing alternative i given that an alternative in nest B_k, $P_{ni|B_k}$). So P_{ni} can be expressed as the product of P_{nB_k} and $P_{ni|B_k}$.

$$P_{ni} = P_{ni|B_k} \times P_{nB_k} \quad (2)$$

A nested logit model assumes the following GEV (Generalized Extreme Value) distribution for $e_n = \{e_1, \cdots, e_n\}$. The term I_{nk} links the upper and lower models by bringing information from the lower model into the upper model. I_{nk} is often called as the inclusive value or inclusive utility of nest B_k. The coefficient of I_{nk} in the upper model is λ_k, which is called the log-sum coefficient. λ_k reflects the degree of independence among the unobserved portions of utility for alternative in nest B_k. If $\lambda_k = 1$, it assumes the same degree of independence with other multinominal logit models, there is no need to use a nest logit model. So only in case

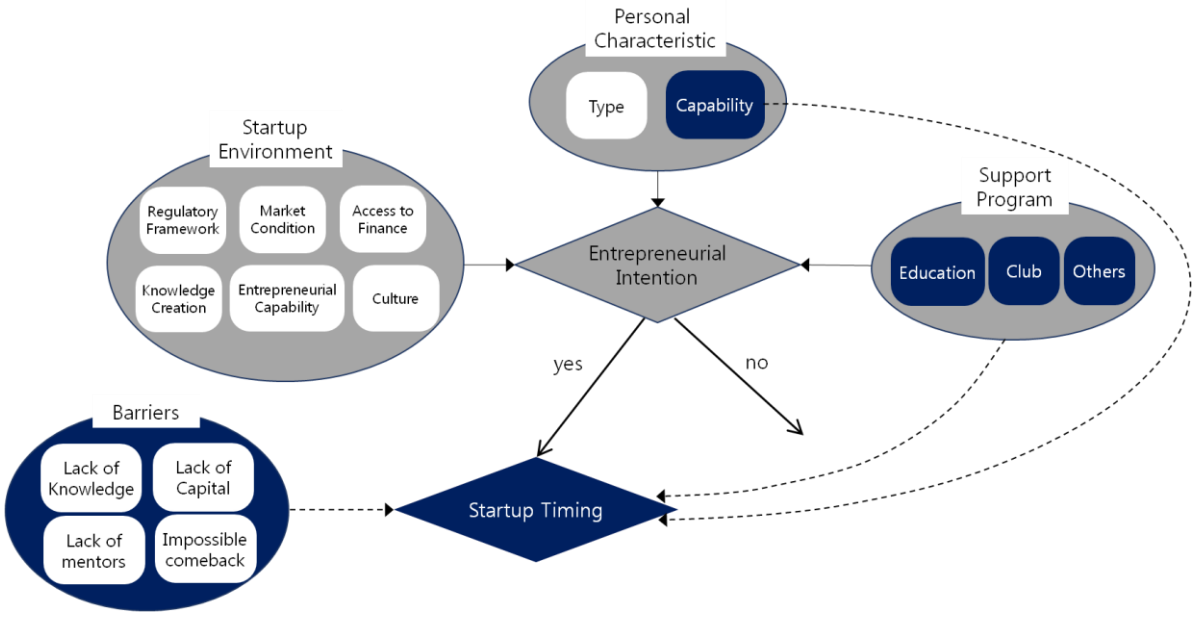

Fig. (2). Key Factors Affecting Entrepreneurial Intention and Startup Timing.

of $0 < \lambda_k < 1$, the use of a nest logit model seems appropriate.

$$exp\left(-\sum_{k=1}^{K}\left(\sum_{j\in B_k} e^{-\frac{\epsilon_{nj}}{\lambda_k}}\right)^{\lambda_k}\right) \quad (3)$$

When GEV distribution is assumed, P_{nB_k} and $P_{ni|B_k}$ can be expressed as follows.

$$P_{nB_k} = \frac{e^{W_{nk}+\lambda_k I_{nk}}}{\sum_{l=1}^{K} e^{W_{nl}+\lambda_l I_{nl}}}, \; I_{nk} = ln\sum_{j\in B_k} e^{Y_{nj}/\lambda_k} \quad (4)$$

$$P_{ni|B_k} = \frac{e^{Y_{ni}/\lambda_k}}{\sum_{j\in B_k} e^{Y_{nj}/\lambda_k}} \quad (5)$$

Finally, if the individuals of the sample are all reflected, the log-likelihood function can be extracted from the probability of choosing alternative $i \in B_k$, P_{ni}. If the maximum likelihood method is applied to the log-likelihood function, parameter values can be estimated.

