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The impact of entrepreneur's age on serial entrepreneurship speed: the moderating effect of positive gains after failure

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Abstract— This study analyzes the impact of entrepreneurs' age and positive outcomes after failure on the speed of serial entrepreneurship. Generally, older entrepreneurs tend to pursue serial ventures more rapidly; however, a clear explanation for this phenomenon is still lacking. This research identifies age and positive gains after failure as key variables and empirically analyzes their effects on the speed of serial entrepreneurship, drawing on prior studies. The results indicate that age alone does not lead to faster serial entrepreneurship. Instead, older entrepreneurs who experience higher positive gains after failure are more likely to re-enter the entrepreneurial space quickly. This suggests an interaction between entrepreneurs' age and positive gains after failure that positively influences entrepreneurial success, underscoring the need for tailored training programs for entrepreneurs.

Keywords—Serial entrepreneurship, Entrepreneur`s age, Serial entrepreneurship speed, Positive gains after failure

1. INTRODUCTION

It has been pointed out that long-term support measures are needed to activate the domestic serial entrepreneurship ecosystem and improve the survival rates of businesses. According to a report published by the Small and Medium Business Administration on October 26, 2023, two out of three newly established businesses in South Korea fail within five years, which is 11.6 percentage points higher than the OECD average of 54.6%. Consequently, the report emphasizes

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the need to strengthen the support system for serial entrepreneurship to enhance the survival rate of domestic startups. According to McGrath [1], entrepreneurship is a process fraught with uncertainty and risk, which can lead to anxiety for entrepreneurs. However, it can also be argued that entrepreneurs can leverage failure as a valuable learning experience. Through failure, they can identify their mistakes and better prepare for future success. The entrepreneurial ecosystem should allow for failure and promote learning throughout this process. Serial entrepreneurship signifies the pursuit of new challenges and opportunities, and research indicates that serial entrepreneurs tend to start their initial businesses at a younger age compared to other entrepreneurs. However, there is a lack of research on the relationship between the characteristics and behaviors of serial entrepreneurs, presenting new opportunities for investigation.

The main objectives of this study are as follows: First, to thoroughly review prior research related to the age of entrepreneurs, the speed of serial entrepreneurship, and positive gains after failure, and to establish a research model and hypotheses based on this review. Second, to verify the impact of entrepreneurs' age on the speed of serial entrepreneurship and examine the differences in the effects of positive gains after failure on the relationship between entrepreneurs' age and the speed of serial entrepreneurship. Third, to provide useful implications for entrepreneurs and practitioners in the field of entrepreneurship based on the analytical results obtained.

2. THEORETICAL BACKGROUND

2.1. THE CONCEPT OF SERIAL ENTREPRENEURSHIP

According to Ucbasaran et al.[2], serial entrepreneurship plays a decisive role in entrepreneurial intent and often requires significant investments of time, money, and effort. Additionally, Yoon Nam-soo [3] emphasizes the importance of serial entrepreneurship, stating that strong entrepreneurial intention is essential in this process. This suggests that serial entrepreneurship is not merely about giving up after a single failure; rather, it involves embarking on new challenges based on the lessons learned from those failures to achieve success.

Serial entrepreneurship is distinct from portfolio entrepreneurship. As posited by Westhead and Wright [4], it is founded on the idea that some entrepreneurs repeatedly start businesses and achieve success. Baron and Ensley [5] explain that this characteristic enables serial entrepreneurs to continuously improve their skills and strategies, providing opportunities for better outcomes in subsequent ventures.

Serial entrepreneurs act as agents who facilitate and build new ventures, playing a crucial role in driving innovation and growth in both the economy and society. They take on various risks while simultaneously becoming significant beneficiaries. Through this process, serial entrepreneurs optimize diverse production means and establish viable re-systems. The serial entrepreneurship process is a vital economic activity that significantly impacts economic growth and development. By actively utilizing innovative mechanisms, serial entrepreneurs combine various production means and provide new products or services to the market, thereby creating economic value. This role promotes economic activity, generates new jobs, and triggers changes

in existing industries. Thus, serial entrepreneurs serve as essential agents in the economy and society by merging diverse production means through innovative approaches and offering a variety of goods and services [6].

