



Entrepreneurial learning from failure: a systematic review and bibliometric analysis on its theoretical foundations, antecedents, outcomes, and an agenda for future research

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Abstract

The purpose of this study is to provide an overview of the concept of entrepreneurial learning from failure (ELF), highlighting the different perspectives and factors associated with ELF and how entrepreneurs can learn from those experiences. This study uses a systematic literature review and bibliometric analysis to analyze research on ELF. Using Paul and Rosado-Serrano's (2019) theory, characteristics, context, and methodology (TCCM) framework, the study summarizes the existing ELF literature. Therefore, this review synthesizes research on ELF theory development, context, characteristics, and methodology, aiming to assess the progression of literature development over time. Moreover, this systematic review examines the theoretical underpinnings, antecedents, and outcomes of ELF. The review synthesizes current research on this topic, identifies gaps, and proposes a future research agenda. A total of 65 peer-reviewed articles between 2000 and June 2023 were used in the analysis with VOSviewer version 1.6.20 to analyze data from the Scopus database. This study contributes to the existing literature on ELF in various ways. First, it analyzes field publication patterns by year, author, country, and institution. Second, it maps citation and co-authorship networks to find influential research and authors. Third, it maps the field's intellectual structure by identifying prevalent themes and intellectual structures using co-occurrence and co-citation analyses, guiding academics to future study avenues and avoiding stagnation. Fourth, this study examines entrepreneurial learning from failure literature objectively and thoroughly using bibliometric analysis and systematic literature evaluation. Finally, we employed the TCCM framework to identify specific promising directions for further investigation.

Keywords Entrepreneurial learning · Entrepreneurial failure · Business failure · Re-emergence after failure · Systematic literature review · Bibliometric analysis · VOSviewer

1 Introduction

The concept of entrepreneurial learning from failure has gained considerable attention from academics, policymakers, and practitioners over the past decade (Shepherd and Patzelt 2017; Lattacher and Wdowiak 2018; Cacciotti et al. 2020; Zhao et al. 2021; Munawaroh et al. 2023). Failure is inevitable in entrepreneurship (Shepherd 2003). However, failures might actually help you learn and succeed. Since entrepreneurship greatly influences improving the economy's output of goods and services, creating jobs, and fostering innovation, it is essential for sustained economic progress (Urbano et al. 2020; Davidsson and Gruenhagen, 2020).

Examining the conceptual definition of entrepreneurial failure reveals complexity and variation in the literature. Scholars propose different definitions, including “business closure” (Gimeno et al. 1997; Headd 2003; Watson and Everett 1996) and other definition “a deviation from the expected results” (Cannon and Edmondson 2005; Singh et al. 2007; Ucbasaran et al. 2013). This conceptual ambiguity poses challenges for advancing theoretical understanding, resulting in a dispersion of knowledge on related constructs.

Entrepreneurial learning from failure is a phenomenon which can increase the probabilities of entrepreneur's success in new venture after failure because they use failure as a learning tool "what works and does not work" (Cope 2011; Sarasvathy et al. 2013). Additionally, failing entrepreneurs may benefit from learning in other occupational contexts (Lattacher and Wdowiak 2018). Entrepreneurs can be benefited mostly from rich learning following significant events (Cope 2011). Failure is one of the most critical events that an entrepreneur can confront (Espinoza Benavides and Diaz 2019), the closing of a venture that does not exceed a minimum level for economic viability (Cope 2011; Ucbasaran et al. 2013). When it comes to entrepreneurship, failure is the decision to end a value-creation project once it has not met its goals (Shepherd et al. 2011). Failure refers to a scenario in which an entrepreneur completely leaves and shuts down their business as a result of subpar performance (Cope 2011; Lee et al. 2011). Despite the fact that entrepreneurship is important for the economy and society, failure often occurs and has many reasons (Samuels et al. 2008).

Failure is prevalent in entrepreneurship and offers useful lessons for business owners (Amankwah-Amoah et al. 2022a; b). Entrepreneurial failure and learning study emphasizes the significance of learning above analyzing setbacks (Lattacher and Wdowiak 2020). Personal attributes, contextual factors, and organizational challenges affect how entrepreneurs learn from failure (Wei et al. 2019). Failure helps entrepreneurs adapt, learn from mistakes, and improve their talents, expanding their options (Lattacher and Wdowiak 2020). Practitioners and scholars must understand how entrepreneurs learn from failure. Future study in this area can help us comprehend the complexities of learning after entrepreneurial losses (Cope 2011; Lattacher and Wdowiak 2020).

The Attribution theory (Weiner 1985, 1986) entitlements that besides internal and external attribution of entrepreneurs controllability dimension has received the “smallest amount of research attention” (Harvey et al. 2014). According to Mandl et al. (2016) that post-failure venturing might be better understood by broadening the scope of attributions beyond the external/internal dichotomy. Mandl and colleagues (2016) carried out a qualitative research and highlighted that controllability has positive influence on certain types of entrepreneurs whereas on others entrepreneurs it has no effect. The phenomenon of controllability needs to investigate further. The concept of re-entrepreneurship after failure can be better understood through analyses beyond the locus of causality (Williams et al. 2020).

Entrepreneurs learn from failure, one of the most complex but valuable experiences (Cope 2011). Research on entrepreneurial learning from failure began over 15 years ago (Shepherd 2003) and has grown in recent years (more than half of all studies have appeared in 2015 or later). According to Shepherd (2003), research shows that failure provides learning opportunities but also makes learning difficult.

This domain of research includes studies of the individual's knowledge before failure (Huovinen and Tihula 2008; Politis 2005; Politis and Gabrielsson 2009), personality traits like narcissism (Liu et al. 2019), attributions of failure to specific causes (Eggers and Song 2015; Walsh and Cunningham 2017; Yamakawa et al. 2015), and emotional aspects of failure (e.g., Dias and Teixeira 2017; Fang et al. 2018; Shepherd 2003; Shepherd et al. 2009; Stichter 2020).

Entrepreneurial failure (EF) is a pivotal event that often leads to significant learning for the entrepreneur (Lattacher and Wdowiak 2020; Costa et al. 2023), supporting entrepreneurial learning theory's claim that discontinuity in the entrepreneurial process stimulates higher-level learning for personal and entrepreneurial development (Cope 2011). Knowing how to apply lessons from past failures to future business ventures is crucial for entrepreneurs to make a positive impact (Yamakawa and Cardon 2015; Boso et al. 2019). Lesson learning from failure is influenced by knowledge transfer (Rerup 2005) and temporal proximity (Eggers and Song 2015). This multifaceted understanding of entrepreneurial learning from failure provides crucial insights for entrepreneurship scholars and practitioners.

According to recent study, company owners who are skilled at starting new companies appear to be more productive and successful when starting and running their second and third businesses (Boso et al. 2019; Ucbasaran et al. 2013; Yamakawa et al. 2013). If this is the case, what particular knowledge and skills do these company owners acquire while running their first enterprise, and how do they translate their personal experiences into these knowledge and skills? Given that the relationship between entrepreneurship research and the learning process has not been thoroughly investigated (Ravasi and Turati 2005; Agnedal 1999; Rae and Carswell 2001), it is not surprising that solutions to these and other related issues have largely remained elusive in this field.

This current review provides a broad perspective on ELF to promote research. This study has contributed to ELF. First, bibliometric analysis provides a quantitative and qualitative summary of research in this domain, complementing previous evaluations. Citation analysis was used to identify top journals, prolific authors, and influential papers to help future scholars find the most significant research in core journals. Second, we identify key clusters and links through co-citation analysis to advance entrepreneurial learning from failure. This method helps explain significant issues, themes, and theories by finding literature connections. Our third contribution describes the intellectual framework and growth of ELF research from 2000 to June, 2023. We examine the literature on entrepreneurial learning from failure across two decades and reveal earlier studies that advanced the area. This analysis will also help future researchers build on prior work.

This comprehensive review examines the extensive literature on entrepreneurial learning from failure to explain its theoretical foundation, examine antecedents that affect learning, identify outcomes, and propose a robust research agenda. This review synthesizes and interprets complicated academic information to provide nuanced insights from a comprehensive overview of existing research on failure in entrepreneurial endeavors.

The research topics for the current study's attempt to address the ELF retrospective analysis are outlined below.

RQ1. What is entrepreneurial learning from failure research publication and citation trends?

RQ2. What are the most influential studies published on entrepreneurial learning from failure?

RQ3. What theories were utilized in the area of entrepreneurial learning from failure research?

RQ4. Who are the important contributors in terms of authors and countries?

RQ5. What are antecedents and outcomes employed in entrepreneurial learning from failure study?

RQ6. What are the future research directions in ELF field, based on the literature analysis and synthesis?

Scholars have shown a great deal of interest in the subject of entrepreneurial learning from failure, exploring its theoretical foundations, antecedents, and outcomes. This research has produced valuable insights into how entrepreneurs learn from their mistakes and how this learning informs their later entrepreneurial activities (Shepherd 2003; Ucbasaran et al. 2013). However, despite the growing volume of literature on the topic, there remains a need for a comprehensive review that integrates these findings and identifies gaps for future research. Accordingly, this study aims to address the issue of fragmentation in the literature on ELF. A systematic review methodology is employed to collect and critically evaluate 65 articles from Scopus database.

The paper is structured into five main parts. The first section provides an overview of the theoretical foundations and conceptual understanding of ELF. The next section explains the study's methodology, with a particular focus on the systematic review technique. The third section summarizes the study's process-oriented and theoretically informed findings. Section 4 covered bibliometric analysis. The final section critically evaluates current research, suggests future research, and examines the study's practical implications and limitations.

2 Research methodology

2.1 Review method

A systematic literature review and quantitative bibliometric analysis of published literature examine the phenomenon of entrepreneurial learning from failure. The impact of TCCM has been emphasized by (Paul et al. 2021). The present study uses Moher et al. (2009)'s PRISMA method to discover relevant literature on entrepreneurial learning from failure. Ter Huurne et al. (2017) and Lim and Rasul (2022) show that business literature has extensively used this protocol. The study integrates TCCM into a bibliometric study. Therefore, TCCM was used in a bibliometric study to understand the dominant theories, contexts, characteristics, and methods of entrepreneurial learning from failure from 2000 to June 2023. The study utilizes the relevance of theory in the domain research represented by Paul and Feliciano-Cestero (2021) and Paul et al. (2021) who argued that TCCM is efficient for theme-based review and underlines the impact of TCCM and reviews with theory generation. Therefore, this study used TCCM as a result of earlier propositions on TCCM; this study used TCCM to identify the global used theories and context and insightful variables and methods to balance the research in ELF and for future research directions by identifying gaps through TCCM.

A Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flowchart is shown in Fig. 1 to demonstrate the methodical approach used in the selection of the publications for this investigation. It provides a graphic representation of the

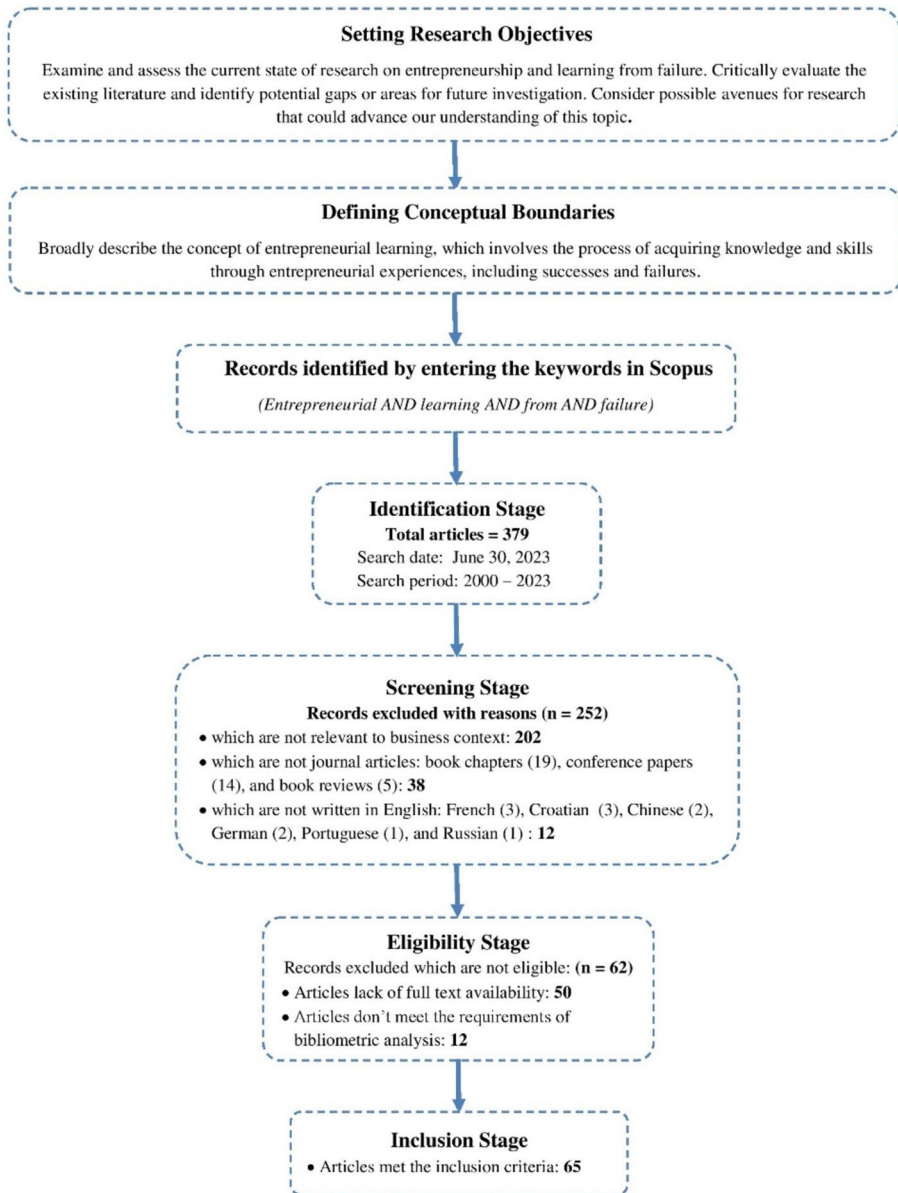


Fig. 1 Flowchart showing the literature search and selection process for bibliometric analysis: PRISMA Protocol (Moher et al. 2009)

identification, screening, eligibility evaluation, and inclusion processes that were carried out to choose articles for analysis by predetermined standards.

Bibliometric analysis is a popular and trustworthy method for assessing and classifying large scientific information libraries (Del Gesso et al. 2024; Mahmood et al. 2023). This approach seeks to comprehend the relationships between references in

academic publications and to offer a thorough synopsis of the most current developments in a field of active or expanding study (Donthu et al. 2021). Bibliometric data is useful to researchers and practitioners since it simplifies the process of understanding the relationships and approaches taken by different topics in the scientific literature (Tsai et al. 2020). The bibliometric analysis makes use of several statistical techniques and bibliographic metadata to evaluate a scientific topic (Asif et al. 2024).

A specialist program called VOSviewer (version 1.6.20) is frequently utilized in bibliometric analysis (Eck and Waltman, 2009; Van Eck and Waltman 2017) and we used it in this investigation for network analysis (Lodhi et al. 2024). The robust spreadsheet program creating tables, structuring data, performing statistical computations, and creating graphs and charts to present study results were all made possible with Microsoft Excel (Asif et al. 2024). We obtained all relevant publications for this investigation from the Scopus database. The goal of gathering this data was to produce a complete and strong dataset that represented the most recent academic advancements in our field of study. A common data source used in most bibliometric analyses is Scopus from Elsevier (Asif and Fazel 2024). Scopus was selected because it has several advantages, such as being the most comprehensive repository of peer-reviewed literature, decreasing the probability that papers will be lost during a search, being easily accessible, having the ability to visualize and analyse data, supporting a variety of file formats for sample downloads, and offering a wide range of data (Abad-Segura et al. 2020).

We performed a systematic literature review (SLR) for this investigation. SLR uses a transparent, scientific, and replicable process (Tranfield et al. 2003). Systematic literature reviews come in a variety of formats, including domain-based, theory-based, method-based, meta-analytical, and meta-systematic reviews (Paul et al. 2021; Paul and Criado 2020). Our methodology is divided into four steps the first involves identification, the second step involves screening, the third step involves eligibility and the last step involves inclusion. The purpose of this methodology is to comprehensively examine the body of literature on entrepreneurial learning from failure within the scope of (entrepreneurial AND learning AND from AND failure) as indexed in the Scopus database.

Identifying pertinent articles for a research project or literature review was performed methodically with the help of the PRISMA flowchart (Fig. 1). The process was refined over multiple stages, starting with 379 articles that were retrieved as of June 30, 2023, from the 2000–2023 timeframe. 262 articles were rejected for a variety of reasons during the screening phase: 202 were thought to be unrelated to the business setting, 38 were not journal articles (book chapters, conference papers, and book reviews), and 12 were not written in English, representing languages like French, Croatian, Chinese, German, Portuguese, and Korean. Table 4 later, 50 more articles were eliminated during the eligibility stage since the full text was not available and 12 articles didn't meet the requirements of SLR and were excluded. Finally, 65 papers were found to be appropriate for additional analysis during the inclusion stage once they satisfied the inclusion criteria (see Table 1). A strong basis for the ensuing phases of the research process is provided by this methodical approach, which guarantees that the final selection of articles is rigorous, pertinent, and in line with the study objectives. A systematic Literature Review is prepared to handle a variety of the available literature and provide an analysis that is both thorough and in-depth (Raghuram et al. 2010).

Table 1 Number of articles included in the review per each journal

Publication name	Number
Journal of small business and enterprise development	4
Academy of management journal	2
Journal of small business management	1
Journal of organizational change management	1
Journal of business venturing	5
International journal of entrepreneurial venturing	1
Organization science	2
International journal of entrepreneurial behavior and research	3
Journal of small business and entrepreneurship	1
International journal of management reviews	1
Journal of small business strategy	1
Frontiers in psychology	3
Group and organization management	1
Autonomous learning in the workplace	1
Entrepreneurship theory and practice	7
Journal of general management	1
Small business economics	4
Asian social science	1
Empirical research in vocational education and training	1
Service industries journal	1
Journal of management and organization	1
Management decision	1
Journal of knowledge management	1
Harvard business review	1
Business horizons	1
Journal of business research	2
The learning organization	1
British journal of management	1
Brazilian journal of management	1
Applied psychology	1
Journal of corporate finance	1
International entrepreneurship and management journal	1
International business management	1
International small business journal	1
Academy of entrepreneurship journal	1
Small enterprise research	1
Entrepreneurship and regional development	1
International journal of innovation science	1
Management learning	1
International journal of learning and intellectual capital	1
Industry and higher education	1
Academy of management review	1
Total	65

2.2 Data description and analysis

2.2.1 Theories

Numerous theories and frameworks can be used to link research on entrepreneurial learning from failure to explain the phenomenon adequately. Theory is a set of conceptions that are rationally linked for which tests can be developed and undertaken empirically (Rudner 1968). This paper refers to theories as a systematic explanation of how relationships have been formed between constructs to make understandable or predictable a certain phenomenon. Theories can be divided into several groups depending on their similarity to the core conceptual structure that is thought to affect the investigated outcomes. Thus, the paper classified the theories under entrepreneurship theories. Table 4 refers to the list of theories that were applied in the previously mentioned studies. Table 4 indicates all theories that we have been able to identify in selected studies. In total, 65 studies employed at least one theory or more theories. Finally, we briefly discuss the most commonly identified theories in the context of ELF.

2.2.2 Characteristics

This section discusses about the characteristics related to the literature on entrepreneurial learning from failure. Therefore, given that, the frequency is more than the overall number of the studies. The characteristics that we “observed” from our literature review are provided in Fig. 2: Furthermore, the present study identified various antecedents and outcomes (independent and dependent variables) related to the individual and organizational level variables of entrepreneurial learning from failure.

2.2.3 Context

Table 8 and Bibliographic coupling network of the field by Countries summarizes the findings related to the contexts (country) in which entrepreneurial learning from failure research was conducted. The total number of studies undertaken in different countries and number of studies with a specific country and most influential countries with number of articles and citations are listed in Table 8.

2.2.4 Methodology

Table 2 presents a summary of findings, this paper reviewed 65 articles in order to get insight into the methods and techniques used in the relationship investigation, the research field was dominated by qualitative approaches, with 24 articles using qualitative research design, 22 quantitative and 19 studies were mix methods.

2.2.5 Most cited articles

The top most cited articles on entrepreneurial learning from failure research are listed in Table 3. The most cited article by Politis (2005) (total citations = 2172; average citation rate per year = 114.3) that focuses on the understanding in theoretical aspects of entrepreneurial learning activity by addressing and integrating existing research into

