

## Examining the Antecedents of Entrepreneurial Learning from Failure: A Study of Developing Country Context

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### Abstract

Entrepreneurship is a challenging and dynamic process that involves risks and uncertainties. Failure is an inherent part of the entrepreneurial journey and can have a profound impact on the learning process and future intentions of entrepreneurs. However, failure can be an essential source of learning and advancement with good coping mechanisms. Entrepreneurs work to accept and attempt to convert failure into an opportunity to learn more, that is, their attitudes and skills, into a more advanced state and knowledge. The study employed a quantitative cross-sectional research design. The data was collected using a structured questionnaire administered to a sample of 318 failed entrepreneurs in the three major cities of Pakistan. The hypothesized model was tested using partial least squares structural equation modeling (PLS-SEM) technique. The results indicate that five factors are essential antecedent relationships for entrepreneurial learning from failure (ELF). Resilience (RES) Entrepreneurial Self-Efficacy (ESE) Emotion regulation (ER) internal locus of control (ILC) and Recovery capabilities (RC) are considered the most substantial antecedents. Individuals with higher RES, ESE, and ILC are more likely to learn deeper from failure. The significance of Emotion regulation and recovery ability was found significant. Recovery capabilities and emotion regulation enhance our understanding of cognitive and emotional processes that support effective learning in demanding entrepreneurial contexts. The findings have implications for entrepreneurs, policymakers and educators. The entrepreneurial training programs may benefit by embedding resilience, self-efficacy, emotion regulation, and recovery-capability-strengthening factors in their curriculum. Learning from one's failures to increase the probability of success requires educational institutions and support organizations to fortify these among entrepreneurs. This study presents a comprehensive analysis of psychological and cognitive factors in entrepreneurial learning from failure. In this regard, a fresh understanding is given on how these factors interplay and contribute to favorable learning outcomes.

**Keywords:** Entrepreneurial Learning from Failure, Resilience, Entrepreneurial Self-Efficacy, Emotion Regulation, Internal Locus of Control, Recovery Capabilities

### **Introduction**

An integral component of learning to be an entrepreneur is failure. While important, there is a lack of awareness regarding the learning process that enables an entrepreneur to bounce back from a setback. Learning is a continuous process in entrepreneurship (Alvarado et al., 2023). Following tragic events, entrepreneurs might get beneficial insights. One of the most important things an entrepreneur may experience is failure or the shutting of a business that cannot support itself financially. Because entrepreneurship involves a great deal of uncertainty and ambiguity, failure is a common occurrence. The intriguing subject of "business learning from failure" delves into the important lessons discovered from mistakes and setbacks made along the way (Cope, 2011).

The ability to apply what has been learned more effectively and to learn from past mistakes is the most important element of success (Zehrer & Leiß 2019). However, most people concentrate on successful businesses rather than failures while studying and practicing entrepreneurship because of anti-failure bias. Additionally, Dias & Martens (2019) believed that business owners should learn from their own failure in addition to those of successful business owners. Entrepreneurs who fail may have to deal with a range of societal, psychological, and financial repercussions (Costa et al., 2023). A decrease in personal income or its loss could have financial repercussions. The effects of failure on interpersonal and professional relationship, such as separation and/or the loss of a major social network, are linked to the social costs. The highly insulting societal devaluation of an individual who additionally does not or no longer satisfies social norms is the stigma associated with failure (Memon et al., 2019).

Entrepreneurial ventures are prone to failure, but the element of learning from failure can be a critical driver of success in future ventures (Ucbasaran et al., 2013; Boso et al., 2019; Lattacher et al., 2020). Therefore, insights into the psychological and cognitive factors that underlie learning from entrepreneurial failure is vital, especially in the context of developing economies such Pakistan, where the socio-economic consequences of failure or the support structure differ greatly from the developed world. Resilience, entrepreneurial self-efficacy, emotion regulation, internal locus of control and recovery capabilities may collectively prescribe the nature of the relationship between entrepreneurial failure and the construct of the learning process. The inability to pinpoint a mechanism or process for learning from failure makes it difficult to comprehend entrepreneurial failure. Learning from past mistakes is not a natural process, and past failures do not always guarantee future success (Gielnik et al., 2020). Therefore, there are important theoretical and practical ramifications for studies on entrepreneurial learning from failure. The many facets of failure as a potent catalyst for development, innovation, and adaptability within the entrepreneurial ecosystem are examined in this study.

