

A Study on the Effects of Intrinsic Motivation, Extrinsic Motivation and Pre-knowledge of Office Workers on the Hybrid Start-up Intention

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직장인의 내재적 동기, 외재적 동기와 사전지식이 Hybrid 창업의도에 미치는 영향 연구

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Abstract This study identified the influence of employees' hybrid start-up intention (intention to start a business while maintaining a job) on the employees' self-determination motivation (intrinsic motivation, extrinsic motivation) and prior knowledge through the Model of Goal-directed Behavior (MGB). We used a PLS-SEM called SmartPLS 3.0 for 126 valid samples collected by judgement extraction for office workers throughout June 13, 2020 to July 3, 2020, and empirically evaluated the measurement model (internal consistency reliability, convergent and discriminant validity) and the structural model (multicollinearity, determination coefficient, effect size, predictive relevance, etc.). Only the intrinsic motivation for realizing the hybrid start-up goal of office workers had a significant impact on the hybrid start-up attitude and subjective norms, and the prior knowledge of hybrid start-up had a significant impact on the hybrid start-up desire and the hybrid start-up intention. In order to induce hybrid start-ups for workers with unstable employment, we need systems and programs that can inspire employees with intrinsic motivation and knowledge about hybrid start-up, so follow-up researches are necessary to analyze about government systems and consulting support that can promote hybrid start-up.

Key Words : Hybrid start-up, Behavior model, Motivation, Knowledge, Consulting, Start-up intention

요약 본 연구는 목표지향적 행동모델(MGB)를 통해 직장인들의 hybrid 창업의도(직장을 유지하면서 창업을 하려는 의도)에 대하여 직장인의 hybrid 창업 관련 자기결정성 동기(내재적 동기, 외재적 동기), 사전지식 등의 영향을 파악하였다. 2020년 6월 13일부터 7월 3일까지 직장인을 대상으로 판단추출법에 의해 수집된 126개의 유효한 표본에 대하여 통계프로그램 SmartPLS 3.0이라는 PLS-SEM을 사용하였으며, 측정모델 평가(내적 일관성 신뢰도, 집중 및 판별타당도)와 구조모델 평가(다중공선성, 결정계수, 효과크기, 예측적 접합성 등)로 실증적 분석을 하였다. 직장인들의 hybrid 창업목표 실현에 대한 내재적 동기만 hybrid 창업태도와 주관적 규범에 유의한 정의 영향을 주었으며, hybrid 창업 관련 사전지식이 hybrid 창업열망과 창업의도에 유의한 정의 영향을 주는 것으로 나타났다. 고용이 불안정한 직장인들의 hybrid 창업을 유도하기 위해 직장인들에게 내재적 동기를 고취시키고 hybrid 창업 관련 지식을 제공하는 제도와 프로그램이 필요하므로 향후 연구에서는 hybrid 창업을 활성화할 수 있는 정부의 제도와 컨설팅 지원에 대한 분석이 필요하다.

주제어 : 하이브리드 창업, 행동모델, 동기, 지식, 컨설팅, 창업의도

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1. Introduction

After entering the 21st century, the worldwide unemployment caused by layoffs due to the rapid economic downturn by the 2008 financial crisis and COVID-19 in 2020 along with the Fourth Industrial Revolution has been eliminating some out-of-date jobs creating new innovative jobs, and it destabilized the employment of office workers. This will also increase the number of part-time jobs, such as flexible working hours, rather than full-time jobs, which will lead to some monetary difference between the rich and the poor among office workers and maintain low income for part-time workers.

Full-time start-ups who fail to respond to the economic downturn as mentioned above or start their business without any business experience don't have stable income other than their business, raising the risks of bankruptcy.

There is a rise in the hybrid start-ups, in which office workers start a business while working at a company to increase their income due to unstable employment and reduce future failures from start-ups through business experience[1,2]. In addition, it is projected that there will be an increase in the number of one-person hybrid start-ups using online space and shared offices, as well as YouTubers and VJs that start with low capital in order to reduce the risk of start-up failures.

There should be an intention to start a business, and behavioral models make great predictions[3]. In precedent studies, many researchers have studied start-up intention in behavioral models for college students, preliminary entrepreneurs, and office workers, but not many have studied start-up intention for hybrid start-ups who maintain their jobs.

According to start-up statistics in 2019, 68.1% of all the start-ups were established after retirement, 20.6% with concurrent positions, and the remaining

11.3% while they were on a leave of absence in 2019[4]. The researches on hybrid start-up intention should be expanded as hybrid start-ups are anticipated to be activated in the future to utilize spare time from working five days a week, prevent any decrease in living expenses due to unemployment, and prepare for economic activities after retirement.

Some studies analyzed hybrid start-up intention in behavioral models or studied in conjunction with job satisfaction and self-efficacy of start-ups[5,6], but research has not been conducted about the effects of self-determination motivation and prior knowledge on hybrid start-ups, although it is one of the antecedent variables that affect hybrid start-up intention.