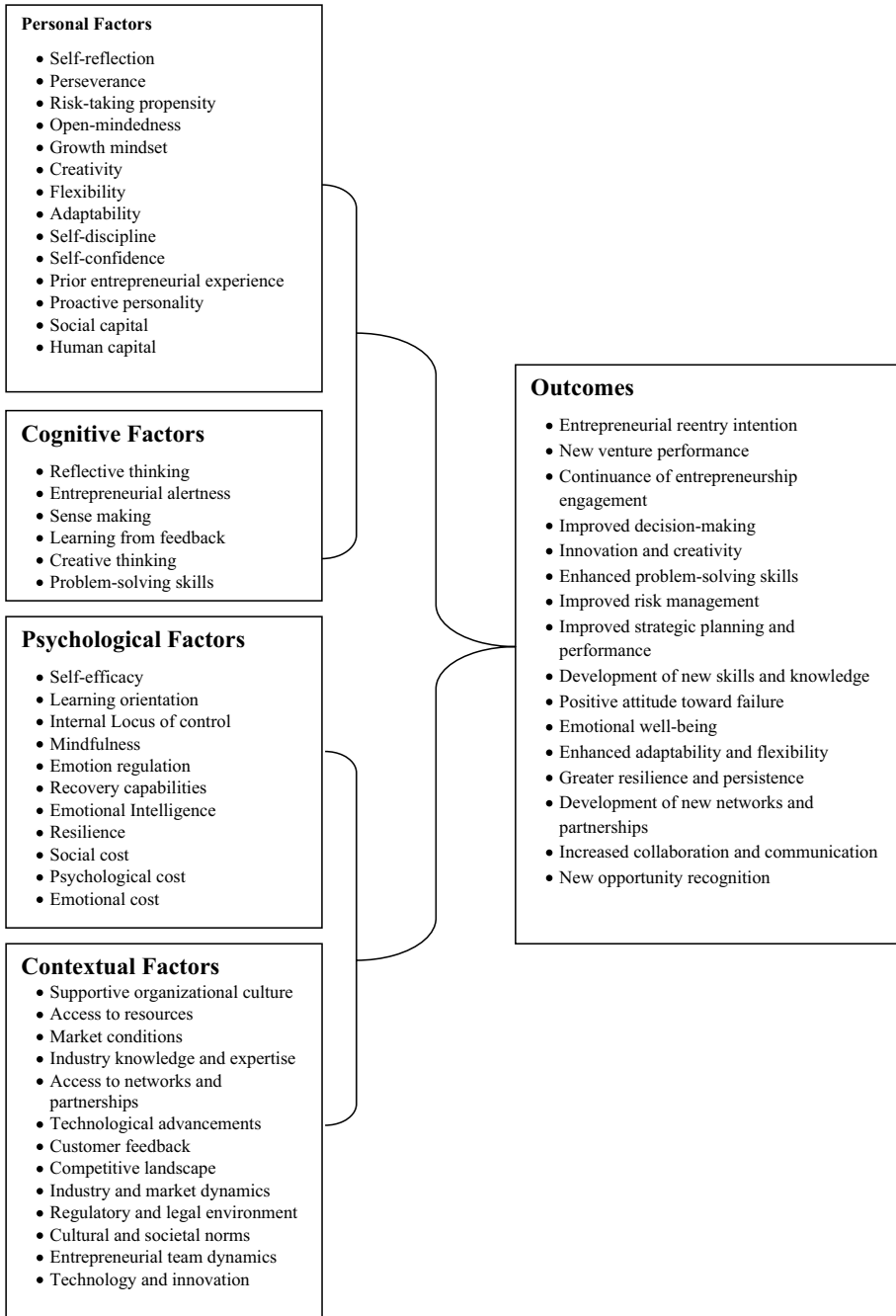


Fig. 2 Antecedents and outcomes of entrepreneurial learning from failure

Table 2 Publications for the literature review

S.no	Title	Author	Year	Journal	Approach	Key related findings
1	Learning from entrepreneurial failure: examining attribution and contextual factors of small- and medium-sized enterprises in Indonesia	Munawaroh et al. (2023)	2023	Journal of Small business and enterprise development	Quantitative	Failure can improve firm success, especially for older, experienced entrepreneurs with non-university education running SMEs outside Java-Bali. Internal causes lead to learning opportunities, while external causes do not
2	A second chance for failed entrepreneurs: a good idea?	Gottschalk and Muller (2022)	2022	Small business economics	Quantitative	Entrepreneurs who have previously failed have a lower chance of success with their new ventures compared to those who are starting out
3	Once bitten, twice shy? on the relationship between entrepreneurs' business failure experience and entrepreneurial collaboration	Amankwah-Amoah et al. (2022a; b)	2022	Journal of business research	Mixed	Some entrepreneurs who experience failure in business are motivated to join forces with other entrepreneurs and become serial entrepreneurs
4	Failure learning orientation, entrepreneurial orientation, and financial performance among U.S. biotechnology firms	Wilson and Perepelkin (2022)	2022	Journal of small business management	Quantitative	Failure learning orientation (FLO) and entrepreneurial orientation (EO) have separate impacts on financial performance (FP) among American biotechnology companies
5	How entrepreneurs' dual narcissism affects new venture growth: the roles of personal initiative and learning from entrepreneurial failure	Wang et al. (2022)	2022	Journal of organizational change management	Quantitative	Narcissistic adoration has a positive impact on new venture growth (NVG) while narcissistic rivalry has a negative effect. Additionally, narcissistic rivalry and admiration are linked through LFEF and their effects on LFEF depend on individual effort

Table 2 (continued)

S.no	Title	Author	Year	Journal	Approach	Key related findings
6	Why can some entrepreneurs restart after businesses failure while others fail for good? – The case of Chinese business owners in Indonesia	Widiawan and barbara Igel	2023	Journal of general management	Mixed	The likelihood of entrepreneurs relaunching their business is influenced by their ability to cope with depression and humiliation. Those who can manage these psychological challenges are more likely to seek out new business opportunities
7	Failure learning and entrepreneurial resilience: the moderating role of firms' knowledge breadth and knowledge depth	Yao et al.	2021	Journal of knowledge management	Quantitative	The study contributes to entrepreneurial resilience by examining learning from failure and knowledge management in entrepreneurship
8	Entrepreneurs' learning from business failures: an emerging market perspective	Amankwah-Amoah et al.	2022	British journal of management	Qualitative	Entrepreneurs start businesses due to financial difficulties and social stigma. Our model has three stages: pre-founding, formation and development, and post-founding outcomes
9	It wasn't me: Entrepreneurial failure attribution and learning from failure	Riar et al.	2021	International journal of entrepreneurial venturing	Qualitative	Attributing failure to external or internal causes affects learning from failure
10	Failing to learn from failure: how optimism impedes entrepreneurial innovation	Amore et al.	2021	Organization science	Quantitative	Entrepreneurs who exhibit low levels of dispositional optimism are more likely to reduce their performance expectations in response to negative feedback
11	The impact of learning from failure on new ventures' sustainable development	Shirshitskaia et al.	2021	Frontiers in psychology	Quantitative	Learning from failure and strategic decision making impact new business sustainability through entrepreneurial dynamic capability

Table 2 (continued)

S.no	Title	Author	Year	Journal	Approach	Key related findings
12	Entrepreneurship resilience: Can psychological traits of entrepreneurial intention support overcoming entrepreneurial failure?	Zhao and Wibowo (2021)	2021	Frontiers in psychology	Quantitative	Self-efficacy and internal control can improve the ability of entrepreneurs to learn from failure and recover
13	Lessons from entrepreneurial failure through vicarious learning	Alvarado Valenzuela et al. (2020)	2020	Journal of small business and entrepreneurship	Qualitative	Vicarious learning about failure in entrepreneurship education can help students learn valuable lessons and foster introspection
14	Comeback of the failed entrepreneur: an integrated view of costs, learning, and residual resources associated with entrepreneurial failure	Jeng and Hung (2019)	2019	Journal of small business strategy	Quantitative	Knowledge gained from failure could be applied during subsequent entrepreneurial endeavors to enable entrepreneurs to achieve greater success in the future
15	How can problems be turned into something good? The role of entrepreneurial learning and error mastery orientation	Funken et al (2020)	2020	Entrepreneurship theory and practice	Quantitative	In terms of entrepreneurial learning and venture progress, error mastery orientation impacts whether problems have good or negative outcomes
16	Business failure and the dimension of entrepreneurial learning: study with entrepreneurs of micro and small-sized enterprises	Dias and Martens (2019)	2019	Brazilian journal of management	Qualitative	The dimension of entrepreneurial learning among entrepreneurs of micro and small-sized businesses who failed and then started new businesses
17	Research on factors affecting the entrepreneurial learning from failure: an interpretive structure model	Wei et al. (2019)	2019	Frontiers in psychology	Qualitative	The study found 15 factors that affect entrepreneurial learning from failure, including self-efficacy, emotion regulation, and cultural sense-making of failure

Table 2 (continued)

S.no	Title	Author	Year	Journal	Approach	Key related findings
18	Do entrepreneurs always benefit from business failure experience?	Boso et al. (2019)	2019	Journal of business research	Quantitative	New ventures' performance is not influenced by prior business failure. Adaptability and learning from experiences is more important for success under circumstances of increased entrepreneurial learning and attention to new business prospects
19	Entrepreneurial learning: what do we mean by it	Nogueira (2019)	2019	The learning organization	Qualitative	EL can be understood as entrepreneurial learning behaviors, including being proactive, exploratory, and collaborative
20	Renascence after post-mortem: the choice of accelerated repeat entrepreneurship	Guerrero and Pena-Legazkue (2019)	2019	Small business economics	Mixed	Entrepreneurs' experiential capital positively impacts their likelihood of returning to entrepreneurship after firm closure, especially during favorable economic cycles and spatial context
21	Bouncing back from failure: entrepreneurial resilience and the internationalization of subsequent ventures created by serial entrepreneurs	Lafuente et al. (2019)	2019	Applied psychology	Mixed	Resilient serial entrepreneurs' international inclination has been affected by prior unsuccessful entrepreneurial experiences
22	Success is good but failure is not so bad either: serial entrepreneurs and venture capital contracting	Nahata (2019)	2019	Journal of corporate finance	Quantitative	Serial entrepreneurs get better financial terms from VCs, including increased board power, less stock dilution, and higher valuations. This applies even if they've failed before, showing the importance of learning for futuresuccess

Table 2 (continued)

S.no	Title	Author	Year	Journal	Approach	Key related findings
23	Emergent learning and change in strategy: empirical study of Chinese serial entrepreneurs with failure experience	Lin et al. (2019)	2019	International entrepreneurship and management journal	Mixed	Chinese serial entrepreneurs who had experienced failure, they made more significant strategic changes in their following forays into entrepreneurship when their emergent learning was more intense
24	The entrepreneurial profile after failure	Espinoza (2019)	2019	International journal of entrepreneurial behavior and research	Quantitative	According to the literature, re-entrepreneurs possess distinct characteristics that enable them to surpass and gain knowledge from their prior business failure
25	Narcissism and learning from entrepreneurial failure	Liu et al. (2019)	2019	Journal of business venturing	Quantitative	Narcissistic entrepreneurs tend to learn less from failure in their following entrepreneurial attempts
26	The effects of business failure experience on successive entrepreneurial engagements: an evolutionary phase model	Amankawah-Amoah et al. (2018)	2018	Group and organization management	Qualitative	Business owners that fail go through four unique phases: grief and despair, transition, formation, and legacy
27	Keep calm and carry on: Emotion regulation in entrepreneurs' learning from failure	Fang He et al. (2018)	2018	entrepreneurship theory and practice	Quantitative	Failure encourages entrepreneurs to learn, but it may also trigger intense emotions that hinder learning
28	The fight is the coach: creating expertise during the fight to avoid entrepreneurial failure	Stambaugh and Mitchell (2018)	2018	International journal of entrepreneurial behaviors and research	Qualitative	Entrepreneurial expertise to efforts to avoid business failure, introducing "emergent practice" to expert performance literature

Table 2 (continued)

S.no	Title	Author	Year	Journal	Approach	Key related findings
29	Entrepreneurial resilience and venture failure	Corner et al. (2017)	2017	International small business journal: researching entrepreneurship	Qualitative	Business owners display resilience by maintaining stability in their operations despite setbacks, which differs from psychological recovery after trauma
30	Regenerative failure and attribution: examining the underlying processes affecting entrepreneurial learning	Walsh and Cunningham (2017)	2017	International journal of entrepreneurial behaviors and research	Qualitative	Four types of failure attributions are identified for regenerative entrepreneurs: internal, external (firm level), external (market level), and hybrid attributions
31	Learning by failure vs learning by habits: Entrepreneurial learning micro-strategies as determinants of the emergence of co-located entrepreneurial networks	Cannavacciuolo et al. (2017)	2017	International journal of entrepreneurial behavior and research	Mixed	Businesses' learning methodologies and partner selection criteria impact the network's topology, as demonstrated by simulation results and comparison with a real-world cluster
32	Learning from entrepreneurial failure: Integrating emotional, motivational, and cognitive factors	Seckler et al. (2017)	2017	Autonomous learning in the workplace	Mixed	Learning through business failure is a common way for entrepreneurs to develop their own knowledge
33	Fail but try again? The effects of age, gender, and multiple-owner experience on failed entrepreneurs' reentry	Bau et al. (2017)	2017	Entrepreneurship theory and practice	Mixed	Following different career stages (early, medium, and late), the age of failed entrepreneurs has a nonlinear relationship with the likelihood of reentering entrepreneurship
34	Making the most of failure experiences: exploring the relationship between business failure and the identification of business opportunities	Mueller and Shepherd (2016)	2016	Entrepreneurship theory and practice	Quantitative	Cognitive conditions under which failure experiences can be used to identify business opportunities