Academics studying entrepreneurship are especially interested in entrepreneurs' capacity to adjust and overcome hardship because they face challenges frequently when starting a new business. Consequently, scholars studying entrepreneurship have started to develop and broaden the notion of psychological resilience at the individual level in the context of entrepreneurship (Markowska & Wiklund 2020). The strategies used by entrepreneurs to

build and apply their capabilities to adjust and deal with adversity in their line of work as entrepreneurs are referred to as entrepreneurial resilience (Bullough et al., 2013).

Resilience is defined for the purposes of this study as the capacity to sustain generally stable, optimal levels of mind and mental well-being in the face of trauma or major loss (Zautra et al., 2010). According to Nikolić et al (2019), the ability of a person to carry out daily activities in other areas of their lives after experiencing a stressful event is another definition of resilience. According to this theory, resilience is a skill that can be acquired. Researchers use a reactive approach to study resilience, looking at the emotional and psychological state of an entrepreneur after a company fails. People view failure as extremely unpleasant, almost as stressful as losing a loved one (Hou et al., 2018; Stroe et al., 2020).

Self-efficacy is crucial to entrepreneurship because launching and growing a business is an ambitious and difficult process with many obstacles to overcome. Past achievements have an impact on one's self-efficacy, or confidence in one's capacity to accomplish goals. When faced with institutional weaknesses, those with low self-efficacy could give up, but people with high self-efficacy find ways to overcome those (Su et al., 2020). Research on self-efficacy offers important perspectives for understanding serial entrepreneurs. Since they have been demonstrated to have a beneficial impact on effort, tenacity, goal setting, and performance, research indicates that people who have higher levels of self-efficacy in entrepreneurship are more likely to participate in future activities (Qin et al., 2020). People who have an internal locus of control believe they are in charge of their surroundings. As Stated differently by Hamzah and Othman (2023) it refers to which or whoever decides a person's fate. People who have an internal locus of control are more likely to think that their choices affect the benefits or results they experience. Owner-managers who possess an internal locus of control are able to effectively search for and identify exceptional venture prospects because their self-assurance in their skills makes them more aggressive and perceptive to entrepreneurial opportunities.

Despite the considerable advancement of knowledge regarding entrepreneurial learning from failure, certain relevant antecedents have been neglected so far. These include two concepts originating in the attribution theory perspective that is concerned with the meaning attributed to events and their outcomes. The study reflects on the less examined antecedents of the internal locus of control and recovery capability (Arkorful et al., 2022; Zaho & Wibowo 2021). Thus, the internal locus of control reflects on the person's belief in their impact on events and their outcomes, has been found to be powerful in proactive coping and resilience in the psychological literature. However, the effect of the internal locus of control on learning from entrepreneurial failure has not been closely examined. The second concept, recovery capability, pertains to "the variety of strategies and resources that entrepreneurs draw upon following a setback to bounce back from it". This concept is vital to learning from failure; however, only limited research has dealt with this topic. Reflecting on these unexplored phenomena is necessary for a more complete picture of the process facilitating and inhibiting entrepreneurial learning and for subsequent interventions that seek to improve entrepreneurs' resiliency and learning outcomes. The study explored the relationships between personal characteristics and outside forces in an effort to provide readers with a thorough understanding of how entrepreneurs in developing countries overcome adversity, embrace experimentation, and use failure as a springboard to success. This study attempts to provide valuable insights through empirical research to academic discussion and real-world entrepreneurship activities in developing countries like Pakistan.

## **Literature Review**

### **Attribution Theory**

Attribution Theory, most notably developed by Heider (1958) and subsequently expanded by Weiner (1985), posits that the causal explanations that people make about their life experiences have a considerable impact on their subsequent motivational and behavioral patterns. When entrepreneurs encounter failure, they engage in a cognitive process to attribute the causes of this failure. These attributions can be internal (personal ability, effort) or external (market conditions, competition). The type of attribution significantly influences the emotional and behavioral responses of the entrepreneur, which in turn affects their learning process (Shepherd, 2003; Weiner, 1985). Attribution theory provides a valuable lens for understanding how entrepreneurs interpret and learn from their failures. The nature of attributions whether internal or external significantly influences the emotional recovery and subsequent learning behaviors of entrepreneurs. By fostering adaptive attributions and promoting a growth mindset, entrepreneurs can better navigate the challenges of failure and leverage these experiences for future success.