Therefore, it is necessary to identify influential factors that can increase hybrid start-up intention to stimulate workers' hybrid start-ups. This way, it could reduce the risk of income reduction that could result from unexpected unemployment or business failure. The purpose of this study is to empirically analyze whether the self-determination motivation of intrinsic and extrinsic motivation influences hybrid start-up attitudes, and if prior knowledge related to hybrid start-ups affects hybrid start-up desire and start-up intention in the Model of Goal-directed Behavior (MGB) to find factors that can enhance hybrid start-up intention.

In this study, we have established a research model by combining the well-known MGB with variables such as self-determination motivation and prior knowledge, but it stands out because the research model targeted on office workers with hybrid start-up intentions, and these subjects have not been targeted in researches until now.

2. Theoretical Background

2.1 Behavioral Models

Since all social activities are generated by human

behaviors, behavioral models have been created by various scholars to study human behavior, with typical behavioral models being the Theory of Reasoned Action (TRA), the more advanced Theory of Planned Behavior (TPB), and the Model of Goal-directed Behavior (MGB) that is widely applied in recent studies[7-9]. TRA is a prediction of behaviors related to the individual's willful factors, and two factors, attitude and subjective norm, are said to be key prerequisites for behavior intention that affect the actual behavior[7]. TPB has increased the explanatory power of behavior by additionally presenting the factors of perceived behavioral control, which is an unconscionable factor in TRA[8]. MGB is to compensate for the problem that TPB focuses on the human cognitive aspects, which overlooks the human emotional aspects, and adds emotional variables presented as positive or negative anticipated emotions, desire as variables prior to behavior intention, and the frequency and recency of past behaviors which represent the influence of past behaviors[9].

So far, many researchers have used MGB, the extended behavioral model as mentioned above, to study the behaviors related to various areas of human behaviors. The intention to start a business depends on one's own will and it was studied by many scholars through MGB to predict the intention of start-up in various industries[3].

In case of MGB, office workers' attitudes, positive anticipated emotion, and negative anticipated emotion influenced their desire to start a business, and the desire to start a business had a meaningful positive impact on the intention to start a business, but subjective norm and perceived behavior control did not cause a significant impact[6]. Along with their attitudes, subjective norms, and perceived behavioral control, the effects of social support and social capital on preliminary female entrepreneurs' start-up intentions were studied in the behavioral model, and variables, excluding social support, had

a significant positive impact on the start-up intention[10]. In the analysis about the effects of start-up attitudes, perceived behavior control, and subjective norms on start-up intentions of college students, only subjective norms did not have a significant impact[11].

In the analysis about the impact on contributing behavior intention through behavioral models in virtual communities, attitude toward contributions, group norms, perceived behavioral control, and anticipated emotions have a significant impact on the desire to participate, except for subjective norms[12].

In this study, we conducted a research on the workers with hybrid start-up intentions, thus replacing behavior intention, which was a variable presented in MGB, with hybrid start-up intention. Hybrid start-up desire was used as the antecedent variable for hybrid start-up intention and subjective norms, positive anticipated emotion, negative anticipated emotion, and perceived behavioral control were used as the antecedent variables for hybrid start-up desire.

2.2 Hybrid Start-ups

Hybrid entrepreneurs were defined as individuals who engage in self-employment activities while holding a primary job in wage work[1,5]. Hybrid type start-ups are very common in Northern Europe countries, and as of 2006, 32% of Swedish workers were hybrid entrepreneurs, and this rate increased to 47% as of 2010[13,14]. It is generally known that their transition into full-time start-ups is smoother due to their experiences of hybrid entrepreneurship in research on self-employment by hybrid entrepreneurs[15]. In case of South Korea, office workers have been subject to a 52-hour workweek since 2018. According to the result of a research by the Korea Institute of Startup & Entrepreneurship Development in 2019, start-ups that make it to the hybrid start-up

standard take up about 31.9% of all the start-ups in South Korea[4].

Scholars say that there are three important motivations for entering hybrid start-ups: financial gain, non-monetary gain such as hobbies, and job security[16]. With less overtime at work and more free time on the weekends, office workers are investing in hobbies and self-improvement in their spare time. However, due to the repeated economic crisis around the world or in each country and the widespread use of artificial intelligence, the number of laid-off workers is increasing and new jobs are being produced. Office workers can lose their jobs at any time and need to spend extra time on start-ups since it only requires little work to prevent a decrease in the household income. In particular, in order to reduce the financial and economic risks that result from any failure to start a business, office workers tend to start a hybrid business while they are working. Hybrid start-ups are also diversifying into online start-ups, non-store start-ups, and one-person start-ups that require low capital.

Some studies show that female employees with children under the age of 18 are less likely to start hybrid businesses due to childcare and education problems, and that office workers under the age of 44 are more likely to enter hybrid start-ups[16]. Some scholars say that full-time workers are more likely to start businesses than part-time workers and the unemployed, and that entrepreneurial experiences directly affect business entry[17]. In South Korea, the ratio of hybrid start-ups is lower than that of advanced countries due to the ban on concurrent employment, and if women are representatives, they often do business under the name of the female spouse even if they start hybrid start-ups because of preferential policies.

