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Entrepreneurial Failure: Structuring a Widely Overlooked Field of Research

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Abstract: Although entrepreneurial failure (EF) is a fairly recent topic in entrepreneurship literature, the number of publications has been growing dynamically and particularly rapidly. Our systematic review maps and integrates the research on EF based on a multi-method approach to give structure and consistency to this fragmented field of research. The results reveal that the field revolves around six thematic clusters of EF: 1) Soft underpinnings of EF, 2) Contextuality of EF, 3) Perception of EF, 4) Two-sided effects of EF, 5) Multi-stage EF effects, and 6) Institutional drivers of EF. An integrative framework of the positive and negative effects of entrepreneurial failure is proposed, and a research agenda is suggested.

Keywords: entrepreneurial failure, entrepreneurship, failure outcomes, systematic review

1 Introduction

This paper joins the theoretical conversation of entrepreneurial failure (EF). Quite recently, research has started to investigate the multi-level antecedents of EF

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(Adobor 2020; Artinger and Powell 2016; Holtzeakin, Joulfayan, and Rosen 1994; Omri and Frikha 2011), various situational context factors (Cardon, Stevens, and Potter 2011; Mantere et al. 2013; Wei et al. 2019), the failure process itself (Klimas et al. 2021; Olaison and Sørensen 2014), and its several outcomes (Acheampong and Tweneboah-Koduah 2018; Cooke 2019; Singh, Corner, and Pavlovich 2015).

However, EF still lacks clarity and consistency regarding the terminology and conceptualization of EF (Jenkins and McKelvie 2016; Tipu 2020). The reason for this might be that EF has just recently been detected as a “*hot topic*” (Olaison and Sørensen 2014, p. 193) in entrepreneurship research. Whereas the entrepreneurship literature has a clear focus on entrepreneurial performance and success (Singh, Corner, and Pavlovich 2007), the opposite, entrepreneurial failure, has attracted much less attention, which results in “*a pervasive anti-failure bias*” (McGrath 1999, p. 13), neglecting “*the dark side*” of the entrepreneurship process (Olaison and Sørensen 2014, p. 193). However, failure is an important phenomenon in entrepreneurship (Lattacher and Wdowiak 2020; Olaison and Sørensen 2014), as, in general, more new ventures fail than survive. Due to the increasing complexity and uncertainty in today’s markets, failure rates have even been increasing (Quan and Huy 2014; Ucbasaran et al. 2013). Learning from failure can provide important insights for entrepreneurial success (Cotterill 2012; Tipu 2020). Due to its practical and theoretical relevance, scholarly interest in entrepreneurial failure started to grow rapidly (Jenkins and McKelvie 2016; Klimas et al. 2021; Olaison and Sørensen 2014), leading to a fragmented body of literature with disconnected, separate insights.

To address this shortcoming, our research goal is to map and review the extant EF literature and to develop a research framework on the diverse EF effects. To achieve this, we combine a bibliometric analysis with a systematic literature review. By doing so, we offer landmarks and open ways for advancing research within, across, and beyond topical clusters.

Mixed method reviews offer significant advantages over qualitative or quantitative approaches, by allowing: 1) an enhanced interpretation of quantitative findings; 2) a rigorous generalization of qualitative findings, and 3) a better understanding of the focal phenomenon in terms of structure and substance (Pluye and Hong 2014). Accordingly, we first review the literature based on a bibliometric analysis, which adds a quantitative dimension by identifying the clusters of research interest and assessing the magnitude of interest allocated to research foci to prior qualitative insights (Klimas et al. 2021; Tipu et al. 2020). Next, by combining quantitative and qualitative review methods, we integrate existing knowledge (Kraus, Breier, and Dasí-Rodríguez 2020) in a trustworthy and rigorous way due to the multi-method approach (Harrison, Reilly, and Creswell 2020; Molina-Azorín 2011, 2012). We overcome the subjectivity concerns related to

thematic analysis on the one hand, and the interpretation concerns associated to bibliometric methods on the other hand, thus contributing to a cumulative knowledge creation (Gibson 2017; Hong and Pluye 2019).

Our study offers several noteworthy contributions to the understanding of EF. First, in the dynamic perspective, we note an acceleration of research on EF starting in 2014, with foci shifting over time from causes to a recent surge of interest in its effects. Second, we identify six clusters of topical interest in prior EF literature. We offer a discussion of the findings in each cluster, and the emerging research directions. Third, we integrate fragmented propositions on EF outcomes into an integrative framework along two dimensions: the level of analysis, and the (positive or negative) nature of the impact.