### **Resilience and Entrepreneurial Learning from Failure**

Understanding the relationship between entrepreneurial learning from failure and resilience is essential to comprehending how people navigate the challenges and disappointments that come with being an entrepreneur. Entrepreneurial behavior and results are significantly influenced by resilience, which is the capacity to bounce back from adversity, adjust to changing conditions, and have a positive attitude in the face of setbacks (Lafuente et al., 2019). In the context of entrepreneurship, researchers looked at resilience elements obtained from psychology and health studies. For instance, Yao et al (2021) evaluated a sample of Spanish entrepreneurs' hardiness, resourcefulness, and optimism using metrics developed by health specialists. These studies, which are mainly quantitative in nature, use samples of entrepreneurs who deal with challenging situations such as overcoming cultural gender norms and living in combat zones (Hartmann et al., 2022).

Because resilience has only been tested once in the past, research to date is unable to shed light on the temporal dimension, which is crucial to psychology's definition of this construct. Psychologists, for instance, describe normal patterns of functioning two years following a traumatic event or loss (Riar et al., 2021). Resilience is one pattern, characterized by modest to moderate functioning disruptions that last for a few months before returning to normal. A chronic pattern of significant functional disruptions that lasts for two years after the occurrence is at the other end of the spectrum. In the middle are the delayed and healing patterns. Third, current studies examine the resiliency of both accomplished and aspiring business owners.

In a related study Zehrer and Leiß (2019) described resilience as an individual's capacity or psychological resource that helps entrepreneurs overcome adversity. Their study examined the long-term effects of resilience in a cohort of prospective business owners enrolled in a start-up program. On the other hand, Dias and Martens (2019) postulated and found that resilient people should also have higher venture survival rates because they are more inclined to take proactive measures to address business issues and because they prefer to view adversity as a task they can overcome. Yao et al (2021) presented the idea that business success and entrepreneurial resilience are positively correlated. Whereas González-López et al (2019) found a strong correlation between resilience and business performance, as seen by rising staffing levels, profitability, and sales growth. Entrepreneurial resilience is a

dynamic adaptation process that enables company owners to maintain their focus on the future even in the face of challenging market conditions and unstable events that they frequently encounter (Amankwah-Amoah et al., 2022).

H:1 Resilience has positive impact on entrepreneurial learning from failure

### **Self- Efficacy and Entrepreneurial Learning from Failure**

Understanding how people think about and respond to their failures in entrepreneurial endeavors necessitates an understanding of the role played by self-efficacy and learning from failure in an entrepreneurial context. Self-efficacy, a term used to describe the belief in oneself to undertake the tasks necessary to accomplish desired objectives, and confidence play a critical role in determining the actions and consequences of entrepreneurs (Duarte et al., 2019). Individuals who have a strong sense of self-efficacy are more prone to learn from setbacks rather than be defeated by them. Following a setback, these individuals frequently increased their levels of resilience, persistence, and reflexive capacities on the newly developed learning from failure scale (Lin et al., 2023).

The word "self-efficacy" was proposed by Bandura (2012) to characterize a person's confidence in their own capacity to do tasks. It is intended for self-efficacy to arise prior to purpose formation. People are more likely to develop a motivation to finish a task if they think they can accomplish it. People who don't think they have what it takes to accomplish a goal are less likely to make plans to go after it (Hsu et al., 2019).

Research indicates that individuals with high self-efficacy take a more proactive approach to getting feedback, experimenting with other approaches, and adapting their plans when they don't work out as planned (Marshall et al., 2020). They also exhibit greater perseverance in pursuing their goals, particularly in the face of obstacles. People who have low self-efficacy, on the other hand, could view failure as proof of their own shortcomings, which could cause them to become disengaged, shy away from difficulties, and have less possibility for learning.

H: 2 Entrepreneurial self-efficacy has positive impact on entrepreneurial learning from failure

### **Emotion Regulation and Entrepreneurial Learning from Failure**

According to De Cock et al (2020), entrepreneurial journey as an emotional roller coaster, but there's not much information available about how successful entrepreneurs should navigate this ride to increase the likelihood of their businesses succeeding. According to Su et al (2020), any process that modifies emotional intensity over time and governs if, when, and how we experience and communicate positive or negative emotions is referred to as emotion regulation. Although people manage their emotions in different ways, they frequently employ the same strategies unconsciously and without much thought (Brooks et al., 2019). The regular use of a particular emotion management technique was the definition, analysis, and measurement of emotion regulation in earlier research. Previous studies emphasize the automatic nature of emotion regulation rather than the application of situation-specific, intentional emotion regulation (Fang et al., 2018; Schmodde & Wehner, 2024).