Parker [7] concluded from his investigation of long-term entrepreneurial activities that successful transitions between ventures generate profits, providing insight into the positive impact of serial entrepreneurship on performance. Furthermore, Sarasvathy et al. [8] argue that failed businesses offer important learning opportunities for serial entrepreneurs, suggesting that the lessons learned from failures can be as significant as those from successful ventures.

2.2. ENTREPRENEUR`S AGE

In research on entrepreneurship, age is closely related to entrepreneurial intent, motivation, and behavior [9]. Specifically, the age of serial entrepreneurs is associated with favorable attitudes toward serial entrepreneurship. Studies indicate that as age increases, so do tendencies toward risk aversion [10]. This shift in priorities can affect an entrepreneur's willingness to create economic or non-economic social value, depending on their life stage.

Younger individuals are more likely to transition to wage employment after a startup failure, as they still have available job opportunities [11]. Consequently, the inclination toward serial entrepreneurship among younger age groups tends to be relatively low. In contrast, middle-aged individuals are more likely to turn failures into opportunities for serial entrepreneurship. Despite facing challenges related to significant career changes, they often proactively seek new challenges, drawing on their accumulated experience and expertise. Such experiences can be critical for finding solutions through trial and error [12]. Thus, higher rates of serial entrepreneurship after failure are expected in this age group.

Research by Jang Young-mi [13] suggests that failures in necessity-driven entrepreneurship can negatively impact older entrepreneurs' likelihood of pursuing serial ventures. For older individuals, these ventures are often highly competitive, and insufficient preparation increases the risk of failure. Additionally, securing funding for serial entrepreneurship can be challenging post-failure, and older entrepreneurs may exhibit a diminished willingness to learn new skills, viewing serial entrepreneurship as a greater risk. Lee Jong-seon [14] also noted that older failed entrepreneurs tend to show lower tendencies toward serial entrepreneurship, indicating inconsistencies in research findings regarding age and serial entrepreneurship.

The age of entrepreneurs is a critical variable in understanding how their behaviors, attitudes, and business intentions are influenced. Age encompasses not only a numerical value but also diverse experiences, skills, and perceptions that evolve over time [15]. Older entrepreneurs often possess rich experiences and resources that aid in decision-making and problem-solving. Conversely, younger entrepreneurs may demonstrate higher risk tolerance and adaptability to technological changes, fostering the development of innovative ideas and business models [16].

In summary, the age of entrepreneurs signifies more than just a number; it is an important variable influencing business activities through their experiences and characteristics. This study categorizes entrepreneurs into five distinct age groups for a more detailed examination: under 18, 18-29, 30-44, 45-60, and over 60. This classification aims to enhance understanding of the unique challenges faced by entrepreneurs at different life stages, allowing for more accurate assessments of how age impacts business behavior and performance.

2.3. SERIAL ENTREPRENEURSHIP SPEED

The serial entrepreneurship speed refers to the time it takes for an entrepreneur to exit a previously established business or to recover from failure and start a new venture. This process often involves identifying new opportunities based on prior experiences and embarking on new challenges. The serial entrepreneurship speed includes not only addressing previous failures but also the time taken after exiting (selling or transferring) the prior business or terminating it in another manner. This phase encompasses discovering new opportunities or experimenting with different business models.

Previous research has confirmed that serial entrepreneurship speed is related to entrepreneurial intent, indicating that higher entrepreneurial intent correlates with faster serial entrepreneurship [17]. This suggests that an entrepreneur's desire to quickly pursue new opportunities is informed by prior experiences.

Many researchers consider new entrepreneurial activities to be socially and economically significant [18] and have shown considerable interest in serial entrepreneurship as a key factor in entrepreneurial activities [19]. Serial entrepreneurship speed is closely linked to entrepreneurial intent, with higher levels of intent leading to faster entrepreneurial pursuits [17]. Burton et al. [20] emphasized the importance of understanding the causes and consequences of previous failure experiences to analyze the trajectories of entrepreneurs in new economies. However, research specifically on serial entrepreneurship speed remains limited, with existing studies primarily focusing on the speed of initial startups or the time required to create new ventures [21].

According to human capital theory [22], individuals with extensive prior entrepreneurial experience are better equipped to execute new ventures more swiftly. Prior entrepreneurial experience positively influences future entrepreneurial behaviors and the speed of new venture creation [23]. This experience equips entrepreneurs with applicable knowledge, enabling them to gather and process information more efficiently, thereby enhancing the speed of new ventures [21].