2 Terminology and Conceptualization of Entrepreneurial Failure

The literature offers several different terms in the discussion on EF (Klimas et al. 2021). The terminological diversity may be due to complexity of the failure phenomenon (Bolinger and Brown 2015; Fisch and Block 2020; Mantere et al. 2013), making it difficult to precisely define EF (Kuckertz, Berger, and Prochotta 2020). As a result, its understanding remains fragmentary (Klimas et al. 2021). Although the interest in EF is growing, we still lack a clear definition (Lattacher and Wdowiak 2020; Singh, Corner, and Pavlovich 2007; Ucbasaran et al. 2013; Wennberg and DeTienne 2014) and a transparent conceptualization of EF (Bolinger and Brown 2015; Cacciotti and Hayton 2014; Fisch and Block 2020; Mantere et al. 2013).

In this paper, we define entrepreneurial failure as a situation when an individual entrepreneur involuntarily terminates his or her relationship to an entrepreneurial venture because it is no longer possible to achieve an appropriate entrepreneurial performance. Conceptually, we see EF not as the same as business failure, business exit, and individual exit (Figure 1).

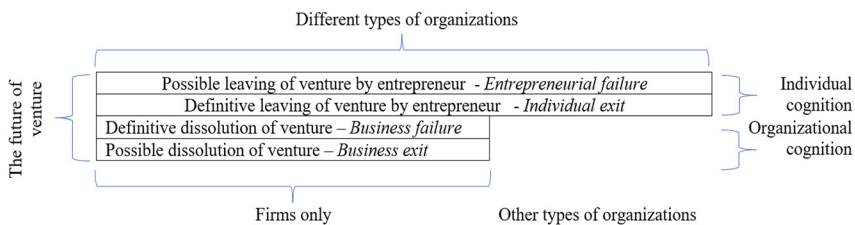


Figure 1: Conceptual frames of EF – the context of similar phenomena.

EF has to be distinguished from “*business failure*”, as the latter refers to missing economic business assumptions (Boso et al. 2019). Business failure is noticeable at the organizational level and may (but does not have to) result in entrepreneurs’ resignation from engaging in the venture. Business failure usually appears together with EF if an entrepreneur feels that they have failed, but it is possible that the financial losses are not seen by the entrepreneur as an individual failure (e.g. due to emotional reasons, a strong belief in the social value of the unprofitable business, etc.). Business failure refers to financial underperformance, whereas in the case of EF, the dissatisfaction does not have to be economic (Singh, Corner, and Pavlovich 2007) as the entrepreneur can feel that they have failed in other fields (innovation, social impact, brand expansion, private assumptions, etc.). Moreover, from an organizational perspective, business failure refers only to businesses, while EF can be identified in other types of ventures as well, such as foundations, associations, or networks not necessarily focusing on profits. Nevertheless, some scholars reduce EF to poor performance (Tipu 2020), missing economic targets, or generating financial losses (Yu et al. 2020).

EF has also to be distinguished from “*business exit*” (Knott and Posen 2005; Wennberg and DeTienne 2014). Business exit occurs when a business stops to engage in a given market (Wennberg and DeTienne 2014). It does not necessarily imply the firm’s death as long as the business is still active on at least one other market. Moreover, business exit does not necessarily imply that the entrepreneur has also failed (Sarasvathy, Menon, and Kuechle 2013), as it depends on the individual perception of the particular entrepreneur if they regard their endeavor as a failure or not, regardless whether the company survives or not (Cope 2011; Kasabov 2016; Lattacher and Wdowiak 2020; Ucbasaran et al. 2013). Indeed, leaving the current market and entering a new market with the same or even a new venture due to a restructuring, diversification, or divestment strategy should be seen as decisions protecting the entrepreneur from experiencing EF. This is consistent with the definition of entrepreneurship as an individually undertaken and driven process of recognition and exploitation of business opportunities through the establishment and running of an organization (Cacciotti et al. 2020), as well as through pursuing business opportunities without regard for the resources the individual currently controls (Stevenson and Jarillo 2007). Differentiation between business exit and EF is especially visible in the context of “*serial entrepreneurs*” who change business(es) to maximize multi-dimensional gains from their overall business activity (Ucbasaran et al. 2013; Wennberg and DeTienne 2014). Also, business exit can protect entrepreneurs from EF, as such entrepreneurs quite often leverage their entrepreneurship skills, transfer and develop their behaviors, and improve their style of decision-

making as they move from the previous to a subsequent venture (Eggers and Song 2015).