The term "emotion regulation" describes a range of strategies that affect how people manage their emotional experiences, such as acceptance, suppression, and cognitive reappraisal (Gross, 2002). In the entrepreneurial setting, strong emotion control is required

to handle setbacks, make decisions under conditions of uncertainty, and stay motivated under conditions of difficulty. Engel et al (2021) research found that entrepreneurs with a strong capability to regulate their emotions were more likely to display resilience and persistence in the aftermath of a setback. Failure is an unavoidable aspect of the entrepreneurial experience, but it also provides a marvelous opportunity to grow and learn. According to Lu et al (2022), entrepreneurs who view setbacks as opportunities to discover exhibit higher levels of creativity and adaptability. However, the learning process is complicated and varied for everyone. It is influenced by individual characteristics, organizational situations, and disproportional socio-cultural factors. Entrepreneurs' ability to control their emotions appears to have a significant impact on their interpretation and response to fascinating episodes of failure.

According to Klimas et al (2021), high emotional regulation ability makes a person more responsible for reflection and learning from error and modifying their behavior. In contrast, low emotional regulation could have an impact on the learning process related to increased negative effects, delayed reasoning and thought processing and opportunity exploration. Between controlling your emotions and learning from your error, there are many methods to utilize to fail as an entrepreneur. According to Wang et al (2021), the phenomenon of cognitive reappraisal, the ability to interpret the value of adverse events in a new way, may help entrepreneurs derive essential lessons from failure. Su et al (2020) noted that emotion regulation contributes to increasing cognitive capacity, including the ability to sustain decision action, decision capacity, and cognitive clarity under pressure. Engel et al (2021) also believes that after failing or loss experience, failed entrepreneurs are more likely to engage in those forms of learning matures and critical reflection than to be overwhelmed by negative emotions or cognitive mistakes.

H: 3 Emotion regulations has positive impact on entrepreneurial learning from failure

### **Internal locus of Control and Entrepreneurial Learning from Failure**

Internal locus of control suggests that an individual's decisions and actions lead to results experienced, and external locus of control indicates that an individual is not in control of results because one's results controlled by external causes (Hidayat et al., 2020). To understand how individuals see and respond to failures in their entrepreneurial pursuit, one must understand the nature of how internal locus of control and the desire to understand internal locus of control affect entrepreneurs' learning from failure. Isma et al (2020) found that individuals with an internal locus of control do significantly better at learning from failure in the context of entrepreneurship. Instead of thinking of failure as randomness or allowing life occurrences out of their control, individuals with an internal locus of control are more likely to see failure as a product of their investment and actions, such as effort, decision-making, and strategy (Tseng et al., 2022). As such, they are more likely to be honest with themselves, engage in hindsight reflection, and learn valuable lessons to drive future behavior. Individuals with internal locus of control also show more grit and adaptation in the face of failure. These people view setbacks as temporary and local challenges rather than global and final barriers (Annisa et al.. 2021). In other words, this type of thinking encourages a proactive learning strategy through experimentation, adaptation, and seeking opportunities.

Conversely, Qin et al (2020) stated that those with an external locus of control more likely become exposed to learned helplessness — or fatalistic attitude — after failing. The feeling

of agentive helplessness whereby individuals lose the desire to benefit from experience occurs if they attribute the cause of their prior failures to external uncontrollability such as sheer luck or the whims of the marketplace, according to the study Uysal et al (2022) Success in entrepreneurship requires a delicate balance of self-belief, resilience, and adaptability, especially when it comes to failure. At the heart of this continuum stands the concept of internal locus of control, defined as people's faith in the extent to which they can influence outcomes via their actions. This work examines the state of the literature on developing entrepreneurs learning from failure through an inner locus of control.

One of the components of the internal locus of control is the entrepreneurs' perceptions and reactions to personal failures. Asante and Affum-Osei (2019) stated that individuals with an internal locus of control are more likely to engage in a view of failure offered by the mastery goal frame – failure is a temporary and tractable problem. Thus, all individuals are better equipped to engage in productive reflective learning, identify the root causes of problems, and engage in corrective action to improve their performance next time (Hamzah & Othman, 2023). Individuals with high levels of internal locus believe they are the masters of their destiny – they fully attribute their success and failure to their own effort and skill. In the context of entrepreneurship, an internal locus of control leads to more pro-activeness, persistence, and risk-taking (Zhao & Wibowo, 2021). Entrepreneurs possessing this characteristic are less likely to view a personal failure as a direct reflection of their capabilities, but rather as an opportunity for learning, and developing a growth-focused mindset and more likely to lead to greater resilience and creativity (Arkorful et al., 2020).