2.4. POSITIVE GAINS AFTER FAILURE

Entrepreneurial failure can be interpreted in various ways and has been analyzed from different perspectives by researchers such as Shepherd and Haynie [24]. Ucbasaran et al. [25] define entrepreneurial failure as the cessation of business operations when the entrepreneur fails to meet the minimum economic viability they had established. Amankwah-Amoah et al. [26] propose four distinct stages that entrepreneurs typically go through after experiencing failure: 1.Grief and Despair Stage: In this initial stage, entrepreneurs confront the sorrow and despair resulting from failure. The shock of the experience leads to self-doubt and a significant loss of confidence. 2.Transition Stage: Here, entrepreneurs begin to accept their failure and seek to overcome it, moving toward a new beginning. This involves reflecting on past experiences and learning from them. 3.Formation Stage: In this stage, entrepreneurs explore new opportunities and develop new business models, preparing to establish and realize a new vision. 4.Legacy Stage: The final stage involves successfully launching and stabilizing a new venture. Entrepreneurs focus on achieving

success and building their new business.

These four stages illustrate how entrepreneurs can overcome failure and seek new opportunities, providing essential guidance for successful serial entrepreneurship. The authors conclude that experiences of failure can influence subsequent entrepreneurial behaviors. However, while hypotheses have been suggested regarding how failure experiences connect to entrepreneurs' ability to start and grow new ventures [25], there remains a lack of clear explanations about how the lessons learned from failure mediate the relationship between failure experiences and new venture outcomes.

Failure can serve as a valuable learning opportunity for entrepreneurs with failed businesses [1], but it can also be an emotionally and psychologically challenging experience that hinders learning [27]. Even when learning occurs, entrepreneurs must effectively share and disseminate the new knowledge gained from their failures. Through this sharing, they can leverage lessons learned to discover new opportunities and successfully engage in serial entrepreneurship [28]. However, this learning process can come at a high cost, resulting in increased psychological, social, and financial burdens for entrepreneurs. It involves not just accumulating knowledge but actively using it to identify and realize new opportunities, playing a crucial role in the successful serial entrepreneurship and ongoing competitive advantage of entrepreneurs.

Corbett [29] presents a significant perspective on learning from failure, arguing that it is not merely about knowledge accumulation; rather, it involves developing the cognitive ability to utilize past failure experiences effectively. Entrepreneurs can develop new perspectives and approaches based on insights gained from failure, applying these to future opportunities to achieve success. This view emphasizes the growth and development entrepreneurs undergo through learning from failure, suggesting that failure should not be viewed solely as a negative experience but rather as an opportunity for learning and growth. This aligns with theoretical frameworks that recognize learning as a capacity for change and development. Thus, learning from failure becomes an essential component in enhancing entrepreneurs' abilities to recognize and exploit new opportunities.

3. RESEARCH MODEL AND HYPOTHESIS

3.1. RESEARCH MODEL

In this study, the entrepreneur's age is established as the independent variable, while positive gains after failure are treated as the moderating variable. The serial entrepreneurship speed is selected as the dependent variable. To test the hypotheses, regression analysis and moderated moderation effect analysis will be conducted. The research model for this study is as follows:

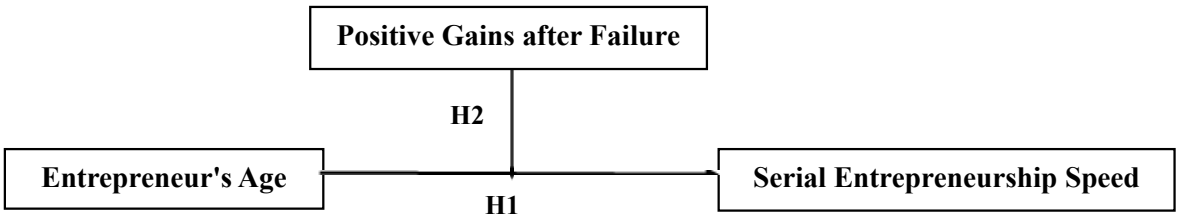

Fig. 1 Research Model

3.2. HYPOTHESIS

Based on the research model, this study aims to establish the following hypotheses for testing. First, we will examine the relationship between the entrepreneur's age and serial entrepreneurship speed. Second, we will investigate the moderating effect of positive gains after failure on the relationship between the entrepreneur's age and serial entrepreneurship speed. In total, two hypotheses have been formulated. The background for establishing these hypotheses and the specific hypotheses are as follows:

3.2.1 ENTREPRENEUR'S AGE AND SERIAL ENTREPRENEURSHIP SPEED

This study aims to analyze the impact of entrepreneurs' experiences and age on the serial entrepreneurship process. Research indicates that as age increases, individuals tend to make fewer significant career changes [30]. Younger individuals often lack the development of professional networks and relevant knowledge, leading to lower costs associated with transitioning to new careers [30]. Consequently, even if they do not choose serial entrepreneurship, they face less financial burden and can more easily begin new careers through employment after a startup failure.

In contrast, studies suggest that middle-aged and older individuals find it increasingly difficult to gain employment as wage workers as they age. Younger individuals, who often lack social experience, may choose employment to build social skills and better prepare for future entrepreneurial endeavors. Therefore, it is expected that younger entrepreneurs will have a lower tendency toward serial entrepreneurship after a startup failure.

For middle-aged individuals, the tendency for startup failure to lead to serial entrepreneurship may differ. Middle-aged entrepreneurs may face constraints in choosing broader professional categories, and given their age and potential career interruptions, they might struggle to find satisfying job opportunities [31]. However, middle-aged individuals can actively engage in new challenges, and past failure experiences may help them identify better solutions through trial and error [32]. They may gain confidence in their ability to learn from failures and improve past decisions, leading to greater interest in serial entrepreneurship [33].

For older entrepreneurs, serial entrepreneurship may be more challenging post-failure. Older individuals often require a steady income, but barriers to re-employment increase, suggesting that the higher the age of failed entrepreneurs, the more negative the impact on serial entrepreneurship. This trend is particularly evident in countries lacking economic stability, where many older individuals tend to choose subsistence entrepreneurship [34]. Additionally, as age increases, the willingness to take on additional risks may decrease, along with the desire to learn new things, resulting in lower potential for serial entrepreneurship [35].

Therefore, preferences for entrepreneurship may decline with age, leading individuals to feel they lack sufficient time and energy to seize business opportunities or pursue serial entrepreneurship [17].

Hypothesis 1: As the entrepreneur's age increases, the speed of serial entrepreneurship will decrease.

3.2.2 POSITIVE GAINS AFTER FAILURE AND SERIAL ENTREPRENEURSHIP SPEED

According to Shepherd [27], failure is an important opportunity for entrepreneurs to gain valuable lessons. Cope [36] emphasizes that learning from failure can take on abstract and generalized forms, enabling entrepreneurs to respond effectively to challenges in new business situations. Sarasvathy and Menon [37] argue that experiences gained through failure serve as essential tools for understanding "what works and what doesn't." Politis [38] describes failure as a "stepping stone" for learning to find new opportunities and improve business processes. Entrepreneurs derive abstract and generalized learning from their failure experiences, which can help develop cognitive early warning systems and facilitate corrective actions in subsequent ventures [39]. These perspectives underscore the importance of continuous learning and growth from failure. Positive gains after failure can assist in quickly identifying new opportunities and taking appropriate actions. Effectively applying these positive gains can enhance the response speed to issues arising in serial entrepreneurship. Thus, it is expected that a high level of positive gains after failure will lead to faster serial entrepreneurship speed for the entrepreneur.

Depending on the entrepreneur's age, recovery from failure and the acquisition of high-level learning capabilities are considered part of a unique learning process [40]. Research indicates that older entrepreneurs tend to possess rich experiences that facilitate deeper learning. They are expected to gain more lessons from failure and be more skilled at applying these lessons to new opportunities. In this regard, Hajizadeh and Zali [41] found that the ability of older entrepreneurs to learn from past business experiences plays a critical role in successfully starting and growing new businesses. Consequently, it is anticipated that older entrepreneurs will have a relatively higher capacity to connect their experiences of business failure with the outcomes of new ventures through learning from failure, advancing existing research on business failures. This underscores the notion that experiences of startup failures and subsequent learning processes can play a decisive role in the success of new businesses.

Hypothesis 2: Positive gains after failure will strengthen the relationship between the entrepreneur's age and serial entrepreneurship speed. Among individuals of the same age, those with high positive gains after failure will exhibit faster serial entrepreneurship speed than those with lower gains.