3.2. Selection of Variables

As Fig. (**1**) suggests, there are three dependent variables in the present study that represent three choices related to entrepreneurial intention and startup timing: startup now or right after the graduation; startup after having job experience; have no entrepreneurial intention. Based on the literature review and survey data, explanatory variables of entrepreneurial intention and startup timing have been drawn from the two-level nested logit model as in Fig. (**2**) and Table **1**.

Since the analysis of the present study is based on the survey data, factors affecting entrepreneurial intention that have been identified in the previous studies including personal factors, socio-cultural factors and entrepreneurship support programs have been reflected in setting the variables of the present study. In detail, the following key factors have been incorporated. Personal factors include types (gender, age, educational level, and parent's entrepreneurial experience) and capabilities (academic achievement, major, and startup experience). For socio-cultural factors, startup environment (regulatory framework, market conditions, access to finance, knowledge creation and diffusion, entrepreneurial capabilities, and social perception) and barriers (lack of knowledge, lack of capital, lack of mentors, and impossible comeback) have been included. In relation to startup environment, the evaluation results of the importance of environmental factors affecting startup by young entrepreneurs have been adopted as variables. For entrepreneurship support programs, government policy, entrepreneurship education and startup club activities have been adopted as variables.

Entrepreneurial intention tends to be determined by one's perception or personal traits, which is often affected by startup environment. In general, when a person perceives the startup environment to be favorable, he or she shows a higher tendency of deciding to start up a business (Luthje and Franke, 2003; Kristiansen and Indarti, 2004). Unlike entrepreneurial intention, startup timing is determined by behavioral characteristics related to one's challenging spirit instead of one's perception. Many prior studies on entrepreneurship have also pointed out confidence, risk-taking and proactiveness as important dimensions of personal behavior related to challenging spirit (Covin and Slevin,1989; Lumpkin and Dess, 1996).

As the Global Entrepreneurship Monitoring (GEM) asks whether a respondent has confidence-related entrepreneurial capabilities, confidence is an important factor that determines personal capabilities. Confidence-related personal behaviors may vary by individual depending on one's perception of the degree of barriers. Support for startup club activities can help develop young entrepreneurs' startup experience and entrepreneurship education can strengthen their

entrepreneurial capabilities and help overcome the lack of knowledge. Therefore, personal capabilities, startup barriers, and entrepreneurship support programs are key determinants of startup timing.

Table 1. Variables used in This Analysis.

	Variables	Name of Variables	Description	
Personal traits	Educational levels	GRADU	- Undergraduate=1, Graduate=0	
	Gender	GENDER	- Male=1, Female=0	
	Age	AGE	- Age of respondent	
	Parents' experience	PARENT	- A parent has an experience of entrepreneur or professional executive manager=1, If not=0	
Personal capability	Academic achievement	SCORE	- High=3, Average=2, Low=1	
	Major	MAJOR	- Business/economics=1, If not=0	
	Startup experience	EXPER	- Startup experienced=1, If not=0	
Startup environment			Model 1 - If the following variables are considered as important determinants of startup by young entrepreneurs=1, If not=0	Model 2 - If Korea is evaluated to be disadvantaged in the following variables=1, If not=0
	Regulations	REGUL	- Startup regulations and labor market environment	- Startup regulations and labor market environment
	Market conditions	MARKET	- Domestic market monopoly and access to foreign markets	- Domestic market monopoly and access to foreign markets
	Access to finance	FINAN	- Access to angels and VCs	- Access to angels and VCs
	Knowledge creation and diffusion	RAND	- R&D investment	- R&D investment
	Entrepreneurial capabilities	TRAIN	- Entrepreneurship education	- Entrepreneurship education
	Social perception	RISK	- Social perception and culture toward entrepreneurs	- Social perception and culture toward entrepreneurs
Entrepreneurial barriers	Lack of knowledge	KNOW	- Degree of sensing barriers due to the lack of knowledge about startup activities (7-point scales: Strongly agree=7, Average=4, Not at all=1)	
	Lack of capital	MONEY	- Degree of sensing barriers due to the lack of capital (7-point scales)	
	Lack of mentors	MENTOR	- Degree of sensing barriers due to the lack of mentors (7-point scales)	
	Impossible comeback	AGAIN	- Degree of sensing barriers due to impossible comeback after failure (7-point scales)	
Entrepreneurship support program	Startup club	CLUB	- Experience of participating in startup clubs or communities=1, If not= 0	
	Entrepreneurship education	EDU	- Experience of participating in entrepreneurship skills or mindset education=1, If not=0	