Table 2 (continued)

S.no	Title	Author	Year	Journal	Approach	Key related findings
35	The relationship between social costs, social capital and failure learning on the entrepreneurial restart intention	Quan and Hung (2016)	2016	International business management	Quantitative	This study was carried out to identify the lives of entrepreneurs who had failed, from the moment of bankruptcy to the period of rehabilitation
36	Causal ascriptions and perceived learning from entrepreneurial failure	Yamakawa and Cardon (2015)	2015	Small business economics	Quantitative	Failure attribution will influence perceived learning from failure
37	Dealing with failure: Serial entrepreneurs and the costs of changing industries between ventures	Eggers and Song (2015)	2015	Academy of management journal	Quantitative	Recent interest in serial entrepreneurs has led to investigations into whether learning benefits exist for a prior to post-failure, rather than from a prior to post-successive venture. We broaden this history by adding to it the behavioral traits of attribution and learning from failure, which reveal the different consequences of success relative to failure
38	"Bouncing back" from a loss: entrepreneurial orientation, emotions, and failure narratives	Wolfe and Shepherd (2015)	2015	Entrepreneurship theory and practice	Mixed	According to the study, there is a U-shaped association between performance after a failure and the amount of entrepreneurial orientation (EO) information present in the failure narrative
39	Failed, not finished: A narrative approach to understanding venture failure stigmatization	Singh et al. (2015)	2015	Journal of business venturing	Qualitative	Investigate entrepreneurs' individual experience of stigma associated with business failure

Table 2 (continued)

S.no	Title	Author	Year	Journal	Approach	Key related findings
40	Entrepreneur sense-making of business failure	Heinze (2013)	2013	Small enterprise research	Qualitative	Individual motivations and entrepreneurs' decisions to launch their own enterprises. The study underlines this fact and emphasizes the importance of motivation in the sense-making process
41	A framework for entrepreneurial learning: a tribute to Jason cope	Pittaway and Thorpe (2012)	2012	Entrepreneurship and regional development	Mixed	Three temporal phases of learning from failure are identified by his research as follows: aftermath, recovery, and reemergence
42	A comparative study of entrepreneurs' attitudes to failure in technology ventures	Cotterill (2012)	2012	International journal of innovation science	Qualitative	Entrepreneurs in Silicon Valley, Cambridge, and Munich, California, the United States, and Munich, Germany, all have different attitudes toward failure in early-stage technology ventures
43	Innovation and learning through dialogue in the entrepreneurial networking process	Leskinen (2012)	2012	International journal of learning and intellectual capital	Mixed	According to the research's findings, discourse is essential for ideation, co-creation, and group formation during the entrepreneurial networking process
44	Sense of failure and sense of success among entrepreneurs: the identification and promotion of neglected twin entrepreneurial competencies	Oser and Volery (2012)	2012	Empirical research in vocational education and training	Qualitative	According to the study, businesspeople who have a strong sense of failure also tend to have a high sense of success

Table 2 (continued)

S.no	Title	Author	Year	Journal	Approach	Key related findings
45	Misfortunes or mistakes?: cultural sensemaking of entrepreneurs	Cardon et al. (2011)	2011	Journal of business venturing	Qualitative	This study investigates cultural concept of venture failure through sensemaking, including causality. We examine failures caused by entrepreneurs' mistakes and by external factors
46	Why serial entrepreneurs don't learn from failure	Ucbasaran et al. (2011)	2011	Harvard business review	Quantitative	Instead of learning from their experiences, serial entrepreneurs are just as likely to be overoptimistic after failure as they were before
47	Entrepreneurial learning from failure: an interpretative phenomenological analysis	Cope (2011)	2011	Journal of business Venturing	Qualitative	Entrepreneurs learn from failure and use it for growth. Emotional intensity, social support, and self-reflection influence the learning process
48	Moving forward from project failure: negative emotions, affective commitment, and learning from the experience	Shepherd et al. (2011)	2011	Academy of management journal	Mixed	Using affective commitment to an organization and learning from failure to gauge people's progress after a project fails
49	Enterprising individuals and entrepreneurial learning: a longitudinal case history in the UK tourism sector	Crick (2011)	2011	International journal of entrepreneurial behaviors and research	Qualitative	Entrepreneurs can learn from mistakes but may need support to implement business strategies. Owners and managers turning around a failing business should be aware of the social costs of implementing new initiatives

Table 2 (continued)

S.no	Title	Author	Year	Journal	Approach	Key related findings
50	What is it that entrepreneurs learn from experience?	Martin and smith (2010)	2010	Industry and higher education	Qualitative	The article presents the results of interviews with seasoned and accomplished Scottish businesspeople who have personally contributed to both notable commercial successes and failures
51	The nature of entrepreneurial experience, business failure and comparative optimism	Ucbasaran et al. (2010)	2010	Journal of business venturing	Mixed	The nature of entrepreneurial experience, business failure and comparative optimism
52	The death of an innovative project: how grief recovery enhances learning	Shepherd and Kuratko (2009)	2009	Business horizons	Mixed	Processes of grief recovery are critical for learning from failure in new enterprises. Emotional intelligence is important in the grieving process and can be taught
53	Entrepreneurs' attitudes towards failure: an experiential learning approach	Politis and Gabriellsson (2009)	2009	International Journal of entrepreneurial behavior & research	Quantitative	Previous entrepreneurial experience is related a more positive attitude toward failure
54	Moving forward: balancing the financial and emotional costs of business failure	Shepherd et al. (2009)	2009	Journal of business venturing	Mixed	Business failure can be costly for entrepreneurs. And the more the cost, the more difficult the recovery
55	Entrepreneurial failure and discrimination: lessons for small service firms	Samuels et al. (2008)	2008	Service industries journal	Mixed	The failure rate of minority-owned US businesses has continually been higher than the average failure rate of US enterprises, showing that discrimination may have an influence on these firms

Table 2 (continued)

S.no	Title	Author	Year	Journal	Approach	Key related findings
56	Entrepreneurial learning in the context of portfolio entrepreneurship	Huovinen and Tihula (2008)	2008	International journal of entrepreneurial behavior & research	Mixed	Failing can help develop entrepreneurial skills, allowing individuals to create innovative approaches and manage startups successfully. Past entrepreneurial experience positively impacts forming skilled management teams
57	Does prior start-up experience matter for entrepreneurs' learning?	Politis (2008)	2008	Journal of Small business and enterprise development	Quantitative	Significant differences between seasoned and new business owners in a number of intriguing areas related to the postulated dimensions
58	Coping with entrepreneurial failure	Singh et al. (2007)	2007	Journal of management and organization	Qualitative	Failing entrepreneurs devote more time to coping and learning in their economic lives than in their social, psychological, and physical ones
59	The process of entrepreneurial learning: a conceptual framework	Politis (2005)	2005	Entrepreneurship theory and practice	Qualitative	It is more reasonable to investigate the impact of entrepreneurs' experiences on the creation of relevant information, which influences subsequent new venture performance indirectly
60	Toward a dynamic learning perspective of entrepreneurship	Cope (2005)	2005	Entrepreneurship theory and practice	Mixed	Diverse range of adult, management, and individual learning literatures to construct an integrated framework of entrepreneurial learning

Table 2 (continued)

S.no	Title	Author	Year	Journal	Approach	Key related findings
61	Practical theories from entrepreneurs' stories: discursive approaches to entrepreneurial learning	Rae (2004)	2004	Journal of small business and enterprise development	Qualitative	The study creates practical theories based on the life stories of entrepreneurs interviewed
62	Entrepreneurial learning and critical reflection—discontinuous events as triggers for 'higher-level' learning	Cope (2003)	2003	Management learning	Qualitative	Entrepreneurial learning events result in higher-level learning outcomes that are critical to the entrepreneur in both personal and business terms
63	Learning from business failure: propositions of grief recovery for the self-employed	Shepherd (2003)	2003	Academy of management review	Mixed	The paper delves into two approaches to grieving: loss-oriented and restoration-oriented. One overcomes grief when negative emotions from the loss dissipate
64	Learning by doing – an exploration of experience, critical incidents and reflection in entrepreneurial learning	Cope and Watts (2000)	2000	International journal of entrepreneurial behavior and research	Qualitative	Critical incidents are crucial in entrepreneurial learning as they lead to higher-level outcomes. These incidents are often emotionally charged and result in prolonged and traumatic episodes for businesses
65	Towards a conceptual understanding of entrepreneurial learning	Rae and Carswell (2000)	2000	Journal of small business and enterprise development	Qualitative	This study explores how learning influences entrepreneurial success. It includes interviews with 13 individuals from diverse business backgrounds and focuses on learning for and from success and failure

Table 3 Most cited papers in entrepreneurial learning from failure research

Author and year	Article title	Source title	Total citations	Average citations
Politis (2005)	The process of entrepreneurial learning: a conceptual framework	Entrepreneurship theory and practice	2172	114.3
Shepherd (2003)	Learning from business failure: propositions of grief recovery for the self-employed	Academy of management review	1574	71.5
Cope (2011)	Entrepreneurial learning from failure: an interpretative phenomenological analysis	Journal of business venturing	1644	126.4
Cope and Watts (2000)	Learning by doing—an exploration of experience, critical incidents and reflection in entrepreneurial learning	International journal of entrepreneurial behavior & research	1638	68.32
Ucbasaran et al.(2010)	The nature of entrepreneurial experience, business failure and comparative optimism	Journal of business venturing	890	63.5
Shepherd et al. (2009)	Moving forward: balancing the financial and emotional costs of business failure	Journal of business venturing	708	36.56
Rae and Carswell (2000)	Towards a conceptual understanding of entrepreneurial learning	Journal of small business and enterprise development	684	28.5
Singh et al. (2015)	Failed, not finished: a narrative approach to understanding venture failure stigmatization	Journal of business venturing	330	36.6
Fang He et al. (2018)	Keep calm and carry on: emotion regulation in entrepreneurs' learning from failure	Entrepreneurship theory and practice	174	29
Liu et al. (2019)	Narcissism and learning from entrepreneurial failure	Journal of business venturing	192	38.4
Walsh and Cunningham (2017)	Regenerative failure and attribution: examining the underlying processes affecting entrepreneurial learning	International journal of entrepreneurial behavior & research	116	16.5

a conceptual framework that describes how entrepreneurship learning takes place on an experiential level. The second most cited article by Shepherd (2003) (total citations = 1574; average citation rate per year = 71.5) Psychological literature on grieving suggests that company failure might cause the self-employed experience grief, which hinders learning from the failure. How a dual grief recovery process enhances business failure learning. The third most cited article by Cope (2011) (total citations = 1644; average citation rate per year = 126.4) this study provides a richer understanding of both the process and content sides of learning from venture failure. The study suggests that recovery and re-emergence from failure are effects of unique learning processes conducive to a diversity of high-level gains in human learning. The fourth most cited article by Cope and Watts (2000) (total citations = 1638; average citation rate per year = 68.32) the findings emphasize that incidents are often emotionally charged and result in prolonged and traumatic episodes for businesses. Fifth most cited article by Ucbasaran et al. (2010) (total citations = 890; average citation rate per year = 63.5) acknowledged that Business failure makes entrepreneurs less optimistic than they would have been. Serial entrepreneurs fare similarly well before and after a failure, though with a slightly larger drop in optimism relative to how they felt at the start. These results have three key implications for research and practice on how entrepreneurs design their ventures.