3.3. VARIABLE MEASUREMENT

The operational definitions of the variables used in the empirical analysis are presented in Table 1.

Table 1. Survey sample description

Variable Type	Measurement Variable	Operational Definition	Source
Dependent Variable	Serial Entrepreneurship Speed	How long did it take to start a new venture after the previous failure? (1=Over 2 years, 2=1-2 years, 3=6 months-1 year, 4=Under 6 months)	Kautonen et al., 2015
Independent Variable	Entrepreneur's Age	Age group (1=Under 18, 2=18-29, 3=30-44, 4=45-60, 5=Over 60)	Baù et al., 2017
Moderator Variable	Positive Gains After Failure	● Failure in entrepreneurship provided valuable lessons that could not be learned otherwise. ● The experience of failure helped build resilience and perseverance. ● I gained insights into areas like financial management, market research, and leadership.	Cope, 2005
Control Variables	Economic Family Support	● I received financial support from my family.	Rau, 2014
	Psychological Family Support	● My family provides the moral support necessary for my business success. ● I receive the emotional help and support I need from my family.	
	Self-Efficacy	● How confident are you in successfully identifying new business opportunities? ● How confident are you in successfully creating new products? ● How confident are you in thinking creatively? ● How confident are you in successfully commercializing ideas or new developments?	Zhao et al., 2005
	Causes of Failure	● After my entrepreneurial failure, I thought my personality lacked motivation for entrepreneurship. ● I thought my personality was unsuitable for entrepreneurship after my failure.	Piadehbasm and Higgins, 2016
	Operating Period	How long have you officially operated your current business? (1=Less than 1 year, 2=1-2 years, 3=2-3 years, 4=Over 3 years)	

3.4. ANALYSIS METHOD

In accordance with the objectives of this study, we aimed to: 1) examine whether the entrepreneur's age affects serial entrepreneurship speed, and 2) verify the moderating effect of positive gains after failure on the relationship between the entrepreneur's age and serial entrepreneurship speed.

The survey data collected for this study were coded and analyzed using SPSS 26.0. To assess the moderating effect of positive gains after failure in the relationship between the entrepreneur's age and serial entrepreneurship speed, we utilized Model 1 of the PROCESS macro 4.1. In this analysis, the entrepreneur's age was treated as the independent variable, serial entrepreneurship speed as the dependent variable, and positive gains after failure as the moderator. Control variables included economic family support, psychological family support, self-efficacy, causes of failure, and operating period.

4. ANALYSIS OF RESEARCH RESULTS

4.1 DATA COLLECTION AND RESEARCH SAMPLE

A survey was conducted among entrepreneurs who have experienced business failure and are currently engaged in serial entrepreneurship. The survey included a total of 109 participants, all of whom are current entrepreneurs from various regions in the United States. The data collection took place over one week in September 2023 using the Survey Monkey platform.

Table 2. Demographic Characteristics

Category		Freq	%	Category		Freq	%
Gender	Male	68	62.4%	Experience	Yes	109	100%
	Female	41	37.6%		No	0	0.0%
Entrepreneur's Age	18-29 years	24	22.0%	Current Startup Duration	Less than 1 year	13	11.0%
	30-44 years	38	34.9%		1~2 years	34	31.2%
	45-60 years	39	35.8%		2~3 years	32	29.4%
	60 years and older	8	7.3%		More than 3 years	31	28.4%
Entrepreneurship Experience Level	2nd time	61	56.0%	Education	High School	11	9.2%
					Technical	7	6.4%
	3rd time	31	28.4%		College	14	12.8%
	4th time	11	10.1%		Bachelor	37	33.9%
	5 or more	6	5.5%		Master	31	28.4%
					Doctorate	10	9.2%

4.2 VARIABLE MEASUREMENT

4.2.1. DESCRIPTIVE STATISTICS

The results obtained from the sample data indicate that, in the analysis of serial entrepreneurship speed among the 109 respondents, the dependent variable—serial entrepreneurship speed-has a mean of 2.513 (standard deviation SD = 1.005). This suggests that, on average, it takes about one year for re-entrepreneurship. The independent variable, entrepreneur's age, has a mean of 3.284 (SD = 0.893), indicating a tendency for entrepreneurs to be predominantly over the age of 40. Further examination of the correlation between serial entrepreneurship speed and age would be insightful. The moderating variable, positive gains after failure, has a mean of 5.473 (SD = 1.386), suggesting that respondents generally experience positive outcomes after failure during their re-entrepreneurial efforts.