H: 4 internal locus has positive impact on entrepreneurial learning from failure

### **Recovery Capabilities and Entrepreneurial Learning from Failure**

To understand how entrepreneurs in developing countries overcome the hardships and failures that come with their enterprise, it is vital to consider the link between entrepreneurial learning from failure and recovery capabilities (Martinez et al., 2019). The methods, approaches, and resiliency used by entrepreneurs to recover from setbacks and move forward with their business objectives are referred to as recovery capacities. This contributes to the recovery of the business, which may include the size of the business's primary market, the economic sector it is in, what the business is doing as regards direct and indirect effects of catastrophes, such as property damage, forced closure, and interruption of the owner's perceptions regarding the general state of the economy (Lin et al., 2023). According to the study of Morrish & Jones (2020), entrepreneurs operating in developing countries often confront various socio-economic, institutional, and environmental scenarios that may exacerbate the negative impacts of failure. Whether entrepreneurs can recover from their losses and capture important lessons from their experiences to figure it out, recovery competencies are essential (Nikolić et al., 2019). Strong recovery capabilities make it possible for entrepreneurs to benefit from their mistakes and modify their approaches (Shepherd, 2003; Mahto et al., 2022).

Recovery capabilities are particularly important for learning from failure in entrepreneurship. Recovery capability reveal the extent to which an entrepreneur is capable of dealing with any failures and it shows that the individuals with higher recovery capability are likely to learn from their failures and this knowledge will help him or her in altering his or her business (Kim et al., 2009; Shepherd, 2003). However, there are certain ways through which the capability for recovery can be strengthened by the entrepreneurs continuously.

Thus, such measure can be attained through: support from social network, being mindful and self-reflection (Mahto et al., 2022).

H: 5 Recovery capabilities have positive impact on entrepreneurial learning from failure

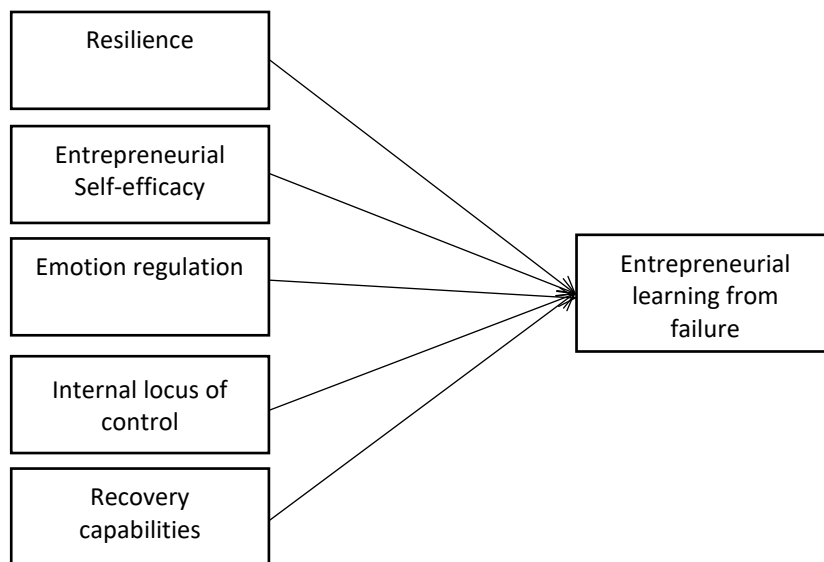


Figure 1 Conceptual framework

### **Methodology**

This study employed a quantitative research design because it evaluates particular sample characteristics that are simply and accurately generalizable to the population (Creswell & Creswell, 2017). Thus, quantitative research is needed to predict and explain events over larger samples (Cooper et al., 2006). This technique also requires predictable and understandable behavior (Johnson & Christensen, 2019). The population of this study is three major cities of Pakistan, Karachi, Lahore and Islamabad, because these cities have business activities. The data was collected from failed entrepreneurs using purposive sampling to increase the response rate, and a snowball technique was used. The period of data collection was from the month of March 2023 to September 2023. A total of 400 questionnaires were distributed, and 330 survey responses were received. Out of this, 12 questionnaires were incomplete and not included in the analysis. The final sample comprised 318 questionnaires, and SmartPLS 4 software was used for data analysis.

### **Measurement**

The study employed all variable measurements based on indicators established from previous studies. Entrepreneurial learning from failure has five items adopted Shepherd et al (2011); Boso et al (2019); Liu et al (2019); resilience has eight items (Sinclair & Wallston 2004); entrepreneurial self-efficacy has six items (Chen et al., 1998) while emotion regulation was measured have four items (Law et al., 2004). Recovery capabilities scale has six items (Argentzell et al., 2017), and the internal locus of control has five items (Mueller and Thomas, 2001; Indarti & Krinstiansen, 2003). The six variables were measured using a five-point Likert scale (1 strongly disagree and 5 strongly agree).