2.3 Self-determination Motivation

Human beings are instinctively curious and in

order to implement the curiosity, individuals make certain psychological decisions, which they describe as the self-determination theory (SDT)[18]. Individuals have a strong desire to achieve their goals despite risks, and an important psychological factor in making decisions based on their own pure will is called the intrinsic motivation in SDT, and they intend to start a business in recognition of the heightened accessibility to tax benefits, rewards, opportunities, information or resources supported in connection with the start-up, where the external environmental factors during the process of obtaining results for a particular act function as the extrinsic motivation of SDT[19].

Self-determination motivation includes three basic psychological needs: perceived autonomy to self-regulate one's behavior, perceived ability to feel productive and effective at work, and perceived relevance to create a sense of belonging to others, and it has a positive, important impact on college students' attitudes to learning management systems[20]. Some scholars studied self-determination motivation, including disabled motivation other than intrinsic and extrinsic motivations, and for people with disabilities, disabled motivation and intrinsic motivation in tourism have a significant effect on tourism attitudes, and extrinsic motivation has a meaningless effect on the attitudes[21]. In the study that involves defining intrinsic motivation as pleasure, challenge, and accomplishment, and defining extrinsic motivation as recognition, reward, and promotion, only accomplishment, recognition and promotion were identified to have a significant impact on the job attitudes of hotel employees[22].

For restaurant workers, both intrinsic and extrinsic motives have a significant definition effect on subjective norms related to the degree of pressure from the people around them, meaning that motivations such as confidence in one's

behavior decisions can also be positively evaluated by the people around him or her[19]. According to the protection motivation theory, perceived vulnerabilities, response costs, and self-efficacy are motivations for determining and also responding to threats and risky behaviors in certain situations, all of which have significantly affected the subjective norm of information security policy compliance[23].

In this study, we distinguished self-determination motivation into intrinsic and extrinsic motivations that caused a positive influence as shown in precedent studies, and empirically analyzed the effects of both motivations on hybrid start-up attitude and subjective norm.

2.4 Prior Knowledge

Memories of different kinds of knowledge systems, including the features of goods, associations between products, specific brands, useful experiences, or strategies were defined as the prior knowledge[24]. The prior knowledge can generally be divided into those obtained from external information and also from experiences, and when consumers have a high level of prior knowledge, the classification criteria for products tend to be subdivided to improve their ability to evaluate product purchases. It is known that various studies have been conducted regarding prior knowledge, including the impact of prior knowledge on information retrieval activities, on the product evaluation, and on the consumer decision-making process[25].

In the persuasion knowledge model, there are topic knowledge, persuasion knowledge, and agent knowledge as prior knowledge structures of target consumers on the website, where persuasion knowledge and agent knowledge displayed a significant impact on the consumers' behavioral intentions[26]. In the case of studying whether prior knowledge affects the intention to continue marine sports, prior knowledge did not have a significant

impact on the continuation intention, indicating a contrary result to prior knowledge having a significant impact on several types of behaviors, such as traveling and visits[27]. This seems to show the opposite effects of prior knowledge related to risky behavior intentions. The definition of prior knowledge depends on the field of research, which defines LCC (Low Cost Carrier) airlines as LCC features, whether they are knowledgeable enough to explain to others, service levels provided, and methods for satisfaction[28]. In the study of the impact of prior knowledge of LCC airlines on their intention to select LCC airlines, prior knowledge has had a significant impact on their intention to act as a choice[28].

In this study, we analyze the impact of prior knowledge on hybrid start-up intention, and further analyze whether prior knowledge has an impact on hybrid start-up desire as it has the greatest impact on start-up intention.

3. Research Methods

3.1 Research Model

We established the research model by using 10 latent variables as shown in Figure 1. Intrinsic motivation (IM), extrinsic motivation (EM) and prior knowledge (PK) were added to the precedent study, which was studied by modifying the start-up attitude (SA), subjective norm (SN), positive anticipated emotion (PAE), negative anticipated emotion (NAE), perceived behavioral control (PBC), hybrid start-up desire (HSD), and hybrid start-up intention (HSI), the components of MGB that is generally used in predicting entrepreneurship since it carries compatibility with the hybrid start-up[5, 14].

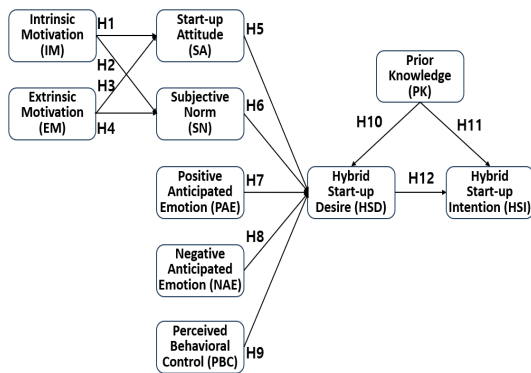


Fig. 1. Research Model consisting of 10 latent variables and 12 hypotheses

3.2 Research Hypothesis

In Figure 1, 12 research hypotheses (H) between the 10 latent variables were established as follows through the influence relationship that refers back to precedent studies.