Table 3. Descriptive Statistics

Variable		N	Mean	S.D.	Skewness	Kurtosis
Dependent	Serial Entrepreneurship Speed	109	2.513	1.005	-.011	-1.059
Independent	Entrepreneur's Age	109	3.284	.893	.039	-.855
Moderator	Positive Gains After Failure	109	5.473	1.386	-1.067	.917
Control Variable	Economic Family Support	109	3.858	2.405	.040	-1.588
	Psychological Family Support	109	5.663	1.281	-.788	-.103
	Self-efficacy	109	5.420	1.294	-.569	-.586
	Cause of Failure	109	4.823	1.518	-.155	-.537
	Duration of Operation	109	2.752	.992	-.177	-1.072

4.2.2. RELIABILITY ANALYSIS AND EXPLORATORY FACTOR ANALYSIS

This study utilized Cronbach's Alpha coefficient to estimate the internal consistency among the items. The results indicated that the reliability coefficients for all measured variables were above 0.5, suggesting high internal consistency among the items. For the three items related to positive gains after failure in the context of serial entrepreneurship speed, the Cronbach's Alpha value was found to be .845, indicating that this variable serves as a stable and reliable measurement tool.

Since the entrepreneur's age and speed of serial entrepreneurship were measured on a nominal scale, no reliability analysis was conducted for these variables. This means that the internal consistency or stability of the measurement tools was not evaluated; however, it suggests that each variable meets the validity assessment criteria and adequately reflects their operational definitions as measurement tools.

The eigenvalues indicate the importance of each variable concerning the factors identified in the exploratory factor analysis. As shown in Table 4, the pattern and distribution of all factor loadings were found to be appropriate.

Table 4. Exploratory Factor Analysis

	1	Commonality Values
Positive Gains After Failure 1	.900	.810
Positive Gains After Failure 2	.847	.718
Positive Gains After Failure 3	.895	.802
Total	2.329	
% Variance	77.629	
Cumulative %	77.629	
KMO (Kaiser-Meyer-Olkin) Sample Adequacy: .720		
Bartlett's Test of Sphericity: $\chi^2 = 147.251$ (df = 3, $p < .000$)		

Extraction Method: Principal Axis Factoring
Rotation Method: Varimax with Kaiser Normalization

4.2.3. CORRELATION ANALYSIS

In this study, Pearson's correlation analysis was employed to examine the relationships between the main variables-entrepreneur's age, positive gains after failure, and serial entrepreneurship speed-while controlling for economic family support, psychological family support, self-efficacy, causes of failure, and operational duration. The results of the correlation analysis are presented in Table 5.

Table 5. Correlation Analysis

Variable	1	2	3	4	5	6	7	8
Serial Entrepreneurship Speed	1							
Entrepreneur's Age	·073	1						
Positive Gains After Failure	-·057	.239*	1					
Economic Family Support	-.226*	-.030	·132	1				
Psychological Family Support	-.177	.248**	.554**	·099	1			
Self-efficacy	.005	.129	.594**	.254**	·512**	1		
Cause of Failure	-.257*	.045	.323**	.613**	.443**	.446**	1	
Duration of Operation	-.196*	·132	.259**	-.042	-·012	.116	-.115	1

*$p<.05$, **$p<.01$

4.2.4. REGRESSION ANALYSIS

To verify the relationship between the entrepreneur's age, positive gains after failure, and serial entrepreneurship speed, the model summary and coefficients are presented in Table 6. Model 1 includes only the control variables related to the entrepreneur's background. Model 2 incorporates these control variables along with the independent variables: the entrepreneur's age and positive gains after failure. Model 3 aims to analyze the moderating effect of positive gains after failure on the relationship between the entrepreneur's age and serial entrepreneurship speed by additionally including the interaction term "entrepreneur's age * positive gains after failure." Examining the explanatory power of each regression model, Model 1 (R^2 = .183, F = 4.617), Model 2 (R^2 = .205, F = 3.717), and Model 3 (R^2 = .237, F = 3.891) all demonstrate a good fit. The Durbin-Watson statistic for testing the independence of residuals is 2.077, indicating independence as it is close to 2. Based on Model 3, the results of hypothesis testing reveal that the effect of the entrepreneur's age on serial entrepreneurship speed is significant, thus supporting Hypothesis 1 (β = .335, t = 2.506). Additionally, Hypothesis 2 is also supported, as the moderating effect of positive gains after failure between the entrepreneur's age and serial entrepreneurship speed is significant (β = -.755, t = -2.066).