Finally, EF has to be distinguished from “*individual exit*” resulting in ownership change, which may, but does not have to, refer to EF (Knott and Posen 2005). On the one hand, an entrepreneur can leave a business due to retirement, health, or family issues, emigration, succession in the case of a family firm, etc. Furthermore, individual exit can be a deliberate decision aimed at increasing personal wealth from the sale of the business, changing industry (e.g. due to boredom, burnout, or the personal need for changes), and entering a new, more promising one (Jenkins and McKelvie 2016). On the other hand, an entrepreneur may fail but not exit the firm (e.g. due to emotional reasons and personal engagement in the business or professional and legal obligations). In particular, emotional involvement may prevent an entrepreneur from closing the business, even when they see the failure and notice that the business is “*permanently failing*” (McGrath 1999). Finally, the two may overlap, for instance, when an entrepreneur who has failed decides to leave the venture. Nonetheless, although some overlaps are possible, identifying individual exit as EF is misleading.

3 Research Methodology

To review the EF literature, we adopted a multi-method approach, combining a quantitative and qualitative analysis (Vallaster et al. 2019). In particular, we conducted a bibliometric analysis of the literature, consisting of a keyword co-occurrence analysis and a bibliographic coupling. We then conducted a literature review for all clusters identified by the bibliographic coupling. Based on the findings, we develop an integrative framework on EF outcomes.

3.1 Data Collection

The literature sample was collected and compiled from two major scholarly databases, Scopus and Web of Science (WoS). The research was carried out in October 2020 and updated in February 2022. We conducted a topic search (including the titles, abstracts, and keywords) with the following terms: “entrepreneur* failure” or “entrepreneur* insolvent*” or “entrepreneur* bankruptc*” or “entrepreneur* mortalit*” or “entrepreneur* closure*” or “entrepreneur* decline*” or “entrepreneur* distress*” or “entrepreneur* liquidation*”. During the search process, the following inclusion criteria were used: peer reviewed works, journal articles, and book chapters, full text available, works written in English. We did not exclude

specific document types or journals, as we wanted to gain a holistic understanding of the field. We also did not exclude non-business or non-management related publications, as we did not want to single out psychological, sociological, or other perspectives.

The search yielded 132 publications in Scopus and 107 publications in WoS. After removing duplicates, 161 unique publications remained. We analyzed the content of each publication and removed those that did not relate to the research topic (false hits). As a consequence, the final literature sample contained 153 publications in the period between 1985 and 2021 (Table 1).

The annual evolution of the number of publications on the topic of EF is depicted in Figure 2. The first article on EF dates back to 1985, with only a few articles being published per year over the next three decades. Since 2015, the number of publications has been increasing rapidly. Therefore, EF can be considered a young research field and can be expected to follow growth trends similar to other entrepreneurship-related research fields, such as social entrepreneurship (Rey-Martí, Ribeiro-Soriano, and Palacios-Marqués 2016), international entrepreneurship (Servantie et al. 2016), or sports entrepreneurship (González-Serrano, Jones, and Llanos-Contrera 2020).

EF works in our database were published in 112 sources. The sources with the highest number of publications were the *Journal of Business Venturing* (10 publications), the *Frontiers in Psychology* (seven publications), and *International Journal of Entrepreneurial Behavior and Research* (six publications). Given the titles, types, and scopes of the main journals publishing works on EF, it seems that

Table 1: Summary of articles included following the search.

Description	Results
Documents	153
Sources (journals, books, etc.)	112
Author keywords (DE)	350
Period	1985–2021
Authors	299
Author appearances	336
Authors of single-authored documents	44
Authors of multi-authored documents	255
Single-authored documents	51
Average documents per author	0.5
Average co-authors per document	2.2

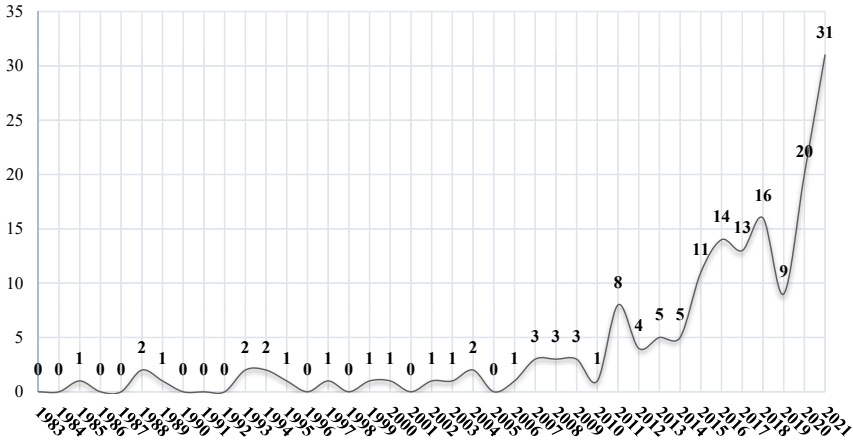


Figure 2: Number of articles by year of publication.

these works tap mainly into the most general, leading field of entrepreneurship research (Servantie et al. 2016).