**Respondents Profile**

Respondents were 81.7% males (260) and 18.2 % females (58). A total of 34.3% respondents were in the age group of 20-30 years having Bachelor's degree and 39% respondents in the age group of 31-40 that is highest failure age group with Master's degree. 173 entrepreneurs having 1-2 years' experience i.e. 54.4% and 92 entrepreneurs having 3-5 years' experience i.e. 28.9%. The study also examined the entrepreneurs' encounters with failures, finding that a significant majority had experienced two ventures failures, i.e. 44.9%. Failures were apparent in multiple areas, with the food industry accounting for 37.7% and the wholesale and retail sector accounting for 11.0% of the total.

Table 1

*Reliability and validity of the measurement model*

Variable	Item	Loading	C. alpha	Composite reliability	AVE
Entrepreneurial learning from failure	ELF1	0.748	0.847	0.892	0.624
	ELF2	0.809			
	ELF3	0.709			
	ELF4	0.759			
	ELF5	0.910			
Resilience	RES1	0.670	0.863	0.893	0.512
	RES2	0.644			
	RES3	0.645			
	RES4	0.791			
	RES5	0.735			
	RES6	0.680			
	RES7	0.813			
	RES8	0.728			
Entrepreneurial Self-Efficacy	ESE1	0.677	0.848	0.888	0.573
	ESE2	0.748			
	ESE3	0.779			
	ESE4	0.630			
	ESE5	0.792			
	ESE6	0.889			
Emotion Regulation	ER1	0.822	0.780	0.859	0.605
	ER2	0.834			
	ER3	0.740			
	ER4	0.706			
Internal locus of control	ILC1	0.831	0.853	0.894	0.630
	ILC2	0.754			
	ILC3	0.767			

	ILC4	0.859			
	ILC5	0.751			
Recovery capabilities	RC1	0.773	0.877	0.908	0.624
	RC2	0.775			
	RC3	0.852			
	RC4	0.893			
	RC5	0.661			
	RC6	0.766			

The above table shows the study's measurement model, including items used to measure each construct, factor loadings, internal consistency (Cronbach's alpha), composite reliability (rho\_c), and average variance extracted. Higher factor loadings indicate better construct assessment since they reveal the strength of the relationship between each item and its underlying construct. Internal consistency indicates the scale's reliability by showing how similar the items are. Composite reliability accounts for shared variation and measurement error to evaluate construct dependability. The scale's convergent validity is shown by the construct's average variance extracted relative to measurement error. Furthermore, the Composite Reliability scores, ranging between 0.630 and 0.910, exceeded the minimum benchmark of 0.50, indicating robust reliability across all constructs (Hair et al., 2021). Additionally, AVE values should exceed the established threshold of 0.50 for acceptability (Hair et al., 2021). Convergent validity is indicated by most constructs' AVE values above 0.5. These results show that the measurement model captures the intended constructs and provides reliable and valid measurement for study analysis.

Table 2  
*Discriminant Validity HTMT*

	ELF	ER	ESE	ILC	RC	RES
ELF						
ER	0.557					
ESE	0.509	0.577				
ILC	0.565	0.552	0.455			
RC	0.479	0.481	0.372	0.357		
RES	0.393	0.352	0.297	0.349	0.285	

The Heterotrait-Monotrait (HTMT) ratio of correlations, used to assess structural equation model construct discriminant validity, as shown in the above table. The table provides construct correlation ratios, with values closer to 1 suggesting less discriminant validity (Henseler et al., 2015). The numbers in this table are all less than 1, showing that construct correlations are lower than item correlations. This supports discriminant validity because the constructs are unique enough. HTMT ratios for all pairings of constructs (ELF, ER, ESE, ILC, RC, and RES) are below the 0.85 threshold used to assess discriminant validity, showing that the model's measurements can distinguish between constructs. These findings support the structural equation model's ability to examine research variables' relationship.

Table 3

*Discriminant Fornell Larcker*

	ELF	ER	ESE	ILC	RC	RES
ELF	0.790					
ER	0.455	0.778				
ESE	0.439	0.474	0.757			
ILC	0.488	0.456	0.393	0.793		
RC	0.417	0.405	0.324	0.319	0.790	
RES	0.342	0.290	0.257	0.301	0.242	0.716

The above table shows the Discriminant Fornell-Larcker criterion results for structural equation model construct discriminant validity. In this table, diagonal elements show the square root of the average variance extracted (AVE) for each construct, whereas off-diagonal elements provide construct correlations. The diagonal values show how much variance each construct's indicators capture. Higher values indicate more convergent validity. Values below the diagonal indicate discriminant validity since the square root of the AVE for each construct is greater than the correlation with other constructs. This implies that the model's measures are different and capture the desired constructs, validating the structural equation model's ability to examine these variables' relationships.