Table 6. Regression Analysis Results

		Model 1		Model 2		Model 3	
		β	t	β	t	β	t
Constant			7.648		5.931		4.807
Control Variable	Economic Family Support	-.147	-1.261	-.143	-1.233	-.149	-1.302
	Psychological Family Support	-.209	-1.873	-.275	-2.270	-.260	-2.173
	Self-efficacy	.284	2.572	.252	2.108	.223	1.879
	Cause of Failure	-.231	-1.742	-.227	-1.718	-.240	-1.842
	Duration of Operation	-.264	-2.894	-.300	-3.145	-.323	-3.409
Direct Effects	Entrepreneur's Age (A)			.134	1.440	.335	2.506
	Positive Gains After Failure (B)			.084	676	.761	2.175
Moderating Effect	A × B					-.755	-2.066
F		4.617		3.717		3.891	
R^2		.183		.205		.237	
Adjusted R^2		.143		.150		.176	
Change in R^2		.183		.022		.033	

Dependent Variable: Serial Entrepreneurship Speed

4.2.5. PROCESS MACRO

In this study, Hayes' PROCESS macro Model 1 was utilized to analyze the moderating effect of positive gains after failure on the relationship between the entrepreneur's age and serial entrepreneurship speed. Bootstrapping was set to 5,000 iterations with a confidence interval of 95% for hypothesis testing. The results analyzed through PROCESS macro Model 1 are presented in Table 7. The analysis revealed that both the independent variable, entrepreneur's age, and the moderating variable, positive gains after failure, significantly impacted the dependent variable, serial entrepreneurship speed (B = -.427), which is consistent with the OLS analysis results.

Table 7. PROCESS Macro Model 1 Results

		B	SE	t	p	LLCI	ULCI
Constant		4.563	.608	7.501	.000	3.356	5.770
Direct Effect	Entrepreneur's Age (A)	.377	.150	2.506	.013	.078	.675
	Positive Gains After Failure (B)	.183	.255	.719	.473	-.323	.690
Moderating Effect	A × B	-.427	.207	-2.065	.041	-.838	-.016
Control Variables	Economic Family Support	-.062	.047	-1.302	.195	-.157	.032
	Psychological Family Support	-.203	.093	-2.173	.032	-.389	-.017
	Self-efficacy	.173	.092	1.878	.063	-.009	.355
	Cause of Failure	-.159	.086	-1.842	.068	-.330	.012
	Duration of Operation	-.327	.095	-3.409	.000	-.517	-.136

To verify the dual moderation effect of positive gains after failure on the relationship between the entrepreneur's age and serial entrepreneurship speed, the results of the Johnson-Neyman technique analysis are presented in Table 8. The analysis revealed that when positive gains after failure are high, the effect is statistically significant (b = .377, CI: [.078, .675]).

Table 8. Analysis of the Moderating Effect of Positive Gains After Failure

Positive Gains After Failure	Effect	SE	t	p	LLCI	ULCI
Low	-.050	.142	-.355	.722	-.332	.231
High	.377	.150	2.506	.013	.078	.675

In Figure 2, it can be observed that when positive gains after failure are high, the serial entrepreneurship speed significantly increases. Conversely, in cases where positive gains after failure are low, there is no noticeable change in the serial entrepreneurship speed.