As we have seen in the theoretical background, it was displayed that intrinsic and extrinsic motivations have a positive definition effect on the attitudes and subjective norms in precedent studies, but it could vary depending on the subject or the field of study[19-23]. The following research hypothesis was established as it is expected to have a positive impact on the start-up attitude of office workers and the subjective norms, which are the standards around them, if motivated to start a business while they are working.

- H1 : Intrinsic motivation (IM) will have a positive impact on the start-up attitude (SA)
- H2 : Intrinsic motivation (IM) will have a positive impact on the subjective norm (SN)
- H3 : Extrinsic motivation (EM) will have a positive impact on the start-up attitude (SA)
- H4 : Extrinsic motivation (EM) will have a positive impact on the subjective norm (SN)

The five antecedent variables (attitude, subjective norm, positive anticipated emotion, negative

anticipated emotion, perceived behavioral control) in the MGB also differed in their effects on entrepreneurship aspirations depending on the subjects or research areas.[6, 10-12]. In particular, subjective norm and perceived behavioral control often do not have any meaningful effects. In this study, hybrid start-ups generate non-monetary benefits of business experience and self-satisfaction in addition to financial benefits, so the higher the start-up attitude, the higher the response from the people around you, the higher the expectation, and the better control you have, the higher positivity is expected to affect hybrid start-up desire, so the following hypotheses were established.

- H5 : Start-up attitude (SA) will have a positive impact on the hybrid start-up desire (HSD)
- H6 : Subjective norm (SN) will have a positive impact on the hybrid start-up desire (HSD)
- H7 : Positive anticipated emotion (PAE) will have a positive impact on the hybrid start-up desire (HSD)
- H8 : Negative anticipated emotion (NAE) will have a positive impact on the hybrid start-up desire (HSD)
- H9 : Perceived behavioral control (PBC) will have a positive impact on the hybrid start-up desire (HSD)

Precedent studies have analyzed that knowledge related to dangerous behavioral intent does not have any meaningful effects, but most of the knowledge has a positive effect on behavioral intention[26-28]. In addition, knowledge acquisition is acquired to do something, so it is likely to have a positive effect on aspiration, an antecedent variable of behavior intention. Therefore, in hybrid start-up, the higher the advanced knowledge level about hybrid start-ups, the more likely it is for there to be a positive impact on hybrid start-up desire and intention, and the hypotheses were

established as follows.

- H10 : Prior knowledge (PK) will have a positive impact on the hybrid start-up desire (HSD)
- H11 : Prior knowledge (PK) will have a positive impact on the hybrid start-up intention (HSI)

In MGB of precedent studies, aspiration for any action is the antecedent variable that influences the intention of the action the most, all of which have a significant effect on the intention of the action[6, 9, 12]. Therefore, the following hypothesis was established in hybrid start-ups just like in precedent studies, as hybrid start-up desire were expected to have a positive effect on hybrid start-up intention.

- H12 : Hybrid start-up desire (HSD) will have a positive impact on the hybrid start-up intention (HSI)

3.3 Measurable Definition of Variables

Based on the preceding studies on the hybrid start-up and MGB, self-determination motivation, and the prior knowledge, the latent variables and measurement variables used in this study were summarized as follows.

Intrinsic motivation (IM) was measured by intrinsic motivators including life vitality, work fulfillment, and business ability verification, and extrinsic motivation (EM) was measured with extrinsic motivators including recognition from the people around him or her, prospects for hybrid start-ups, and expectations for an increase in the household income. Start-up attitude (SA) was measured by the usefulness, wisdom, and necessity of the start-up, while subjective norm (SN) was measured by the approval, understanding, and recommendation from family members, friends, colleagues, and others. Positive anticipated emotion (PAE) was measured by positive expectations such as happiness, pride, and full confidence in the

hybrid start-up, and negative anticipated emotion (NAE) was measured with negative expectations such as anger, shame, and sorrow from not starting a hybrid business. Perceived behavioral control (PBC) was measured by the starting point control, free time, and difficulty of the hybrid start-up. Prior knowledge (PK) was measured by having sufficient knowledge, diverse knowledge, and knowledge about specific procedures and systems to start a hybrid business. Hybrid start-up desire (HSD) was measured by the desire to start a business, the expectation of success, and the willingness to start a new business in the foreseeable future, and hybrid start-up intention (HSI) measured by the business start-up intention in the near future or before retirement, and the will to recommend the business of the hybrid type to my acquaintances around me.

The survey consisted of a total 30 measurement variables, 3 measurement variables per latent variable was measured on the Likert scale method (7-point), and the details are shown below in Table 1.