	Degree of help	RHELP	- Degree of helpfulness of entrepreneurship education (Very helpful=5, Helpful=4, Average=3, Less helpful=2, Not helpful all=1)
	Awareness of government policy	POLICY	- Degree of awareness of government policy (High=3, Average=2, No=1)
Level 1 choice constant		AYES	- A constant representing "Yes" from two choices at level 1 decision-making on entrepreneurial intention
Level 2 choice constant		BNOW	- A constant representing "Now or right after the graduation" from two choices at level 2 decision-making on startup timing

Table 2. Descriptive Statistics for Entrepreneurial Intention and Startup Timing.

Classification		No. of Respondents	Responses (%)					
			Startup Timing					No Intent to Start Up
			Currently Preparing for Startup	Right after the Graduation	Within 5 Years after Getting a Job	Within 5-10 Years after Getting a Job	After 10 Years or more of Job Experience	
Total		1,196	4.3	4.7	17.8	22.8	31.5	18.9
Educational levels	Under-graduate	1,082	3.0	4.8	17.7	24.0	32.0	18.6
	Graduate	114	16.7	3.5	19.3	11.4	27.2	21.9
Gender	Male	731	6.3	4.4	16.7	22.2	35.0	15.5
	Female	465	1.1	5.2	19.6	23.9	26.0	24.3

3.3. Data for Analysis

For analysis, the survey was conducted with undergraduate and graduate students of universities located in Seoul metropolitan areas of Korea to investigate their entrepreneurial mindset. The specific survey questions were asked about respondent's previous startup experience, intention to start a business in the future, previous experience of participating in startup clubs or communities. In case where the respondents had entrepreneurial intention, additional questions were asked about planned startup timing, key startup motivations, key factors affecting startup decisions, barriers, and required support policies for startup.

Total 1,196 undergraduate and graduate students responded, of whom the majority were undergraduates. The ratio between male and female respondents was 61% vs. 39%.

Asked about whether they have intention to start a business, 81.1% of the respondents said "yes" while 18.9% said "no". Asked about the startup timing, only 4.3% of the respondents answered that they were "currently preparing for startup" and a meager 4.7% said that they planned to "start up a business right after the graduation". The remaining respondents were shown to intend to start up a business after getting jobs and accumulating some experiences. The details are displayed in Table **2**.

4. RESULTS

The results of the analysis using nested logit model are summarized in Table 3 to show the relationship between the determinants of entrepreneurial intention and startup timing for undergraduate and graduate students. For estimated models, two models, Model 1 and Model 2 have been considered. As was explained in Table 3, these two models are similar except for the application of explanatory variables of factors affecting startup by young entrepreneurs.

Since a nested logit model is often estimated from bottom to top in a tree structure, estimated results of startup timing, Level 2 decision, can be reviewed first. Startup timing has two choices of "now or right after the graduation" and "after having job experience". Extracted from survey with individual respondents, the explanatory variables of these two choices are all personal traits-related ones, so they have constant values regardless of the choice selected. So, to be able

to discern the differences in the impacts of personal traits variables on choices, the impact on one choice should be set as 0 so that the impact on the other choice can be relatively drawn. In the present study, the impact of personal trait variables on the choice of "now or right after the graduation" was estimated by setting the impact on the choice of "after having job experience" as 0.