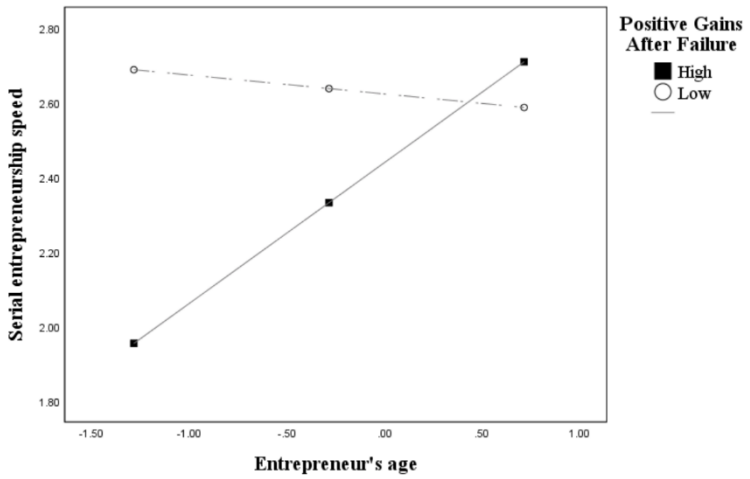

Fig. 2 Analysis of the Dual Moderating Effects of Positive Gains After Failure

5. CONCLUSION

5.1. RESEARCH FINDINGS

This study focused on three key factors in the entrepreneurial process: the entrepreneur's age, serial entrepreneurship speed, and positive gains after failure. It emphasized the definitions and characteristics of serial entrepreneurs, particularly examining how the entrepreneur's age significantly impacts serial entrepreneurship speed. Various causes of failure and family support variables were integrated as control variables for analysis. Thus, this study provided an in-depth discussion on the behavioral characteristics of entrepreneurs who have experienced business failure, as well as their learning and recovery processes.

The primary goal of this research was to verify the impact of the entrepreneur's age on serial entrepreneurship speed and to assess the moderating effect of positive gains after failure in this relationship. Data were collected from entrepreneurs who had experienced business failure, and the moderated moderation model was tested using the Hayes PROCESS macro analysis method. The summary of the findings is as follows:

1. Effect of Entrepreneur's Age on Serial Entrepreneurship Speed:

The analysis of the main effects of variables influencing serial entrepreneurship speed revealed that the entrepreneur's age significantly affects this speed. This indicates that the entrepreneur's age is a critical factor in the serial entrepreneurship process. Older entrepreneurs tend to have more experience, enabling them to make more careful and effective decisions. Therefore, considering the entrepreneur's age when developing and implementing serial entrepreneurship strategies is crucial. These results could enhance the understanding of serial entrepreneurship and aid decision-making in actual serial entrepreneurship processes.

2. Role of Positive Gains After Failure:

The study concluded that positive gains after failure strengthen the relationship between the entrepreneur's age and serial entrepreneurship speed. This suggests that positive gains have a

greater impact on older or more experienced entrepreneurs, facilitating a faster serial entrepreneurship speed. Consequently, both the entrepreneur's age and positive gains after failure can act complementarily in influencing serial entrepreneurship speed.

5.2 IMPLICATIONS

First, it was confirmed that the entrepreneur's age has a significant impact on the speed of serial entrepreneurship. In particular, older entrepreneurs tend to be more experienced, allowing them to make more careful and effective decisions. This suggests that age is an important factor in the serial entrepreneurship process. These results emphasize that entrepreneurs should consider their age when developing and implementing strategies for serial entrepreneurship, which could aid decision-making in actual scenarios.

Second, the analysis indicates that positive gains after failure strengthen the relationship between the entrepreneur's age and serial entrepreneurship speed. Specifically, positive gains after failure appear to have a greater impact on older or more experienced entrepreneurs. This suggests that these entrepreneurs are more likely to view failure positively and learn from it, thereby enhancing their serial entrepreneurship speed. Thus, the entrepreneur's age and positive gains after failure can act complementarily to promote serial entrepreneurship speed.

In summary, there is a need to develop entrepreneurial support policies that take into account the characteristics of entrepreneurs by age. Specifically, policies should be strengthened to support older entrepreneurs by leveraging their experience and self-efficacy.

5.3 LIMITATIONS AND FUTURE RESEARCH

While this study investigated various factors affecting the speed of serial entrepreneurship, it has several limitations:

First, the limited sample size restricts the generalizability of the research findings. A study with a larger number of participants is needed to obtain more accurate and reliable results.

Second, the analysis was conducted based on a limited dataset, which may constrain the applicability of the results. Future research should aim to expand the understanding of serial entrepreneurship speed across diverse cultural, industrial, and geographic contexts.

Finally, although this study aimed to control for other factors affecting serial entrepreneurship speed using control variables, it was challenging to account for all potential variables comprehensively. Therefore, future research should consider and analyze a broader range of factors that may influence serial entrepreneurship speed.

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