The sixth most cited article by Shepherd et al. (2009) (total citations = 708; average citation rate per year = 36.56) revealed that delaying business failure can increase the financial cost to the owner-manager and the more costly the delay, the more difficult the recovery. Similarly, the next most cited article by Rae and Carswell (2000) (total citations = 684; average citation rate per year = 28.5) emphasized that, how entrepreneurs learn entrepreneurial behavior by conducting life story interviews of successful entrepreneurs to understand the key themes that define their venture creation capabilities. All the other most-cited articles had fewer than 350 citations in Scopus. The articles cover a wide range of ELF research topics, much more on failure stigmatization, Emotion Regulation and Narcissism and learning from entrepreneurial failure.

3 Antecedents and outcomes of (ELF)

Entrepreneurial Learning from failure (ELF) is a complex process that involves various antecedents. These antecedents can yield multiple benefits for individuals, as shown in Fig. 2.

3.1 Personal antecedents of ELF

Personal antecedents are known as stable traits and experiences that shape an individual's propensity of being entrepreneur (Brandstätter 2011). Entrepreneurial failure learning is impacted by a variety of personal factors that determine people's ability to manage and develop from entrepreneurial failures. Self-reflection, perseverance, risk-taking proclivity, open-mindedness, growth mindset, creativity, flexibility, adaptability, passion, self-discipline, self-confidence, openness to new experiences, prior entrepreneurial experience, and a proactive personality are examples of personal antecedents. Dweck (2006), Martin (2010), Sarasvathy (2001), and Zhao et al. (2011) have all underlined the importance of these human characteristics in supporting entrepreneurial learning from failure. Self-reflection allows for critical examination of failures and subsequent learning (Shepherd et al.

2011). Failure can also be viewed as a learning experience (Ucbasaran et al. 2013) and opportunity for the entrepreneur to gain human capital such as knowledge or experience (Quan and Huy 2014). Furthermore, the proclivity for risk-taking helps entrepreneurs to view failure as a learning opportunity (Zhang and Cueto 2017). Personal antecedents affect how people learn, adapt, and develop from business failure, improving their entrepreneurial competence and success.

3.2 Cognitive factors of ELF

Cognitive variables influence how entrepreneurs learn from failure by absorbing and interpreting their experiences. Cognitive variables are learning-supporting functions and talents. Cognition involves metacognition, or self-awareness. Metacognition allows entrepreneurs to reflect on their mistakes, identify causes, and improve (Mitchell et al. 2014). Cognitive flexibility—the ability to change perspectives and adapt to changing situations—allows entrepreneurs to see mistakes as learning and innovation opportunities (Zhang and Cueto 2017). Failure learning also requires processing and comprehension. Entrepreneurs must adequately collect and analyze their failures to understand events and guide future actions (Mitchell et al. 2014). Heuristics and cognitive biases affect learning, too. Confirmation bias and overconfidence can make it hard for entrepreneurs to analyze their mistakes and learn from them (Simons et al. 2016). Understand and use these cognitive characteristics to help entrepreneurs learn from failure, develop, and improve future ventures.

3.3 Psychological factors of ELF

Psychological factors refer to internal cognitive and emotional processes that effect decision-making, resilience, and overall mental health (Patzelt and Shepherd 2011). Psychological factors, which are crucial for ELF, affect how entrepreneurs handle setbacks and failures. A learning orientation, self-efficacy beliefs, attribution processes, and self-regulation are these elements. According to Heider (1958), Kelley (1967), and Weiner (1972), attribution processes entail assessing and determining failure causes. If entrepreneurs attribute failures to external sources or regard them as brief and particular, they are more inclined to adjust and continue (Jones and Nisbett 1987). Based on Bandura's social cognitive theory (1986), self-efficacy beliefs affect entrepreneurs' self-assurance in their capacity to learn from failure and overcome setbacks. High self-efficacy among entrepreneurs increases their likelihood of viewing failure as a teaching opportunity and displaying perseverance in the face of difficulties (Bandura 1997). For example, research has demonstrated that resilience enables entrepreneurs to recover from failure (Cardon et al. 2011). Setting objectives, tracking progress, and modifying techniques in reaction to failure are all aspects of self-regulation, which is based on the action regulation theory (Gollwitzer 1990; Carver and Scheier, 1998). Entrepreneurs who can control their behaviors and emotions are better able to adjust their strategies after loss (Bandura 2006). Emotional intelligence assists in managing and learning from setbacks (Bar-On 1997).

Finally, organizational learning theory (Argyris and Schön 1997; Senge 1990) and emotional events theory (Weiss and Cropanzano 1996) emphasize the need of a supportive environment in establishing a learning orientation. If they prioritize learning, encourage a growth attitude, and provide psychological stability, entrepreneurs are more likely to see

failure as an opportunity to improve (Edmondson 1999). Understanding and using these psychological factors can help entrepreneurs learn from failure and succeed.

3.4 Contextual antecedents of ELF

Entrepreneurs learn from failure based on personal attributes and context. Industrial characteristics, institutional assistance, and cultural norms affect learning and results following failure (Shepherd et al. 2011; Ucbasaran et al. 2003). Industry-specific possibilities and constraints might affect learning after failure. Entrepreneurs in fast-changing, technologically advanced businesses must adapt quickly and learn from mistakes (Koporcic et al. 2024). In contrast, employees in established sectors with rigid procedures and norms may struggle to learn from mistakes due to unwillingness to change and fear of breaking with tradition (Shepherd et al. 2011). Government rules, restrictions, and support networks can greatly affect learning after failure. Supportive organizations offer resources, mentoring, and networks for learning and failure recovery (Cannon and Edmondson 2005).

Failure is part of entrepreneurship. However, institutions with poor support or high failure consequences may inhibit risk-taking and learning (Ucbasaran et al. 2003). Cultural norms and beliefs can affect how entrepreneurs view and learn from failure. Cultural effects can stigmatize or foster failure resilience, say Shepherd et al. (2011). Entrepreneurs are expected to learn from failure in various societies. This mindset promotes resilience and learning from mistakes (Shane and Venkataraman 2000). Entrepreneurs may struggle to grow in societies that stigmatize failure (Shepherd et al. 2011). These contextual aspects are essential to understanding how entrepreneurs learn from failure and how their learning outcomes are molded. Researchers and practitioners can determine what promotes or hinders entrepreneurial learning from failure by evaluating industrial, institutional, and cultural factors. This expertise can inform legislative, educational, and other support systems to help entrepreneurs prosper following failure.

3.5 Outcomes of ELF

Entrepreneurial learning from failure (ELF) produces many benefits for entrepreneurs. Failure helps entrepreneurs improve their decision-making, inventiveness, problem-solving, and risk management (Townsend and Hunt 2019; Yagnik and Chandra 2019). The strategy increases interpersonal skills, self-awareness, and strategic planning, improving performance and outcomes (Shepherd and Patzelt 2017; Vanevenhoven and Liguori 2013). It boosts motivation, confidence, and a positive outlook on failure, helping entrepreneurs overcome challenges, maintain emotional well-being, and feel more in control and empowered (Hernández-Linares and López-Fernández 2018; Shepherd and Patzelt 2017). The development of new skills, knowledge, and networks, as well as adaptation, flexibility, and resilience in the face of adversity, are also promoted by entrepreneurial failure learning. Through cooperation, communication, and partnerships, this learning process fosters future achievement creativity and reentry intention (Hsu et al. 2017; Shepherd and Patzelt 2017; Vanevenhoven and Liguori 2013). Ultimately, entrepreneurial learning from failure helps entrepreneurs overcome obstacles, seize opportunities, and succeed long-term (Hernández-Linares and López-Fernández 2018; Vanevenhoven and Liguori 2013).

4 Analysis and findings

4.1 Methodical description of the field

Figure 3 outlines the various fields in which articles are published on Entrepreneurial Learning from Failure. ELF research includes psychology, social sciences, and economics; however, this review categorizes papers by subject to better characterize the field. These books are 48.1% "Business Management," a big category. ELF research is also common in "Social Sciences" (20.7%), "Economics" (16.7%), and "Engineering" (3.7%). However, ELF research also covers "Arts and Humanities" (2.2%) and "Psychology" (1.9%). ELF studies can also be found in specialist subjects including "Energy" (1.1%), "Computer Science" (0.7%), and others not expressly characterized in this analysis.

4.1.1 Publication trends

The total number of papers that were published between 2000 and 2023 is shown in the graph. According to the graph, the first ELF study was published in 2000. The number of studies published increased gradually over time with some variance. 2009 saw a decline followed by a large gain. The initial time period was 23 years (from 2000 to June 2023), and the following period. According to recent statistics, there have been more papers written over time.

The above table shows the concept of entrepreneurial learning from failure can be explained using several theories that each provide unique insights into how entrepreneurs can learn, adapt, and evolve through their experiences of setbacks and failures. Entrepreneurial learning is a multifaceted process that is shaped by various aspects, such as the personal traits of the entrepreneur, the entrepreneurial environment, and the learning process itself. According to the theory of experiential learning, individuals acquire knowledge most effectively by engaging in firsthand experiences, and this principle holds especially true for entrepreneurs. According to social cognitive theory, individuals acquire knowledge by seeing and replicating the actions of others. As a result, entrepreneurs have the opportunity to gain insights and knowledge from accomplished entrepreneurs. Entrepreneurial learning theory offers a thorough framework for comprehending the process by which entrepreneurs acquire knowledge, while effectuation theory proposes that entrepreneurs acquire knowledge through practical experience and by adjusting their strategies in response to evolving situations.