Table 1. Measurable definition of variables

Latent variables	Detailed measurement variables		Preceding studies
Intrinsic Motivation (IM)	IM1	I want to open a hybrid type start-up business because I want to revitalize my life	[6,18-31]
	IM2	I want to open a hybrid type start-up business because I want to feel a sense of accomplishment about what I do	
	IM3	I want to open a hybrid type start-up business because I want to check my business ability	
Extrinsic Motivation (EM)	EM1	I want to open a hybrid type start-up business because I don't want my acquaintances to think that I'm insignificant	
	EM2	I want to open a hybrid type start-up business because the future of hybrid start-up is promising	
	EM3	I want to open a hybrid type start-up business because my family income increases	
Start-up Attitude (SA)	SA1	It is useful to open a hybrid type start-up business	
	SA2	It is wise to open a hybrid type start-up business	
	SA3	It is necessary to open a hybrid type start-up business	

(Continued)

Table 1. Measurable definition of variables

Latent variables	Detailed measurement variables		Preceding studies
Subjective Norm (SN)	SN1	My acquaintances will approve me to open a hybrid type start-up business	[6,18-31]
	SN2	My acquaintances will understand why I want to open a hybrid type start-up business	
	SN3	My acquaintances will recommend me to open a hybrid type start-up business	
Positive Anticipated Emotion (PAE)	PAE1	I will be happy if I open a hybrid type start-up business	
	PAE2	I will be proud if I open a hybrid type start-up business	
	PAE3	I will be full of confidence if I open a hybrid type start-up business	
Negative Anticipated Emotion (NAE)	NAE1	I will be worried if I can't open a hybrid type start-up business	
	NAE2	I will be ashamed if I can't open a hybrid type start-up business	
	NAE3	I will be sad if I can't open a hybrid type start-up business	
Perceived Behavioral Control (PBC)	PBC1	I can open a hybrid type start-up business whenever I want	
	PBC2	I have plenty of time to open a hybrid type start-up business	
	PBC3	It is not hard to open a hybrid type start-up business	
Prior Knowledge (PK)	PK1	I have enough knowledge to open a hybrid type start-up business	
	PK2	I have a general knowledge about hybrid business	
	PK3	I know the specific process (system) of hybrid business	
Hybrid Start-up Desire (HSD)	HSD1	I hope to open a hybrid type start-up business in the near future	
	HSD2	I want to succeed through a hybrid type start-up business	
	HSD3	I am very passionate about opening a hybrid type start-up business	
Hybrid Start-up Intention (HSI)	HSI1	I will open a hybrid type start-up business if I have get a good chance in the future	
	HSI2	I will try to open a hybrid type start-up business before I retire	
	HSI3	I will strongly recommend a hybrid type start-up business to my acquaintances	

3.4 Sampling and Statistical Analysis Method

The samples required for this study were collected based on the judgment sampling methods for office workers between their 20s and 50s and working in South Korea. Throughout the period of June 13, 2020 to July 3, 2020, 130 samples were collected through the online Google questionnaire,

and 126 samples were confirmed, excluding 4 samples that were not applicable to office workers.

Under some condition [effect size $f^2=0.15$, α err prob=0.05, and power $(1-\beta$ err prob)=0.8, Maximum number of arrows for a particular endogenous variable receives=6] of the G*Power program, the minimum number of the sample size was calculated to be 98, and the number of our samples exceeded the minimum number by 126, so the samples used in this study are appropriate for statistical analysis[32-34].

We used a statistical analysis program called SmartPLS 3.0, which evaluated the measurement model and the structural model.

4. Results of Research and Analysis

4.1 Demographic Characteristics

Table 2 shows the demographic characteristics. Men and women each accounted for 74.6% and 25.4%, respectively, and those in their 40s accounted for about 71.4% of the survey participants. About 54.7% of the working period is more than 10 years and less than 19 years. About 80.2% of the survey participants responded that they are not preparing to open a hybrid type start-up business, and about 44.4% of the survey participants responded that they are willing to get consultation about opening a hybrid type start-up business.

Table 2. Demographic characteristics

Characteristics	Frequency	%	
Sex	Male	94	74.6
	Female	32	25.4
	Total	126	100.0
Age (years old)	20~39	22	17.5
	40~49	90	71.4
	50~59	14	11.1
	Total	126	100.0
Work period (years)	0~4	6	4.8
	5~9	13	10.3
	10~19	69	54.7
	20~29	33	26.2
	30~	5	4.0
	Total	126	100.0
Ready to start a hybrid start-up	Yes	25	19.8
	No	101	80.2
	Total	126	100.0
Willingness to get consultation for a hybrid start-up	Yes	56	44.4
	No	70	55.6
	Total	126	100.0

4.2 Reliability and Validity in the Measurement Model

4.2.1 Internal Consistency Reliability

Table 3 presents the internal consistency reliability of this study. As the Cronbach's α , Dijkstra-Henseler's rho_A (ρ_A) and Composite Reliability (CR) values are all above the acceptable standard (0.7), the internal consistency reliability was secured.