The review of the estimation results suggests the following. First, the estimated coefficient of the variable *EXPER* turns out to have a significant positive (+) value, implying undergraduate or graduate students with prior startup experience have intention to start up a business now or right after the graduation. Second, the estimated coefficient of the variable *AGAIN* under the category of the barriers turns out to have a significant negative (-) value. This implies that those who perceives impossible comeback after failure to be a major barrier have higher intention to start up a business after having job experience than to start up now or right after the graduation. Third, the estimated coefficient of the variable *EDU* turns out to have a significant negative (-) value, implying those with prior experience of receiving entrepreneurship education are more inclined to start up a business after job experience than to start up immediately. Fourth, the estimated coefficient of *RHELP* variable turns out to have a significant positive (+) value. This can be interpreted that those who believe that the entrepreneurship education was very helpful have intention to start up a business now or right after the graduation.

Startup requires various kinds of knowledge on management, market, finance and law. Successful young CEOs consider thorough preparation and market test as key success factors. This means when young entrepreneurs obtain entrepreneurial knowledge and capabilities directly through actual startup experience or indirectly through entrepreneurship education offering useful experience for actual startup, it can expedite the startup timing. However, if the contents of the entrepreneurship education are too general or too plain, young entrepreneurs often feel that they have not gained sufficient capabilities required for startup, so they tend to start up a business after accumulating job experience.

In the hierarchical structure composed of two levels, there are two choices at the higher level, Level 1 for the entrepreneurial intention: one is "Yes" for having intention to start up a business and the other is "No" for having no intention. The application of the same analysis procedure reveals the following estimated results. First, the estimated coefficient of *GENDER* variable turns out to have a significant positive (+) value, implying male students have higher entrepreneurial intention than their female counterparts. Second, the estimated coefficient of the variable *PARENT* turns out to have a significant positive (+) value, suggesting that those whose parents are business owners or executive managers have higher entrepreneurial intention. Third, the estimated coefficient of the variable *MAJOR* also turns out to have a significant positive (+) value. This means those majoring in business or economics have higher entrepreneurial intention than other majors. Fourth, the estimated coefficient of the variable *POLICY* turns out to have a significant positive (+) value as well. This implies that those who are well aware of government policies on startup tend to have higher entrepreneurial intention than those who are not.

The fact that the estimated coefficient of the variable *PARENT* has a significant positive (+) value suggests that those who gain indirect experience via their parents show higher entrepreneurial intention and parents play an important role in startup decision-making by undergraduate and graduate students in Korea. The higher entrepreneurial intention among business and economics majors can be interpreted that they have acquired more knowledge on finance, accounting and management necessary for startup than other majors.

The estimated results of Model 1 and Model 2 are almost identical except for that the variable *FINAN* under the startup environment category was estimated to be statistically significant in Model 2. This implies that respondents who perceive Korea to be lagging other advanced countries in financing tend to have lower entrepreneurial intention.

The value of the coefficient of λ_1, an inclusive parameter, is estimated to be statistically significant between 0 and 1, implying a nested logit model is more suitable than a multinominal logit model for the present study in terms of methodological feasibility.

Table 3. Result of Nested Logit Model for Entrepreneurial Intention and Startup Timing.

Classification	Name of Variables	Model 1			Model 2.		
		Estimated Coefficient	t-value		Estimated Coefficient	t-value	
Determining startup timing (Now or right after the graduation j=1, After getting a job j=2)	BNOW	-12.7056	-2.3812	*	-12.8196	-2.3494	*
	SCORE	0.8566	1.1415		0.7996	1.4304	
	MAJOR	-1.6341	-1.5963		-1.5872	-1.5865	
	EXPER	6.6518	2.3966	*	6.3276	2.3300	*