The application of organizational learning theory and dynamic capability theory can provide insights into the process by which entrepreneurial enterprises acquire knowledge and adjust their strategies in response to changing circumstances. The application of resource-based perspective theory and institutional theory can provide insights into the development and utilization of resources by entrepreneurial enterprises to establish and maintain a competitive advantage. The application of social identity theory enables us to comprehend the impact of entrepreneurs' affiliation with entrepreneurial organizations on their self-esteem and drive. In conclusion, the theories presented in Table 4 offer a valuable perspective for comprehending entrepreneurial learning and its potential for improvement. Through comprehension of these theories, entrepreneurs can cultivate more efficient learning processes and establish more prosperous ventures. Entrepreneurial learning is shaped by the entrepreneur, the surrounding context, and the learning process. Experiential and

Documents by subject area

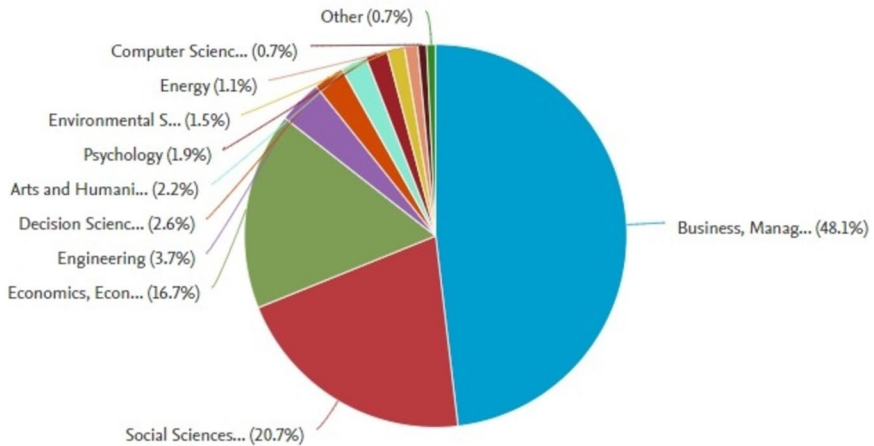


Fig. 3 Visualization of most common areas in research on ELF

Table 4 Theories used in literature review

S.no	Theories	Authors
1	Attribution theory	Fritz Heider (1958), Harold Kelley (1967), Bernard Weiner (1972),
2	Entrepreneurial learning theory	David Kolb (1984)
3	Social cognitive theory	Albert Bandura (1986)
4	Action regulation theory	Peter Gollwitzer (1990)
5	Affective events theory	Howard M. Weiss and Russell Cropanzano (1996)
6	Institutional theory	Paul J. DiMaggio and Walter W. Powell (1983)
7	Resource based view theory	Edith Penrose (1959), Jay B. Barney (1986)
8	Organizational learning Theory	Chris Argyris and Donald Schön (1997)
9	Social identity theory	Henri Tajfel and John Turner (1979), Michael Hogg (2016),
10	Self determination theory	Deci and Richard Ryan (2012)
11	Dynamic capability theory	David Teece (1997)
12	Knowledge management theory	Ikujiro Nonaka (2009)
13	Goal orientation theory	Dweck (1986)
14	Vicarious learning theory	Albert Bandura (1963)
15	Narcissism theory	Sigmund Freud (1914)
16	Emotion regulation theory	James J. Gross (1998)
17	Social capital theory	Pierre Bourdieu (1986)
18	Theory of planned behavior	Icek Ajzen (1991)
19	Entrepreneurial orientation theory	Danny Miller (2011)
20	Social learning theory	Albert Bandura (1977)
21	Theory of human capital	Gary Becker (1962)
22	Grief recovery theory	John W. James and Russell Friedman (2009)
23	Effectuation theory	Saras Sarasvathy (2001)

social cognitive theories propose that entrepreneurs acquire knowledge most effectively through practical experience and seeing and emulating others. Entrepreneurial learning theory and effectuation theory offer conceptual frameworks for comprehending the learning process of entrepreneurs. Additionally, organizational learning theory, dynamic capability theory, resource-based view theory, institutional theory, and social identity theory can be employed to analyze how entrepreneurial ventures acquire knowledge and adjust to changes.

5 Analysis and results

5.1 Bibliographic coupling

Bibliometric research uses bibliographic coupling to find relationships between documents by comparing their citations. The idea is that two texts that reference a third document are likely related in topic. The bibliographic coupling strength between two documents is quantified by the quantity of citations they have in common (Kessler 1963).

5.1.1 Bibliographic coupling network of the field by articles

In total, 65 publications with at least ten citations each were used in the study. All of these articles were evaluated with the hope that the results would help readers better understand the fundamentals of the ELF field of study. Having total link strength of 585 with links across all five clusters. The circle is meant to represent significant research and researchers in the field.

5.1.2 Bibliographic coupling network of the field by Authors

379 papers published between 2000 and up to June 2023 contained an average of 300 affiliated authors, according to research on bibliographic coupling of academics in the ELF area. The need that the author has at least five articles with a minimum of ten citations. Leading authors are shown in the figure along with their total number of publications, references, and link popularity. The two authors who deserve the most attention are Shepherd and Cardon. Notably, these top authors also have the strongest overall link profiles.

The bar chart displays the frequency of papers categorized by author in the domain of ELF. The frequency of documents authored in the topic of ELF differs among different authors. Dean A. Shepherd holds the record for the highest number of publications in this discipline, with a total of 10 documents. Both Michael S. Cardon and Kevin Pavlovich have each published a total of 6 documents in this particular topic. Shiva Singh has each published three documents in this particular field. All the other authors have published less than 5 documents in this particular field.

5.1.3 Co-citation and cluster analysis

The study examined co-occurrence with keyword in Scopus database of 65 articles to figure which word commonly appears among them. A wide variety phrases were strategically integrated to answer the question (RQ6). This network analysis incorporating VOSviewer and its VOS visualized map is the very technique that helps to detect such things as new

directions for research or a collection of themes (Van Eck, and Waltman 2017). In this study minimum threshold of 3 keywords to be considered as being frequent in the text were considered. The results in Fig. 8 explain in detail the co-occurrence between the term and the data sample set. Ranking the 51 keyword, among 335 others, that exceeded this threshold, highlighted their significance and frequently occurrence. As mentioned in Fig. 6 keywords consist of co-occurrence were classified into three main clusters that correspond to the different colors (Red, green or blue). Table 5 present Clusters 1" (Red in Fig. 8), which focuses on the theme of "Entrepreneurial Process and Failure". The words "entrepreneurial learning," "entrepreneur," "experiential learning," and "entrepreneurship experience" as the key terms show an emphasis on the way learners acquire, practice, and apply knowledge and skills of becoming an entrepreneur. Business owners have to acquire a deep understanding of how a business operates be flexible so as to learn from both the successes and failures and ultimately incorporate all experiences as the basis of their future business engagement. The word cloud gives the words like 'failed', 'recovery', 'entrepreneurial resilience' and 'negative emotions' in the blue part of it. This shows that the theme can be failure, and then followed by its recovery or some kind of entrepreneurial resilience that can deal with negative emotions. It accentuates the function of creating resilience for entrepreneurs following setbacks, coping with emotions and committing prominently to their entrepreneurial objectives (Table 5).

Table 6 represent Cluster 2 (Green in Fig. 8) which focuses on the term "Entrepreneurial Learning and Experience" process and the experiences of entrepreneurship,

Table 5 Entrepreneurial process and failure

Rank	Keywords	Occurrences	Links	Total link strength
1	Entrepreneurship	14	20	30
2	Entrepreneurial failure	6	7	8
3	Learning from failure	5	6	7
4	Innovation	4	8	10
5	Business failure	3	2	3
6	Corporate entrepreneurship	3	4	4
7	Organizational learning	3	8	8
8	Performance	3	3	3
9	Attribution	2	5	6
10	Commerce	2	4	6
11	Engineering education	2	4	5
12	Entrepreneurs	2	3	3
13	Experiential learning theory	2	2	2
14	Intrapreneurship	2	3	3
15	Leadership	2	5	6
16	Learning systems	2	4	6
17	Mentoring	2	5	6
18	Network	2	5	7
19	Networks	2	4	4
20	Opportunity identification	2	3	3
21	Serial entrepreneurship	2	1	1
22	Start-ups	2	6	6

Table 6 Entrepreneurial learning and experience

	Keywords	Occurrences	Links	Total link strength
1	Entrepreneurial learning	16	27	37
2	Experience	4	6	7
3	Experiential learning	4	6	6
4	Human capital	4	6	10
5	Entrepreneurship education	3	7	7
6	Action learning	2	5	6
7	Business failures	2	3	3
8	Entrepreneurial experience	2	2	2
9	Entrepreneurial intention	2	4	8
10	Entrepreneurial mindset	2	2	2
11	Entrepreneurial self-efficacy	2	4	4
12	Entrepreneurialism	2	2	2
13	Entrepreneurship failure	2	4	8
14	Entrepreneurship restart intention	2	4	8
15	Grief recovery	2	3	5
16	Higher education	2	6	6
17	Venture failure	2	3	5
18	Vicarious learning	2	2	2

which include the discovery of interesting ideas, the process of turn ideas into products, services or non-profit organization and lasts the whole cycle of entrepreneurial activities. The words "entrepreneurial learning," "entrepreneur," "experiential learning," and "entrepreneurship experience" as the key terms show an emphasis on the way learners acquire, practice, and apply knowledge and skills of becoming an entrepreneur. Business owners have to acquire a deep understanding of how a business operates be flexible so as to learn from both the successes and failures and ultimately incorporate all experiences as the basis of their future business engagement. The word cloud gives the words like 'failed', 'recovery', 'entrepreneurial resilience' and 'negative emotions' in the blue part of it. This shows that the theme can be failure, and then followed by its recovery or some kind of entrepreneurial resilience that can deal with negative emotions. It accentuates the function of creating resilience for entrepreneurs following setbacks, coping with emotions and committing prominently to their entrepreneurial objectives.

Table 7 illustrates the cluster 3 (Blue in Fig. 8), which includes terms such as "failure," "recovery," "entrepreneurial resilience," and "negative emotions." This focus seems to be the impact of challenges and setbacks in entrepreneurship. The processes of entrepreneurs' recovery to learn from failures, manage negative emotions, and keep their commitment to entrepreneurial endeavors. This cluster can focus on the process and the experiences of being in entrepreneurship. This can be seen in the key terms "entrepreneurial learning," "entrepreneurs," "experiential learning," and "entrepreneurial experience," that is, the concepts regarding what entrepreneurs do to acquire knowledge and skills. For example, they may learn the ins and outs of managing a business, learn lessons from failures as well as successes, and take lessons to reflect on their learning in future business activities.

Table 7 Resilience and recovery

	Keywords	Occurrences	Links	Total link strength
1	Learning	14	19	41
2	Failure	10	16	34
3	Entrepreneur	7	12	28
4	Commitment	4	7	19
5	Recovery	4	7	20
6	Entrepreneurial resilience	3	2	2
7	Learning orientation	3	5	6
8	Negative emotions	3	6	18
9	Passion	3	6	18
10	Entrepreneurial Orientation	2	4	5
11	SMES	2	2	2

Table 8 Top 20 countries (Citations, Articles)

S.NO	Country	Documents	Citation
1	United States	43	3304
2	United Kingdom	24	1342
3	China	14	206
4	Germany	10	271
5	France	6	586
6	Sweden	8	1132
7	Australia	4	439
8	Canada	8	956
9	Belgium	4	81
10	Denmark	4	174
11	Finland	5	87
12	Spain	3	93
13	New Zealand	6	369
14	United Arab Emirates	4	34
15	Netherlands	4	137
16	South Africa	7	44
17	Viet Nam	4	20
18	India	5	22
19	Indonesia	3	15
20	Malaysia	4	14

5.1.4 Bibliographic coupling network of the field by countries

5.1.4.1 Most influential countries The Table 8 comprehensively evaluates the top 20 countries in the field of ELF. This ranking used bibliometric software like VOSViewer to collect and analyze data. The US leads the list with 43 documents and 3,304 citations, demonstrating its significant impact on this research. The UK has 24 documents and 1,342 citations, indicating a strong research ecosystem. China ranks third with 14 documents and 206 cita-

tions, demonstrating its entrepreneurial learning efforts. The table above shows the global importance of this idea and how different nations have contributed to understanding how businesses can learn from their mistakes and adapt to changing situations. Creating robust and innovative entrepreneurial environments requires this capacity.

5.1.5 Document by country or territory

The bar chart shows entrepreneurial learning from failure publications by country or region. America publishes the most documents, followed by the UK, China, Germany, and Sweden. Australia, South Africa, Canada, France, and India publish several papers. The bar chart shows global interest in entrepreneurial learning from failure in addition to the above aspects. This topic has been published worldwide, suggesting its global relevance to entrepreneurs and scholars.