3.2 Data Analysis

To map the EF literature, we first conducted a keyword co-occurrence analysis showing which keywords are often mentioned together in the keyword lists of EF publications. The frequently co-occurring keywords form clusters, which allow a first overview of typical research themes.

Second, we conducted a bibliographic coupling analysis of the literature sample (e.g. Boyack and Klavans 2010) for another clustering of the research field. Two articles are bibliographically coupled, when they jointly cite the same references in their reference lists. The initial sample of 153 publications contained 4517 cited references. However, not all publications were considered relevant as many have not been cited yet. We set the minimum citation threshold to 1, which reduced the sample to 59 publications with 1962 references. Based on the bibliographic coupling matrix, a common reference matrix was determined between the 59 publications to establish the network of connections between the publications and the clustering. For the visualization of both bibliometric maps, we used NetDraw version 2.170 (Borgatti 2002).

The clusters of bibliographically coupled papers are assumed to represent the central themes and intellectual structures of an area of knowledge (Leydesdorff and Vaughan 2006). As the clusters from both analyses are based on different

methods, they usually differ and can be seen as two views on a research field from different perspectives. The focus of bibliographic coupling analysis on the citing rather than cited papers allows for an analysis of the more recent literature, whereas the more established co-citation analysis has a rather historical perspective (Boyack and Klavans 2010). Due to the young history of EF research, this science mapping method is more appropriate.

Third, for each cluster identified by the bibliographic coupling, we conducted a literature review to get a deeper understanding of the main research themes in the EF clusters. Due to the manageable number of papers, we reviewed all papers in each cluster. This thematic content analysis provides a detailed account of common threads (Braun and Clarke 2006; Jedynek et al. 2021) and was run by a four-person research team to ensure investigator triangulation and thus leverage the quality and validity of findings (Archibald 2016; Kraus, Breier, and Dasí-Rodríguez 2020).

Thematic analysis aims to identify themes that emerge from textual data as being important for the description of the phenomenon under scrutiny (Fereday and Muir-Cochrane 2006). The philosophical roots of this technique refer to social phenomenology, in assuming that individuals attribute meaning to phenomena. Hence, the body of EF literature reflects those topics that are important for delineating this phenomenon and describing its key characteristics. Thematic analysis identifies these themes in six rigorous steps: 1) familiarizing with the data, i.e. the paper database; 2) generating initial codes, i.e. distinct topic labels; 3) searching for themes, i.e. patterns of inquiry into EF; 4) reviewing potential themes among research team members; 5) defining and labeling themes; and 6) reporting findings (Braun and Clarke 2006).

The unique contribution of our study is a combination of bibliometrically identified clusters with a thematic analysis within and across clusters. We thus enhance the validity of our findings through methodological triangulation (Denzin 1978).

4 Results

4.1 Co-occurrence of Keywords in the EF Field

The keyword co-occurrence network is displayed in Figure 3, in which we include keywords that co-occurred at least twice. This analysis revealed five clusters, which are marked with different colors and shapes.

The publications summarized in Cluster 1 (red circles) have terms related to the causes of EF in common and investigate institutional factors and environments (Adobor 2020; Amankwah-Amoah et al. 2021; García-Ramos, Gonzalez-Alvarez, and Nieto 2017; Kasabov 2016; Martins and Perez 2020; Vaillant and Lafuente 2007; Warnecke 2016), rural entrepreneurship (Jianyong 2017; Kasabov 2016; Sadeghloo et al. 2018; Vaillant and Lafuente 2007), small and medium-sized businesses (Barba-Sánchez and Martínez-Ruiz 2009; Laitinen 2011; Sadeghloo et al. 2018), and employment factors (Adobor 2020; Jenkins and McKelvie 2016; Jianyong 2017; Kasabov 2016; Khelil 2016; Montes-Rojas and Siga 2009; Samuels, Joshi, and Demory 2008).

Cluster 2 (green squares) brings contextuality to the study of EF by including entrepreneurial learning/education and pedagogy (Amjad, Abdul Rani, and Sa'atar 2020; Lattacher and Wdowiak 2020; Riar, Bican, and Fischer 2021; Shepherd et al. 2016; Toumi and Smida 2018; Wang and Huang 2020; Wójcik et al. 2020), entrepreneurship restart intention (Jeng and Hung 2019; Quan and Hung 2016; Quan and Huy 2014), and human capital (Lafuente and Gomez-Araujo 2016; Park, Park, and Kim 2017; Quan and Huy 2014).