	KNOW	-0.0228	-0.0832		-0.0281	-0.1055	
	MONEY	0.4133	1.4204		0.3916	1.3730	
	MENTOR	0.3757	1.3581		0.3867	1.4211	
	AGAIN	-0.7162	-2.8155	**	-0.6918	-2.7414	**
	CLUB	2.6253	1.7740		2.5240	1.7947	
	EDU	-6.7075	-2.0565	*	-6.6175	-2.0831	*
	RHELP	2.1156	2.2971	*	2.0602	2.2896	*
	POLICY	1.2438	1.4117		1.1130	1.3129	
Determining entrepreneurial intention (Yes k=1, No k=2)	AYES	-0.6575	-1.3373		-0.6038	-1.1883	
	GRADU	-0.1614	-0.4841		-0.2078	-0.6291	
	GENDER	0.4407	3.1275	**	0.4582	3.2678	**
	AGE	-0.0068	-0.3697		-0.0050	-0.2688	
	PARENT	0.4760	3.1038	**	0.4584	3.0081	**
	SCORE	-0.0959	-0.7868		-0.0986	-1.0026	
	MAJOR	0.3703	2.2590	*	0.3913	2.4068	*
	EXPER	-1.0583	-1.3646		-0.9137	-1.1763	
	REGUL	-0.1213	-0.9215		-0.2216	-1.2729	
	MARKET	0.0322	0.2088		-0.0165	-0.1035	
	FINAN	-0.2377	-1.3817		-0.4801	-2.2377	*
	RAND	-0.2784	-1.2577		-0.2402	-1.0864	
	TRAIN	0.1077	0.6370		-0.2562	-1.1412	
	RISK	0.1225	0.7272		0.1556	0.9482	
	CLUB	-0.7141	-1.5823		-0.7133	-1.6501	
	EDU	0.0342	0.0578		0.0074	0.0124	
	RHELP	0.0674	0.3812		0.0774	0.4369	
	POLICY	0.4940	2.8419	**	0.5407	3.1209	**
Inclusive parameter	λ_1	0.2685	2.4977	*	0.2821	2.4389	*
Log-likelihood (Estimated model, $L(\hat{\beta})$		-985.5056			-982.2118		
Log-likelihood (All variables 0, $L(\hat{0})$		-1358.5685			-1358.5685		

Note: ** and * are statically significant at the significance levels of 1% and 5% respectively.

5. CONCLUSION AND IMPLICATIONS

The analysis of entrepreneurial intention and startup timing has revealed that direct or indirect startup experience, investment capital, and fear of failure are the most influential determinants, suggesting entrepreneurship education is important for indirect acquisition of startup related knowledge. In addition, the choice of startup timing is a behavioral characteristic of potential entrepreneurs and most of students prefer to start up a business after getting a job and accumulating some experiences. Therefore, based on the results of the analysis, the following support policies need to be developed to induce successful early startup by undergraduate and graduate students in Korea.

First, practical education like writing up business proposals should be included in the curriculum of entrepreneurship education programs. At the same time, active support for startup clubs should be provided to help young entrepreneurs experience small-scale startups early on. The case of Bobson College testifies the importance of practical curriculum like writing up business proposals in entrepreneurship education. Bobson College operate entrepreneurship courses as requirement courses and require more than 90% of enrolled students to write up business proposals before graduation. In addition, convergence academic programs should be pursued by offering business and economics courses dealing with such topics as investment, accounting and finance to science and engineering majors.

Second, it is necessary to build a financial system and social safety net that can allow entrepreneurs' comeback after failures. In the U.S., most of the investments in startups are made in convertible notes, so that only corporates take the responsibility for failure. Likewise, the financial system in Korea should become more favorable to investment in startups rather than a loan. Especially young entrepreneurs who start up a business before graduation should have priority in the investment from the government and should not be held accountable financially for failures.

Third, considering that most of undergraduate and graduate students prefer to start up a business after having some job experience, it is necessary to launch startup support programs linked with employment that first provide support for employment and later render support for startup in two or three years. A good example is the Venture for America (VFA), a non-profit organization founded by an entrepreneur Andrew Yang in 2011. This program sends college graduates of prestigious schools to cities in need of reconstruction such as Detroit or New Orleans to work at early stage startup companies for two years and accumulate various experiences necessary for startup. Through these experiences, the program entices college graduates into starting new businesses in the region, thus contributing to activation of the regional economy.

Lastly, it is necessary to promote entrepreneurship education and corporate venture support programs for the employed who plan to start up their own businesses after having some job experience. Entrepreneurship education program for employees can be offered through startup education centers at college campus as part of life-long education programs. In addition, corporate venturing programs that support spin-off startups and startup accelerating programs that support future entrepreneurs should be also fostered. In order to promote corporate venturing programs that are currently being operated by a small number of large companies, it is necessary to postpone the newly launched startup companies through the corporate venture programs to be affiliated with their parent companies. In Korea, if a large company has more than 30% of equity of a newly launched startup through the corporate venturing, it should be affiliate of the large company. And then, the trade between two companies will pay the penalty for unfair trade.

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Received: August 23, 2025 Revised: August 30, 2025 Accepted: October 03, 2025