5.1.6 Visualization network of the ELF field co-citation analysis

Journals that published publications on ELF from their inception to the present have been analyzed to do bibliometric analysis by source. One source article and a minimum of 10 citations for each article were taken into consideration throughout the inquiry phase in VOS viewer. As a result, 30 journals reported the most significant number of relevant publications. It shows that the size of circles for well-known journals is often consistent across clusters. Other journals with a lower proportion of circles are indicative of a weaker extent of penetration of the research of ELF into other disciplines.

6 Discussion

The data analyzed in this part addressed the research questions from Sect. 1, where the findings from Sect. 3 and the results from Sect. 4 answered that through bibliometric analysis, 65 articles from Scopus database examined using VOSviewer. RQ1: What is entrepreneurial learning from failure research publication and citation trends? We examined the publication pattern of entrepreneurial learning from failure based on total publications (i.e., frequency as per year, country, and journal name), contributing author. The data for this analysis was computed from the bibliographic data collected from Scopus database. year-to-year amount of scientific research on the antecedents of entrepreneurial learning from failure and articles publications for the literature review shows in Table 2 and Fig. 4 show publication trend document by year (from 2000 to June 2023).

RQ2: What are the most influential studies published on entrepreneurial learning from failure? To answer this we considered the citation networks of 65 articles. While there are a numerous methods available for measuring the impact and influence of a research publication, citation analysis remains one of the most popular (Ding and Cronin 2011). Citation and referencing it enable to find the source of idea (Appio et al. 2014). The most influential studies published in the domain of ELF is displayed in Table 3 and Fig. 5 presents a VOSviewer network visualization of co-citation analysis, highlighting influential authors and their interconnectedness. Furthermore, Scopus database result Fig. 7 document by author highlighted, 10 most influential researchers on a topic subject to entrepreneurial learning from failure.

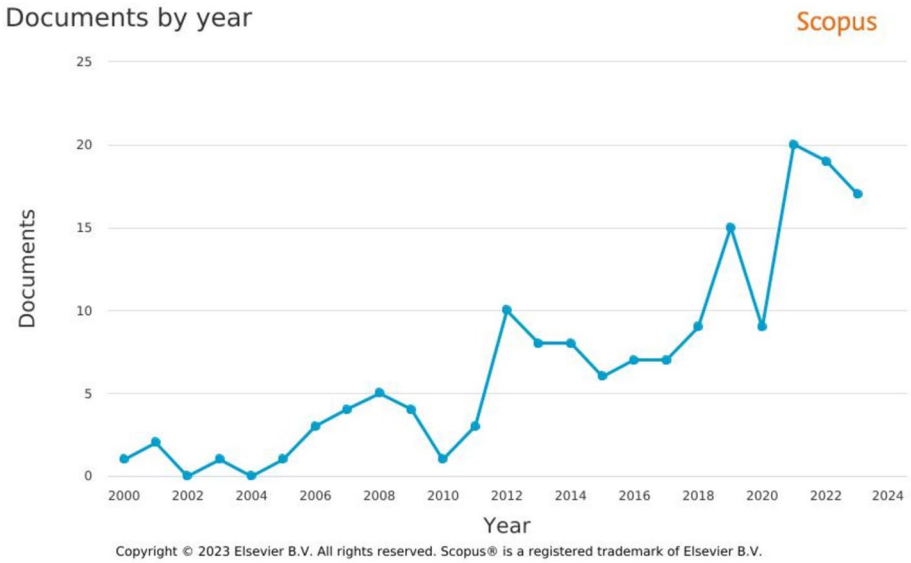


Fig. 4 Number of papers published from 2000 to 2023

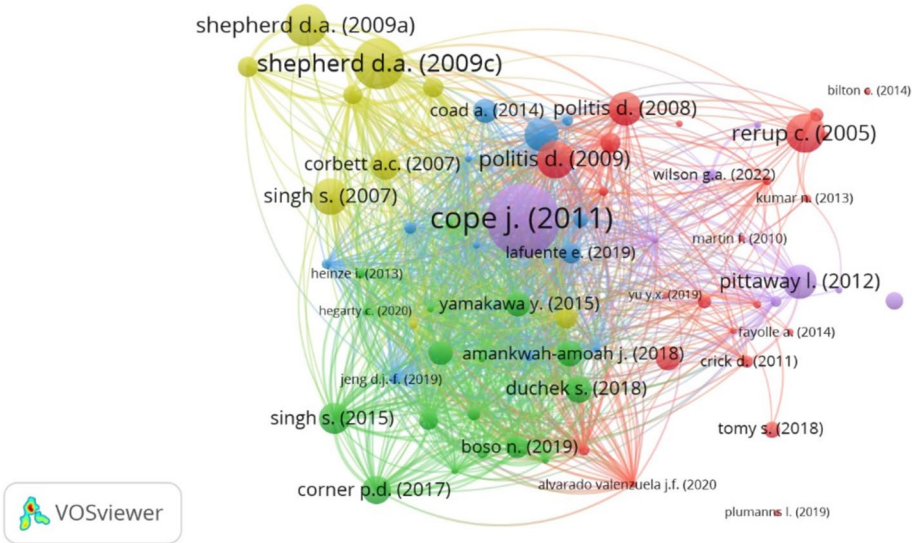


Fig. 5 Co-citation analysis of authors

RQ3: What theories were utilized in the area of entrepreneurial learning from failure research? In terms of the research question concerning the theories utilized in entrepreneurial learning from failure, a bibliometric analysis employing TCCM (Theories, Contexts, Characteristics and Methodology) framework demonstrates that predominant

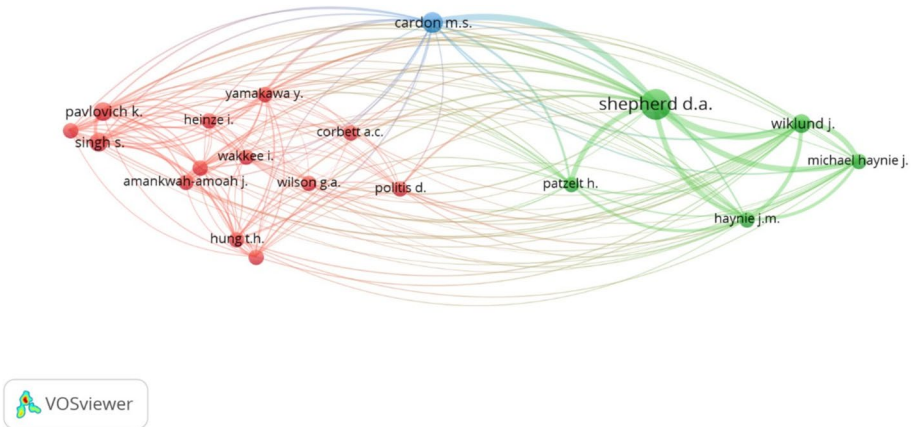


Fig. 6 Bibliographic coupling analysis of Authors

Documents by author

Scopus

Compare the document counts for up to 15 authors.

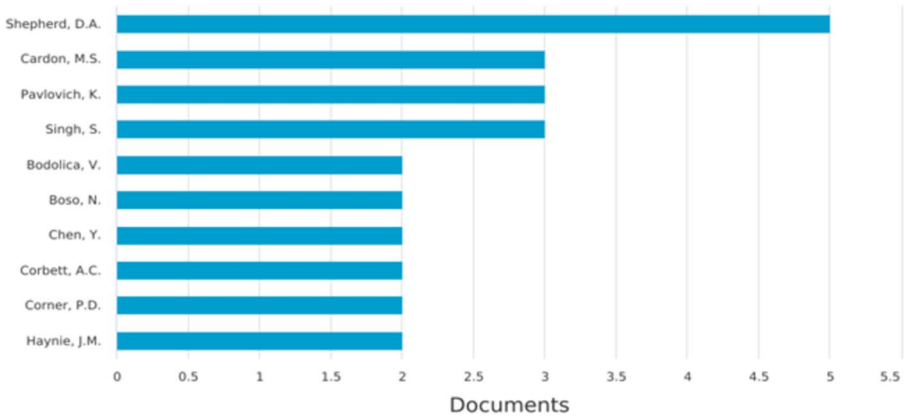


Fig. 7 Number of Documents Published by Authors

key theories have been applied to examine this concept. Table 4 shows theories used in literature ELF review.

RQ4: Who are the important contributors in terms of authors, and countries? We examined the current state of collaborations so far and rank authors on entrepreneurial learning from failure. In scientific research, the most formal way to associate intellectually is collaboration with scholars (Cisneros et al. 2018). The section below examines the amount of collaboration between scholars and highlights leading authors in a network of cooperation among them. As Figs. 6–8 highlight important researchers in the field of ELF. Moreover, Fig. 8 illustrates a co-citation and cluster analysis of entrepreneurship research, highlighting clusters and their interconnections based on keyword co-occurrence. Table 8 shows top 20 countries by documents and citations in this table US leads the list with 43 documents and 3,304 citations, demonstrating its significant impact on this research. The UK has 24

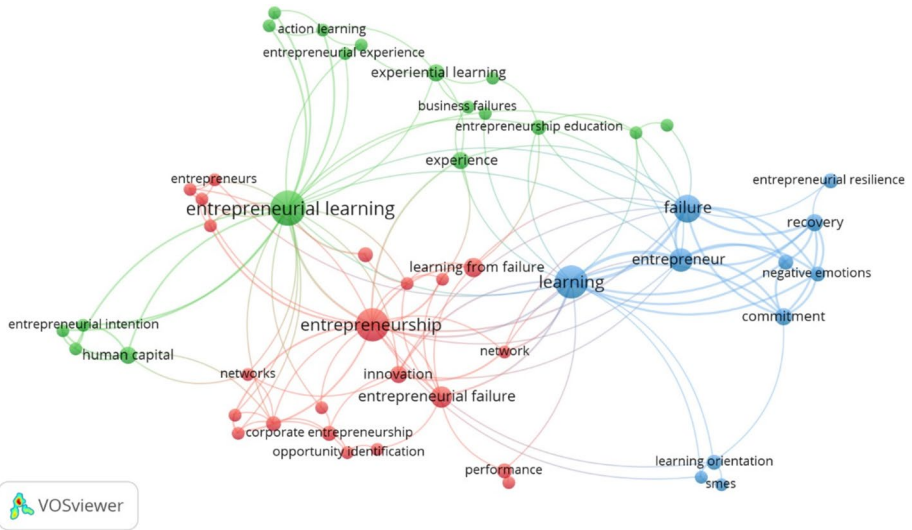


Fig. 8 Co-occurrence of keywords analysis

documents and 1,342 citations, indicating a strong research ecosystem. China ranks third with 14 documents and 206 citations, demonstrating its entrepreneurial learning efforts. Figure 9 and 10 list the top countries for research on ELF, Scopus database result graph (Fig. 10) document by country highlighted 10 most influential countries on a topic subject

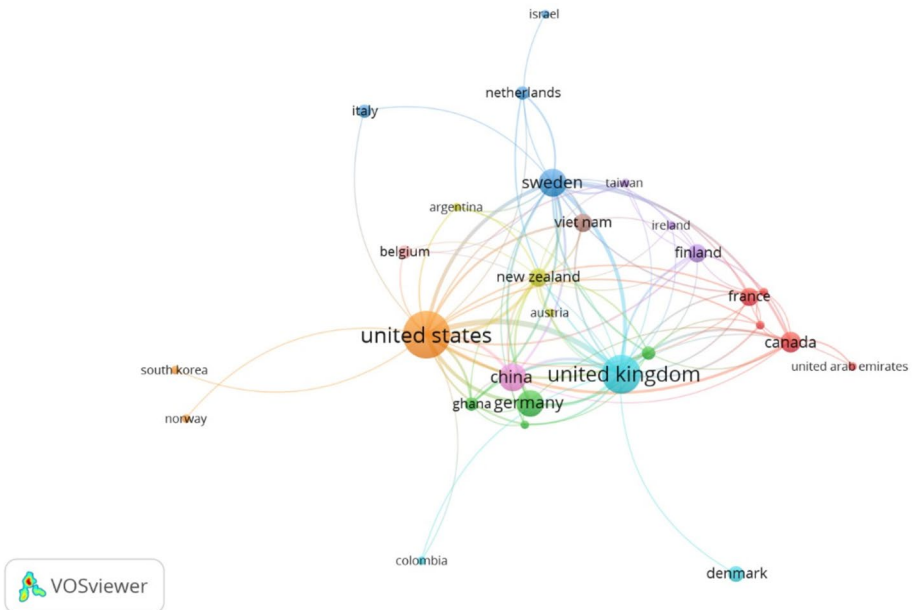


Fig. 9 Emerging countries on ELF (VOSviewer visualization)

Documents by country or territory

Compare the document counts for up to 15 countries/territories.