Cluster 3 (blue diamonds) is related to the perception of EF, and includes thematic areas, such as sensemaking (Cardon, Stevens, and Potter 2011; Cooke 2020; Lattacher and Wdowiak 2020; Mantere et al. 2013; Shepherd and Patzelt 2015; Shepherd and Patzelt 2015; Singh, Corner, and Pavlovich 2015, 2016) and attribution approaches (Cardon, Stevens, and Potter 2011; Mantere et al. 2013; Yamakawa, Peng, and Deeds 2010, 2015), as well as plant shutdowns (Artinger and Powell 2016; Yamakawa, Peng, and Deeds 2010).

Cluster 4 (yellow triangles) is related to EF at the national/regional level. Cooke (2019) studied the entrepreneurial process at the level of the national economy from less developing countries to developed countries. Berisha Qehaja, Kutllovci, and Shiroka Pula (2017) compared the use of strategic tools between countries and their impact on EF. García-Ramos, Gonzalez-Alvarez, and Nieto (2017) researched the relationship between the amount of a country's stock of social capital and EF, while Wyrwich, Sternberg, and Stuetzer (2019) used data on regional entries and exits to find that successful entrepreneurship reduces the fear of failure, while observing business failure increases the fear of failure.

Cluster 5 (red triangles) includes keywords related to the technological causes of EF. Cotterill (2011, 2012) explored the failure of new technology ventures in early-stage technology companies through comparative studies of companies in the USA, the UK and Germany.

4.2 Bibliographic Coupling and Cluster Analysis

Figure 4 presents the network of bibliographically coupled articles, using the data from the common reference matrix and the respective clustering of publications determined through cluster analysis (Table 2).

The cluster analysis reveals six subsets of papers. The review of these clusters allowed us to notice significant differences in terms of the issues considered within them, while some inter-cluster links were also identified. The clusters can be named as follows: 1) soft underpinnings of EF; 2) contextuality of EF; 3) perception of EF; 4) two-sided effects of EF; 5) multi-stage effects of EF; and 6) institutional drivers of EF.

According to the age of the publications in the clusters, and following the process approach to failure (Çera, Belas, and Zapletalíková 2019; Cope 2011; Jeng and Hung 2019; Walsh and Cunningham 2017), it can be observed that the oldest papers (Clusters 1 and 6) focus on the causes of EF, while the newest (Clusters 4 and 5) concentrate on its effects. This interest in the extreme ends of the EF process are separated by an exploration of the high contextuality of EF (Cluster 2) and its varied perceptions (Cluster 3).

Interestingly, in terms of the EF process, we do not find any cluster explicitly focusing on the middle stage of the EF process, i.e. the EF event (Klimas et al. 2021; Olaison and Sørensen 2014), the failure experience (Jenkins, Wiklund, and Brundin 2014), concrete experience (Lattacher and Wdowiak 2020), or failure phenomenon (Smita Singh, Corner, and Pavlovich 2007). As a consequence, the failure event is currently under-investigated (Klimas et al. 2021). The complete EF process calls for a triangulation of collected data before, during, and after failure (Fisch and Block 2020).

4.2.1 Cluster 1: Soft Underpinnings of Entrepreneurial Failure

This cluster focuses on entrepreneurial factors, including the psychological, behavioral, and social antecedents of failure. The cluster with items in green circles is largest one, with 16 articles and an average age of 7.5 years.

Psychological factors include fear of EF (Ferreto, Lafuente, and Carlos-Leiva 2018; Lafuente and Gomez-Araujo 2016), attitude about EF (Cotterill 2012), risk-taking nature (Kasabov 2016; Montes-Rojas and Siga 2009), and the propensity for discrimination (Samuels, Joshi, and Demory 2008). Regarding behavioral factors, the explorations have focused so far on the adopted entrepreneurial role model(s) (Vaillant and Lafuente 2007; Wójcik et al. 2020), passivity and overreliance on the public sector (Kasabov 2016), opportunities pursued by entrepreneurs capable of