Table 3. Internal consistency reliability

Latent variables	Measured variables	Cronbach's α (≥ 0.70)	rho_A(ρ_A) (≥ 0.70)	CR (≥ 0.70)
IM	IM1	0.936	0.949	0.959
	IM2			
	IM3			
EM	EM1	0.722	0.742	0.844
	EM2			
	EM3			
SA	SA1	0.928	0.929	0.954
	SA2			
	SA3			
SN	SN1	0.929	0.934	0.955
	SN2			
	SN3			
PAE	PAE1	0.907	0.907	0.942
	PAE2			
	PAE3			
NAE	NAE1	0.875	0.903	0.921
	NAE2			
	NAE3			
PBC	PBC1	0.816	0.838	0.889
	PBC2			
	PBC3			
PK	PK1	0.976	0.977	0.984
	PK2			
	PK3			
HSD	HSD1	0.913	0.914	0.945
	HSD2			
	HSD3			
HSI	HSI1	0.894	0.897	0.934
	HSI2			
	HSI3			

4.2.2 Convergent and Discriminant Validity

The convergent validity can be presented in Table 4. All outer loading values of the measured variables are above 0.7, and both the indicator reliability and the Average Variance Extracted (AVE) values of the measured variables are above 0.5, so the convergent validity of the measured variables was secured.

Table 4. Convergent validity

Latent variables	Measured variables	Outer loading (≥ 0.70)	Indicator reliability (≥ 0.50)	AVE (≥ 0.50)
IM	IM1	0.962	0.925	0.887
	IM2	0.974	0.949	
	IM3	0.887	0.787	
EM	EM1	0.718	0.516	0.644
	EM2	0.887	0.787	
	EM3	0.794	0.630	
SA	SA1	0.934	0.872	0.874
	SA2	0.935	0.874	
	SA3	0.936	0.876	
SN	SN1	0.938	0.880	0.875
	SN2	0.936	0.876	
	SN3	0.932	0.869	
PAE	PAE1	0.895	0.801	0.843
	PAE2	0.923	0.852	
	PAE3	0.936	0.876	
NAE	NAE1	0.874	0.764	0.796
	NAE2	0.885	0.783	
	NAE3	0.918	0.843	
PBC	PBC1	0.824	0.679	0.728
	PBC2	0.870	0.757	
	PBC3	0.865	0.748	
PK	PK1	0.981	0.962	0.954
	PK2	0.981	0.962	
	PK3	0.968	0.937	
HSD	HSD1	0.919	0.845	0.851
	HSD2	0.913	0.834	
	HSD3	0.935	0.874	
HSI	HSI1	0.889	0.790	0.825
	HSI2	0.923	0.852	
	HSI3	0.913	0.834	

The discriminant validity evaluated by Fornell-Larcker criterion is presented in Table 5 and the AVE square root values of each latent variables are greater than the highest correlation values between the two latent variables. Accordingly, the discriminant validity of the latent variables was obtained.

Table 5. Discriminant validity

	EM	HSD	HSI	IM	NAE	PAE	PBC	PK	SA	SN
EM	0.803									
HSD	0.665	0.923								
HSI	0.596	0.860	0.908							
IM	0.682	0.776	0.743	0.942						
NAE	0.494	0.464	0.417	0.474	0.892					
PAE	0.507	0.692	0.645	0.621	0.276	0.918				
PBC	0.360	0.487	0.450	0.468	0.420	0.439	0.853			
PK	0.430	0.464	0.478	0.494	0.422	0.288	0.565	0.977		
SA	0.492	0.745	0.684	0.607	0.355	0.742	0.458	0.320	0.935	
SN	0.461	0.574	0.588	0.564	0.422	0.552	0.499	0.382	0.609	0.935

4.3 Hypothesis Testing in the Structural Model

The hypothesis testing is performed through the significance and suitability of the path coefficients. Once this model is identified as a suitable model, hypothesis testing can be performed.

4.3.1 Structural Model Evaluation

The structural model evaluation by SmartPLS is based on the separate evaluation criteria, such as multicollinearity, determination coefficient (R^2), effect size (f^2), predictive relevance (Q^2), and significance and suitability of path coefficients in line with how well the exogenous latent variables of the structural model predict the endogenous latent variables.

In Table 6, the collinearity assessment of the latent variables are presented. The inner VIF values were all less than 5, indicating that there was no multicollinearity.

Table 6. Collinearity assessment (Inner VIF values)

	EM	HSD	HSI	IM	NAE	PAE	PBC	PK	SA	SN
EM									1.869	1.869
HSD			1.275							
HSI										
IM									1.869	1.869
NAE		1.390								
PAE		2.347								
PBC		1.825								
PK		1.574	1.275							
SA		2.608								
SN		1.889								

Table 7 shows that among the endogenous latent variables, the adjusted R^2 of HSD and HSI is a predictive power of 0.652 and 0.726 respectively, and the adjusted R^2 of SA and SN is calculated respectively at 0.370 and 0.318.

Table 7. Determination coefficient

Endogenous latent variable	R^2	Adjusted R^2
HSD	0.669	0.652
HSI	0.731	0.726
SA	0.380	0.370
SN	0.329	0.318

Table 8 shows the results of the effect size (f^2). The effect size value of SA, which contributes to R^2 of the endogenous latent variable HSD, is 0.187, contributing more than 0.15 (moderate value), and the effect size values of NAE and PAE contribute more than 0.02 (small value) with 0.051, 0.099 respectively. However, it was assessed that the effect size value of SN is 0.004, which is very small to contribute to R^2 of HSD, and the effect size value of PBC is 0.000, which does not contribute to R^2 of HSD at all.