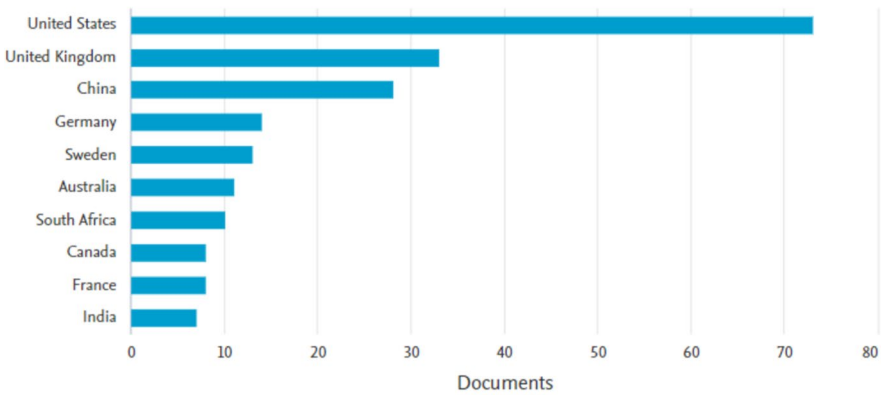


Fig. 10 Emerging countries on ELF (Scopus database)

to entrepreneurial learning from failure. Moreover, Fig. 11 presents a visualization of cluster density, offering insights into the interconnectedness and collaborative networks within this field of study.

RQ5: What are antecedents and outcomes employed in entrepreneurial learning from failure study? To address this question, first we conducted a comprehensive search of Scopus database to explore the antecedents and outcome related to entrepreneurial

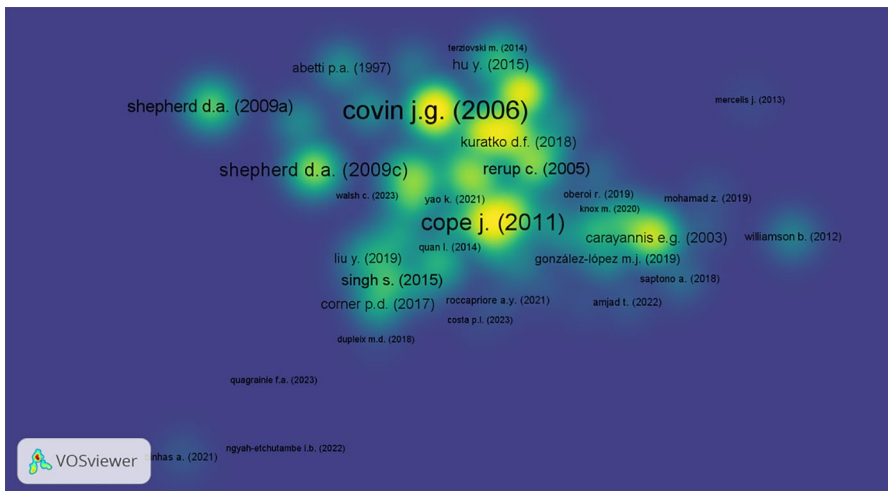


Fig. 11 Cluster density visualization of bibliographic coupling

learning from failure through relevant keywords. Methods in selecting articles, we applied strict inclusion and an exclusion criterion to emphasize peer-reviewed research from the last two decades that theorizes which factors lead to ELF (antecedents) and clarifies how these mechanisms affect outcomes/effects in multiple settings. The results are presented according to the included studies, first on a geographical distribution of publications followed by publication trends and research methodology. We then identified several key antecedents of ELF broader categories personal and psychological factors, cognitive and contextual factors. The outcomes of ELF were categorized into positive impacts, such as new venture performance, improved decision-making and entrepreneurial reentry intention. Overall, the review suggests that while failure learning can drive significant individual and organizational benefits, the antecedents and context play crucial roles in determining these outcomes. Figure 2 discussed about the antecedents and outcomes were identified in 65 articles. RQ6. What are the future research directions in ELF field, based on the literature analysis and synthesis? Future research directions were provided in the last section of the paper.

6.1 Avenues for future research

Entrepreneurial Learning from Failure offers several opportunities for growth. Future research might first enhance and expand the theoretical foundations and frameworks that underpin our understanding of entrepreneurial learning through failure. To gain a broader perspective, psychology, management, and entrepreneurship studies are used. Further research is needed to understand entrepreneurial failure learning. Understanding human attributes, organisational contexts, and cultural variables that affect entrepreneurs' desire and ability to learn from failure can help explain entrepreneurial decision-making. Scholars can also examine how entrepreneurial learning from failure affects success, innovation, and entrepreneurial ecosystems. This research can illuminate the wider effects of learning from failure on individuals and the entrepreneurial ecosystem. Cognitive and emotional aspects of failure learning need further investigation. Failure, emotional management, and actionable insights can help entrepreneurs learn. Context matters when studying how industry, firm size, and market conditions affect entrepreneurial learning from failure.

Research on programs to assist aspiring and experienced entrepreneurs learn from failure is encouraging. Cross-cultural research can also show how cultural differences affect entrepreneurial learning from failure across countries. Future study might examine how digital platforms, online communities, and social media affect entrepreneurial failure learning. Government restrictions, support networks, and entrepreneurial ecosystems affect entrepreneurs' risk-taking and failure-learning, which scholars can research.

A new discipline of entrepreneurial learning from failure, sustainability, and social entrepreneurship deserves attention. Researchers can use this learning process to complicated social issues and promote sustainable and socially responsible entrepreneurship. Over time, longitudinal research on entrepreneurial learning from failure might reveal changes in entrepreneurs' behaviour and attitudes. Standardising measuring and assessment methodologies will also enable more rigorous empirical study in this subject. Finally, meta-analyses and systematic reviews help consolidate material, uncover patterns, gaps, and research objectives in the ever-changing subject of entrepreneurial learning from failure.

6.2 Limitations and implications

The study is subject to certain limitations. The bibliometric data utilised in this study is confined to the Scopus database but future research could expand the search to other databases or grey literature sources. The study was limited to 2000– June, 2023 but did not consider the earlier years of the ELF. The inclusion of this study's dataset may potentially impact the citation and co-citation numbers of previous articles, resulting in variations in the influence levels of authors, institutions, and publications.

The study was limited to articles published in the English language, which may have excluded relevant articles written in other languages. This study searched titles and abstracts only. Some study may not include entrepreneurial learning from failure in titles and abstracts. The search string employed in this study may not capture all Scopus ELF publications. Our search focused on business, management, finance, and economics, but other scholars have used other keywords. Furthermore, multiple databases can be used for future studies. Therefore, our findings may not reflect the most current state of research in this area. We defined entrepreneurial failure as the closing of a firm owing to failing to satisfy the minimal economic viability level. This definition may have excluded articles that used different definitions or conceptualizations of failure. Despite our efforts to eliminate bias in the article selection process, there is still the possibility that some articles were excluded or included based on subjective interpretation of the inclusion and exclusion criteria. Our review was limited to the analysis of existing literature, and we did not conduct any empirical studies to validate or test our findings. Future research could benefit from empirical studies to support and extend our findings. Our study only focused on articles related to (ELF), and may not be generalizable to other contexts or areas of study.

The review emphasizes entrepreneurs' need to regard failure as a learning experience. It also emphasizes that learning from failure does not occur automatically and that it involves active control of unpleasant emotions as well as critical evaluation. The findings have implications for businesses as well as policymakers. Entrepreneurs should not see failure as the end of their careers or as proof of their unsuitability for entrepreneurship, but rather as an opportunity to apply what they have learned to other endeavors. Policymakers should address the social stigma associated with failure, facilitate the re-emergence of failed entrepreneurs, and ensure that lessons learned from failure are disseminated throughout the entrepreneurial community via institutions and initiatives such as specialized accelerator programs and entrepreneurship education.

7 Conclusion

This paper conducts a systematic literature review of academic studies in the domain of entrepreneurial learning from failure through the lenses of the TCCM framework. This systematic literature review thoroughly evaluates ELF literature has highlighted key facets of this multi-faceted phenomenon, highlighting its complexity and breadth. Theories like cognitive psychology, experiential learning, and attribution theory help entrepreneurs comprehend, analyze, and learn from failure. Each theoretical lens has illuminated the cognitive, behavioral, and contextual aspects of learning from entrepreneurial failure. The research also illuminated critical antecedents of entrepreneurial learning from failure, including resilience, risk inclination, corporate culture, support networks, and market

volatility. These antecedents influence how entrepreneurs perceive, experience, and learn from failure, demonstrating that learning is a complicated process driven by many inter-related aspects. Learning from failure can improve entrepreneurial abilities, decision-making, resilience, and innovation, according to the research review. These outcomes aren't guaranteed. These rewards frequently depend on the entrepreneur's ability to analyze and understand the failure.

The study examines the emotional and psychological impact of failure on entrepreneurs, the causes of failure, and the learning opportunities that may result. Entrepreneurs and policymakers concern about failure. Failure is often viewed negatively, but it can teach you how to succeed. This study highlights the complexities of corporate failure and the various factors that might affect it. The study found that excellent emotion management and learning practices are essential for turning failure into a learning experience and increasing future success. Entrepreneurs who can control their emotions and cope with the psychological effects of failure are more likely to learn from failure and succeed in future initiatives. The research also underlines the need to examine failure context and learning outcomes in future studies, especially in underdeveloped nations where failure may have more severe repercussions. This review is useful for failing businesses and scholars studying ELF. This study offers a realistic view of learning and re-entry after failure, which may help failed entrepreneurs manage the entrepreneurial process. The study also illuminates ELF dynamics, which might inform practice and policy. Understanding the attributes that lead to successful learning from failure helps entrepreneurs and politicians improve support programs for failing entrepreneurs.

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Declarations

Conflict of interest The authors state that the research was conducted without any potential conflicts of interest due to commercial or financial relationship. The author claims no conflict of interest.

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