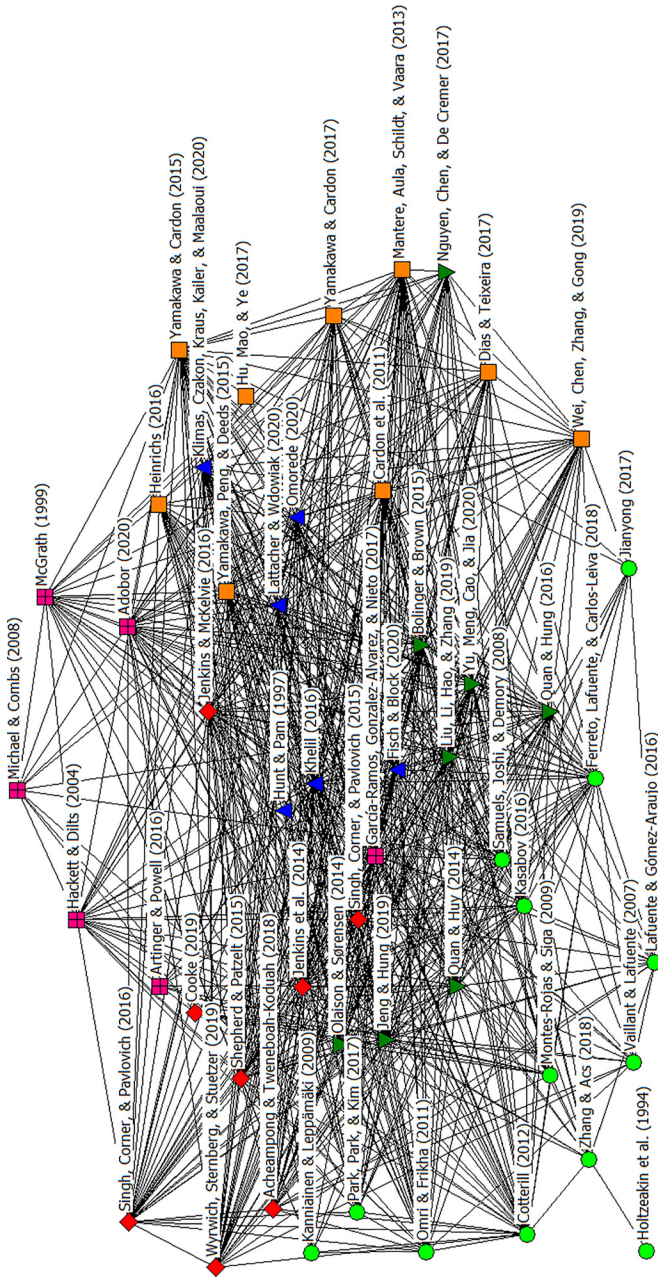


Figure 4: Bibliographic coupling network and clusters. Legend: Cluster 1: green circles, Cluster 2: orange squares, Cluster 3: red diamonds, Cluster 4: dark green triangles, Cluster 5: blue triangles, Cluster 6: pink squares.

Table 2: Clusters of bibliographic coupling.

Authors	Clusters
Cotterill (2012), Ferreto, Lafuente, and Carlos-Leiva (2018), Holtzeakin, Joulfayan, and Rosen (1994), Jianyong (2017), Kannianen and Leppämäki (2009), Kasabov (2016), Lafuente and Gómez-Araujo (2016), Montes-Rojas and Siga (2009), Omri and Frikha (2011), Park, Park, and Kim (2017), Riar, Bican, and Fischer (2021), Samuels, Joshi, and Demory (2008), Vaillant and Lafuente (2007), Wang and Huang (2020), Wójcik et al. (2020), Zhang and Acs (2018)	Cluster 1 (green circles, $N = 16$; average age rate = 7.50) <i>“Soft underpinnings of entrepreneurial failure”</i>
Amankwah-Amoah et al. (2021), Cardon, tevens, and Potter (2011), Cooke (2020), Dias and Teixeira (2017), Heinrichs (2016), Hu, Mao, and Ye (2017), Mantere et al. (2013), Wei et al. (2019), Yamakawa and Cardon (2015), Yamakawa and Cardon (2017), Yamakawa, Peng, and Deeds (2015)	Cluster 2 (orange squares, $N = 11$; average age rate 4.54) <i>“Contextuality of entrepreneurial failure”</i>
Acheampong and Tweneboah-Koduah (2018), Cooke (2019), Jenkins and McKelvie (2016), Jenkins, Wiklund, and Brundin (2014), Shepherd and Patzelt (2015), Singh, Corner, and Pavlovich (2015), Singh, Corner, and Pavlovich (2016), Wyrwich, Sternberg, and Stuetzer (2019)	Cluster 3 (red diamonds, $N = 8$; average age rate = 4.38) <i>“Perception of entrepreneurial failure”</i>
Bolinger and Brown (2015), Combs et al. (2021), Jeng and Hung (2019), Liu et al. (2019), Nguyen, Chen, and De Cremer (2017), Olaison and Sørensen (2014), Quan and Hung (2016), Quan and Huy (2014), Yu et al. (2020)	Cluster 4 (dark green triangles, $N = 9$; average age rate = 3.58) <i>“Two-sided effects of entrepreneurial failure”</i>
Babina (2020), Fisch and Block (2020), Hunt and Pam (1997) ^a , Khelil (2016), Klimas et al. (2020), Lattacher and Wdowiak (2020), Omorede (2020), Rahman, Besra, and Nurhayati (2020)	Cluster 5 (blue triangles, $N = 7$; average age rate = 1.57) <i>“Multi-stage entrepreneurial failure effects”</i>
Adobor (2020), Artinger and Powell (2016), García-Ramos, Gonzalez-Alvarez, and Nieto (2017), Hackett and Dilts (2004), Martins and Perez (2020), McGrath (1999), Michael and Combs (2008)	Cluster 6 (pink squares, $N = 7$; average age rate = 9.0) <i>“Institutional antecedents of EF”</i>