Table 8. Effect size

	EM	HSD	HSI	IM	NAE	PAE	PBC	PK	SA	SN
EM									0.018	0.016
HSD			1.866							
HSI										
IM									0.223	0.173
NAE		0.051								
PAE		0.099								
PBC		0.000								
PK		0.060	0.033							
SA		0.187								
SN		0.004								

Table 9 shows that all the Q^2 values of the endogenous latent variables (HSD, HSI, SA, SN) are positive numbers, so the structural model of this study are evaluated as suitable for hypothesis verification.

Table 9. Predictive relevance

Endogenous latent variable	Q^2
HSD	0.557
HSI	0.591
SA	0.320
SN	0.273

4.3.2 Hypothesis Verification

The significance and suitability of the path coefficients are presented in Table 10. H3, H4, H6, and H9 were rejected because the t-values and p-values of the path coefficients associated with them were not significant. However, the remaining hypotheses were displayed as significant, so all the

other hypotheses were accepted.

Table 10. Results of hypothesis verification

Path of Hypothesis	Path coefficient	t value	p value	Results	
H1	IM → SA	0.508	5.728	0.000	Accept
H2	IM → SN	0.466	4.724	0.000	Accept
H3	EM → SA	0.145	1.824	0.068	Reject
H4	EM → SN	0.144	1.362	0.173	Reject
H5	SA → HSD	0.402	4.723	0.000	Accept
H6	SN → HSD	0.047	0.688	0.492	Reject
H7	PAE → HSD	0.278	3.116	0.002	Accept
H8	NAE → HSD	0.153	2.828	0.005	Accept
H9	PBC → HSD	-0.008	0.093	0.926	Reject
H10	PK → HSD	0.177	2.595	0.009	Accept
H11	PK → HSI	0.107	1.995	0.046	Accept
H12	HSD → HSI	0.800	18.319	0.000	Accept

It was shown that the intrinsic motivation (IM) had a significant positive impact on the statistical significance verification on both the start-up attitude (SA) and the subjective norm (SN) in MGB, but the extrinsic motivation (EM) didn't have a significant positive impact on the statistical significance verification on both the start-up attitude (SA) and the subjective norm (SN).

It was also displayed that the prior knowledge (PK) had a positive impact on the statistical significance verification on both the hybrid start-up desire (HSD) and the hybrid start-up intention (HSI).

The start-up attitude (SA), positive anticipated emotion (PAE), negative anticipated emotion (NAE) of workers with hybrid start-up intention had a significant positive impact on the hybrid start-up desire (HSD), but the subjective norm (SN) and the perceived behavioral control (PBC) did not have a meaningful impact.

The hybrid start-up desire (HSD) had a statistically significant positive impact on the hybrid start-up intention (HSI), and $\beta=0.800$ indicated that it was the most important factor for hybrid start-up intention.

The results about the verification of the 12 hypotheses presented in Figure 2 show that 8

hypotheses (H1, H2, H5, H7, H8, H10-H12) were accepted and 4 hypotheses (H3, H4, H6, H9) were rejected.

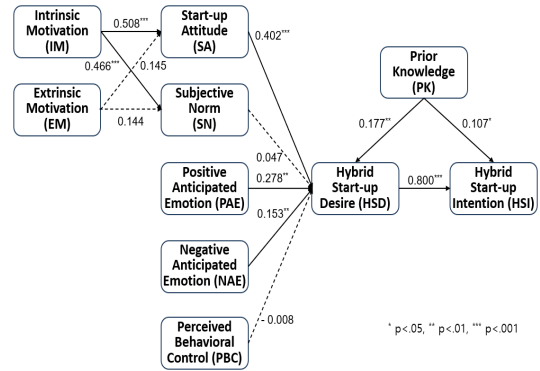


Fig. 2. Path coefficient analysis of research model

The hypothesis verification results of this study are discussed in the following.

First, this research, in line with previous research results, displayed a statistically positive significant impact on the hybrid start-up desire, positive and negative anticipated emotion in MGB, while subjective norm and perceived behavioral control did not show any significant positive impact on the statistical significance verification on the hybrid start-up desire. Second, it was displayed that intrinsic motivation had a significant positive impact on the statistical significance verification on the hybrid start-up attitude and subjective norm. It is useful, wise, necessary, and more likely for office workers to start hybrid enterprises if there is an increase in their willingness to realize their goals, and people around them are expected to respond positively. Since the hybrid type start-up carries high risks, the intrinsic motivation of the office workers to take risks and achieve the goal of starting a hybrid type business are important in terms of its impact on the hybrid start-up attitude[35]. Third, extrinsic motivation did not have a significant positive impact on the statistical significance verification of the hybrid start-up

attitude and subjective norm. It means that there is no need for the impact of external environmental factors such as compensation from opening a hybrid type start-up business or any status from the start-up. This is because they already gain income through work life and established their status within the workplace. Finally, the prior knowledge had a statistically positive significant impact on the hybrid start-up desire to start a hybrid enterprise, and the hybrid start-up intention. Office workers face limits in their accessibility to gain knowledge about start-ups due to their company work, and if they can gain prior knowledge of start-ups, then it will activate the hybrid start-up.