Table 4

*Hypotheses Testing Results*

Hypothesis	Original sample (O)	Standard deviation (STDEV)	T statistics	P values	Decision
H1 RES → ELF	0.133	0.050	2.638	0.008	Supported
H2 ESE → ELF	0.177	0.052	3.418	0.001	Supported
H3 ER → ELF	0.140	0.055	2.534	0.011	Supported
H4 ILC → ELF	0.254	0.055	4.649	0.000	Supported
H5 RC → ELF	0.190	0.047	4.060	0.000	Supported

Table 4 shows the direct effects that psychological and cognitive factors have on ELF. Specifically, ELF is the dependent variable while all the other factors are dependent variables. The results are as presented below: These results in hypothesis are supported H1 RES → ELF this relationship is supported by  $t = 2.638$  and  $p = 0.008$ , which indicates a positive effect on learning from failures. ESE → ELF: H 2 is also supported, supported by t-statistic and p-value of 3.418 and 0.001 respectively. It shows a strong relationship between self-efficacy and effective learning from failure. ER → ELF: H3 being accepted and are supported by a t-statistic of 2.534 and a  $p = 0.000$  that suggests that better emotion regulation significantly improve learning from entrepreneurial failures. H4 the relationship with ILC → ELF results in a strong statistical measure of  $t = 4.649$  and  $p = 0.000$ , which indicates that entrepreneurs who can influence events better are more likely to learn from failures. H5 It is also supported RC → ELF, as  $t = 4.060$  and  $p = 0.000$ ; thus, the ability to regain from failure enhances learning from them.

**Discussion**

The present study contributes to the literature of entrepreneurial learning from failure by introducing Psychological and cognitive factors, antecedents of entrepreneurial learning from failure. The literature review presented in this research work shows that there are five factors that can increase learning after business failure among failed entrepreneurs. The findings of the present study support the significant influence of resilience, self-efficacy, emotion regulation, internal locus of control, and recovery capabilities on entrepreneurial learning from failure. All of the presented psychological and cognitive factors affect the way entrepreneurs process and learn from failure affecting their ability to re-enter entrepreneurial activities. The prior studies reviewed above explain the same results showing strong evidence of psychological and cognitive factors' impact on entrepreneurship success and resilience. The positive relationship of resilience and recovery capabilities with ELF observed in this study are supported by previous research (Zhao & Wibowo, 2021; Ayala & Manzano, 2014).

According to Shepherd (2003) Recovery capabilities is generally defined as the ability to recover quickly from a failure experience. Therefore, it is highly important for an entrepreneur to learn from failure. The author stressed a strong relationship of resilience and speed of ELF as the highest scores on recovery capability variable predicted speed of re-entry. Thus, resilience is strongly related to being able to turn failure promptly into an experience factor. Recovery capabilities were measured as the speed with which the company regains its previous functionality and motivation, thus enabling to re-enter faster. Therefore, it is fair to conclude that the higher the resilience and recovery capabilities, the more likely the entrepreneur will use the failure experience. These findings support the idea that resilient entrepreneurs generally have a positive view on failures, which means that they do not consider them obstacles but sources of learning opportunities. According to the Bandura's (2012), self-efficacy theory participants' self-efficacy will be a powerful predictor of their own perceptions and learning from failure. The author defined self-efficacy as the belief in one's capability to accomplish challenges and produce the desired effect. Thus, high self-efficacy entrepreneur must demonstrate a higher inclination to use failure for further strategic decisions due to its learning potential. These claims were supported by earlier studies that identified self-efficacy as fostering persistence after failure and deeper analysis of the causes of failure, which leads to more learning-oriented free.

This study adds to existing literature on entrepreneurial learning from failure by proving that emotion regulation plays an important role in learning outcomes because it allows an entrepreneur to remain poised and think analytically. Indeed, the study testifies to the importance of learning to manage one's emotions as a tool for enhancing learning outcomes (Fang He et al., 2018). It is possible due to keeping one's cognitive clarity and avoiding falling into an emotional trap during and after the failure, which can easily result in overgeneralizations and conclusions that involve sensation clichés. The internal locus of control was also confirmed as a predictor of learning from failure (Zhao & Wibowo, 2021). Entrepreneurs who are confident that they can influence the outcomes through their actions are more likely to engage in reflective learning gleaned from failures and apply the acquired insights to future failure experiences. Since their inner philosophy empowers them to draw valuable lessons from failure rather than giving up to external circumstances, their learning outcomes are presumably better.