^aDuring the thematic content analysis, the paper by Hunt and Pam (1997) was excluded from further analysis as it focuses on the failure of British agriculture, thus a failure at the mezzo/macro level, whereas our study refers to entrepreneurial failure considered (at least to some extent) at the individual level.

learning from failure (Park, Park, and Kim 2017), the ability to utilize gained education, experience and knowledge (Montes-Rojas and Siga 2009; Omri and Frikha 2011; Riar, Bican, and Fischer 2021; Wang and Huang 2020), and submissiveness to unions (Kanniainen and Leppämäki 2009). Social factors include social relationships and networks (Jianyong 2017; Omri and Frikha 2011) at the individual level, and social traits (Vaillant and Lafuente 2007) at a macro level of analysis.

4.2.2 Cluster 2: Contextuality of Entrepreneurial Failure

The second cluster of papers focuses on differences between conditions underlying and shaping EF and its perception. These contextualities of EF have been considered at different levels of analysis. The cluster with items in orange squares consists of 11 articles with an average age of 4.54 years.

At the macro level, the geographical scope of an entrepreneur's activity has been considered, resulting in cultural (Cardon, Stevens, and Potter 2011) and economic as well as institutional differences (Heinrichs 2016; Wei et al. 2019) in the perceptions and effects of EF.

At the organizational level, the differences in the types of stakeholders giving narration to the scope of failure were discussed (Mantere et al. 2013). At the individual level, attention has been paid to differences in terms of the time to exit (Yamakawa and Cardon 2017), the specificity of failure attributions (Yamakawa and Cardon 2015), and past failure experiences of the entrepreneur (Dias and Teixeira 2017). In contrast to the first cluster, the identification of relevant contexts was not limited to EF factors, such as cultural sensemaking of failure (Cardon, Stevens, and Potter 2011; Wei et al. 2019), the investment made in the venture (Yamakawa and Cardon 2017), and the proper model of entrepreneurship education (Heinrichs 2016), but also covered EF effects, such as the stigmatization effect (Cardon, Stevens, and Potter 2011) and other types of emotional (Wei et al. 2019) and cognitive effects (Mantere et al. 2013), perceptions of learning (Yamakawa and Cardon 2015), and factors affecting learning from failure (Amankwah-Amoah et al. 2021; Wei et al. 2019), and changes in entrepreneurial behavior (Dias and Teixeira 2017).

4.2.3 Cluster 3: Perception of Entrepreneurial Failure

The third cluster concentrates on the perception of EF, including the importance of its variation on the effects of failure. There are significant differences in failure perception depending on the attributes of both the failing entrepreneur (e.g. spirituality – Singh, Corner, and Pavlovich 2016) and the observer (Shepherd and Patzelt 2015), but this also impacts both of them. The cluster with items as red

diamonds also contains nine articles and is slightly younger, with an average age of 4.38 years.

On the one hand, failure perception shapes the perception of stigma, including its long-term positive effects (Singh, Corner, and Pavlovich 2015), future entrepreneurial intentions (Acheampong and Tweneboah-Koduah 2018), and even the individual's general reactions (Jenkins, Wiklund, and Brundin 2014). On the other hand, it impacts the observer's fear of failure (Wyrwich, Sternberg, and Stuetzer 2019) and the entrepreneurial process at the level of the national economy (Cooke 2019). Jenkins and McKelvie (2016) suggest that a clear and sound understanding of EF requires appropriate conceptualizations, using different levels and perspectives. In contrast to previous clusters, in this set of papers, not only individual and firm-level issues are considered, but also regional (Wyrwich, Sternberg, and Stuetzer 2019) and national ones.

4.2.4 Cluster 4: Two-sided Effects of Entrepreneurial Failure

The fourth cluster covers papers considering the effects of EF. Importantly, these works highlight the two-sided nature of EF outcomes, both positive and negative (Bolinger and Brown 2015; Jeng and Hung 2019; Olaison and Sørensen 2014). The cluster with dark green triangles representing the items has nine articles, which, on average, are 3.58 years old.