5. Conclusion

5.1 Summary and Implications

This research is an extension of the research on hybrid type start-up founders using the MGB as previously studied. While the attitudes in precedent studies had the highest significant positive impact on the statistical significance verification of the hybrid start-up intention, and the subjective norm did not have a significant positive impact on the statistical significance verification of the hybrid start-up intention. In this study, the intrinsic motivation and extrinsic motivation presented in the self-determination theory were added as the antecedent variables to further strengthen the hybrid start-up attitude and to assist the subjective norm to leave a significant positive impact on the statistical significance verification of the hybrid start-up intention. In addition, prior knowledge was added as it was expected that people's desire to open a hybrid type start-up business and the intention to open a start-up business of the hybrid type would've increased if they had prior knowledge as salaried workers.

The following is the theoretical implications of this study based on the results of empirical analysis.

First, we confirm that adding additional antecedents (self-determination motivation, prior knowledge) to existing research models does not change the influence of antecedent variables on hybrid start-up desire in MGB. It was displayed that the subjective norm and perceived behavioral control did not have any meaningful effects. Second, in general start-up intentions, intrinsic motivation had a significant impact on the start-up attitudes and subjective norms, and extrinsic motivation had a significant impact on subjective norms, but this study involved workers with hybrid start-up intentions so it was displayed that only intrinsic motivation has a significant impact on the start-up attitudes and subjective norms. It is considered that the influence of self-determination motivation varies depending on the field of the study. Third, prior knowledge had a significant positive impact on the hybrid start-up intention, and it was confirmed that it had a greater influence on hybrid start-up desire rather than hybrid start-up intention. It is meaningful that a new antecedent variable has been found in the behavior model for hybrid start-up desire.

The practical implications of this study are that it is necessary to stimulate intrinsic motivation and provide prior knowledge in activating hybrid start-up intention as summarized below.

First, it is important to start a business as an office worker because regular income is fixed as an office worker, but it is necessary to consider the unintentional factors such as money, time, and opportunities, as well as the subjective norm on whether to support or be against one's actions. Second, starting a business as an office worker depends on an inherent desire to realize the set goals. It means more than just converting vehicle fuel to hybrid, as office workers should also be hybridized to prepare for the rapidly changing future era. In this study, we demonstrated the needs of hybrid activation through intrinsic motivation.

Third, it is expected that the hybrid start-up will be activated if various knowledge such as hybrid start-up type (for example, one-person creative enterprise, shared office utilization project, YouTuber, VJ, information provider, etc.), and hybrid start-up procedure are provided in advance while working as an office worker. Fourth, it is suggested in this study that to promote hybrid start-ups, various policy systems and programs should be prepared at a government level to motivate workers and provide hybrid start-up knowledge. It is necessary to ease the prohibition on concurrent employment of office workers, establish new financial supports such as low-finance, credit guarantee, and provide non-monetary supports such as hybrid start-up consulting and hybrid start-up office space for hybrid start-ups.

In preparation for the new start-up environment, such as a decrease in the working population due to the recent increase in the number of non-married, increased job insecurity due to the expansion of labor flexibility, and increased opportunity costs due to the failure of the start-up, a new type of start-up, there are needs of a new type of hybrid start-up in the future. Therefore, this research stands out because there was an increase in the effectiveness of existing research by discovering the intrinsic motivation, one of the psychological factors that strengthens the start-up attitude, and checking the effectiveness of pre-start-up knowledge, which can reinforce the desire and the intention to open a start-up business of the hybrid type.

5.2 Limitation and Future Directions

By utilizing the stereotyped model of behavior model, this research seeks to present the research directions for practical hybrid start-up consulting in the future by supplementing the following limitations.

First, it is questionable whether the changes in the attitude of hybrid start-up through intrinsic motivation will make it possible to revitalize the hybrid start-up in reality. In particular, research was not performed about areas (e.g., the delivery industry, online education business, etc.) where hybrid start-ups can be activated despite the external conditions of the COVID-19 that caused a global economic recession since early 2020. Second, it is also necessary to study whether the hybrid start-up can be activated only when it is linked to work as a salaried worker and the hybrid start-up field. Third, it is necessary to show the directivity towards successful hybrid start-up through research on success and failure cases of hybrid start-up. Fourth, it failed to suggest whether the prior knowledge needed to start hybrid enterprise is different from the existing general start-up. Fifth, it is also necessary to study whether the government's policy supports and programs found in the implications of this study can encourage hybrid start-ups. Finally, there is no unique methodology tool available for hybrid start-up consulting and there is no business model that stands out from general start-ups, so follow-up research is needed.

In the future, it is expected that the demand of office workers for consulting will increase in order to create various hybrid start-ups that can cope with the external environment in a timely manner, such as COVID-19, labor force decrease in the fourth industrial era rather than consulting companies such as large, mid-sized, and small and medium-sized enterprises.

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