### **Conclusion**

The current study has made valuable contributions to our knowledge of the role of psychological and cognitive factors in the process of entrepreneurial learning from failure. Particularly, it has been identified that resilience and the ability to recover, self-efficacy, the capacity to regulate emotions, an internal locus of control, as well as recovery capabilities of entrepreneurs are each important in their own way for the ways this group of individuals process failures. Greater levels of each of these factors ensure that entrepreneurs can not only endure failures in a better way, but also have higher chances to extract the lessons they may offer, which is necessary to fully re-engage with this career interest. Additionally, it has been found in the course of the current research that both resilience and recovery capabilities of businesspeople directly contributed to the speed and success of overcoming a stumbling block. Moreover, the results provided evidence that a higher level of self-efficacy was promoting the belief in one's abilities, enabling more profound reflection and engagement into the process of learning from failures. Lastly, better emotion regulation abilities facilitated more objective analyses and decision-making during times of distress and frustration, and an internal locus of control assisted entrepreneurs in identifying constructive actions that could be taken as a result of a failure experience.

### **Limitations and Future Research Directions**

Despite the significant contributions to the existing body of knowledge this study has several limitations. These limitations offer avenues for future research. First, the majority of studies based on the existing review model have a cross-sectional design. This means the current study nature of relationships causality cannot be fully determined. Similarly, many of these studies rely on self-reported data which are exposed to potential biases, including social desirability. Second, the current study is in the perspective of developing country like Pakistan, which impedes generalizability of results issue. Third, only few studies have been longitudinal in nature, failing to confer how time affects the nature of these relationships. Fourth, the model is narrow as it almost exclusively focuses on psychological and cognitive factors. Others, such as those stemming from entrepreneurs' social support networks, industry context and specific rules and challenges, and entrepreneurship education and mentorship are largely excluded. To combat these limitations, it would be necessary to conduct longitudinal studies in future. These studies would ideally include both quantitative and qualitative data to get an accurate picture of the relationships and their dynamism. Indeed, research that combines methodological approaches can increase understanding of the role of psychological and cognitive factors in entrepreneurial learning from failure is nascent. It remains important to conduct interdisciplinary research that includes psychologists, sociologists, and business researchers. These results should also include other important cognitive and psychological factors that are not included in the current study such grit, optimism, and cognitive flexibility.

### **Practical Implications**

Despite limitations, the current study provides the following practical implications. Training programs for entrepreneurs can be developed that primarily focus on resilience and emotion regulation as skill sets. These programs could involve workshops in which participants might go through various stressful scenarios that entrepreneurs usually face and be asked to manage their emotional responses, apply problem-solving techniques under pressure etc. This form of training can help them be composed in hostile situations and adapt better in the

real world. One can also develop mentoring programs catering to entrepreneurs in which the more experienced entrepreneurs with a robust internal locus of control and recovery capabilities can guide new entrepreneurs in facing their setbacks know their failure stories, and coach them in avoiding their mistakes. Peer support groups that span across industries could be formed where they can share their failure and recovery best practices across the group and make it part of their collective learning story. Proprietary programs can be developed that specifically focus on the failure and recovery stories of successful entrepreneurs. Knowing the stories of other successful entrepreneurs who have faced failure at some point in their careers can instill self-confidence in them and encourage them to take a fresh direction in trying to get things done. Openly discussing vital topic failure within the business culture can help entrepreneurs change their internal attributions for their failure. Making it an open discussion to talk about failure to identify weak links in the strategic chain of decisions can reduce the mystery of failure and make it a rapid learning story by adapting strategies. Lastly, Individuals use computer applications to assess their emotional and cognitive responses and receive contemporaneous proposals to understand their stress responses and determine how to correct them. An application like this can help individuals correct their emotional responses to critical business decisions and learn to become more resilient and adaptive by improving their critical thinking process. Policy Programs to Cultivate Business Resilience: Additionally, the government can also participate in implementing policy programs that can be joined with learning and resilience ecologies by funding resilience training at the entry stage of entrepreneurs, reduced tax incentives for companies with mental health and wellbeing directions, recognition of top players in learning from failure across the industries. These practical measures not only help in reducing the fallouts of entrepreneurial failure but also help in creating a stronger value-driven and experimental business marketplace environment. Such measures can ensure that all the stakeholders in an economic ecosystem on which an entrepreneurial venture depends have a good chance to sustain in competitive environments.

**Conflict of Interest**

The authors declare no conflict of interest.

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