Various kinds of failure may occur in the field of entrepreneurship, which can be classified as “good” or “bad” failure depending on whether the entrepreneur learns to deal with this feeling (Olaison and Sørensen 2014). Learning processes (Nguyen, Chen, and De Cremer 2017), restarting the business in the context of human (Quan and Huy 2014) and social capital utilization (Quan and Hung 2016) or at the individual level of narcissism (Liu et al. 2019) are listed among the positive effects of EF. The negative outcomes, meanwhile, include bidirectional work and family conflicts (Yu et al. 2020), task- and emotional conflicts (Nguyen, Chen, and De Cremer 2017), which, over a longer time span, result in a wide range of psychological costs (Jeng and Hung 2019). Quan and Huy (2014) and Quan and Hung (2016), on the other hand, argue that, although failed entrepreneurs face enormous difficulties and even painful experiences, they can use social capital as a valuable resource and can even learn some useful lessons in the intention to start afresh.

Failure is costly financially, socially, and psychologically, but it can promote future entrepreneurial success (Jeng and Hung 2019; Nguyen, Chen, and De Cremer 2017). According to Jeng and Hung (2019), the costs of failure and learning outcomes are integral to undertaking entrepreneurship. Also, Liu et al. (2019) highlight that the failure of a previous business offers the entrepreneur an

opportunity to learn how to deal with new opportunities, although this learning may depend on the personality of the entrepreneur (Cooke 2020), whereas some entrepreneurs learn less from failure than others.

4.2.5 Cluster 5: Multi-stages Entrepreneurial Failure Effects

The fifth and youngest cluster turns to considerations about the complex and dynamic nature of the EF process. The debate seems to have been triggered by Khelil's (2016) paper on configurational and complex approaches to theoretical lenses and profiles of EF. Later on, others started to explore various types of EF effects (first by desk study then using field studies) using a multi-stage approach. This cluster includes seven articles shown with blue triangles and is the youngest one as their average age is 1.57 years.

The main contribution of this set of papers is evidence for the dynamic nature of EF effects, i.e. appearing at a different time delay and changeable over time. For instance, Omorede (2020) points to the individual-level effects recognizable immediately when failure is experienced, then individual-level results impacting the entrepreneur shortly after the incident, and organizational-level outcomes related to new ventures. With a greater emphasis on dynamics and the multi-level nature of outcomes, Klimas et al. (2021) distinguish direct effects at the individual level, indirect effects at the individual level, and long-term outcomes at the environmental, organizational, and individual levels. When it comes to empirical findings, Lattacher and Wdowiak (2020) propose different stages of the learning process, while Fisch and Block (2020) explore the different types of effect, i.e. financial, social, and psychological, as well as long-term impacts on an entrepreneur's digital identity at the individual level of analysis. Rahman, Besra, and Nurhayati (2020) investigates the internal circumstances of individuals, such as personality, characteristics, and psychological aspects, which can cause business failure. Babina (2020) study the distress-driven entrepreneurs, particularly high-wage workers who found better companies, as measured by jobs, wages, and survival probability.

4.2.6 Cluster 6: Institutional Antecedents of Entrepreneurial Failure

The sixth and oldest cluster, similarly to the first cluster, focuses on EF antecedents. Particularly, the focus is given to their two – complementary – facets, institutional environment and psychological issues (Adobor 2020; Artinger and Powell 2016; García-Ramos, Gonzalez-Alvarez, and Nieto 2017). The second smallest cluster has seven papers depicted with pink squares and is the oldest, with an average age of 9.0 years.

In contrast to the first cluster, however, psychological issues are considered here only as supplementary to institutional ones, which are explored in great detail. Regarding the latter, two types of institutions are distinguished, namely formal (e.g. regulatory issues, taxes, formal arrangements, and governmental support) and informal (e.g. social capital and social ties). Both types of causes are empirically supported, that is institutional ones (e.g. formal contracts, business monitoring and assistance, sound relationships with strategic partners including regulators, as well as social capital and its structure), and psychological (e.g. fear of failure and overconfidence). Studies focus on the context of franchisees (Michael, Combs, and Combs 2008), newly developed incumbent firms (Hackett and Dilts 2004), and mature aquaculture firms (Adobor 2020).

Differently from other literature clusters, in this cluster the real-option theory (Artinger and Powell 2016; McGrath 1999) is mobilized to better understand the EF phenomenon. Although EF is gaining traction in the literature, most studies evidence a bias against failure, such as McGrath (1999) who claims that managing uncertainty through pursuing opportunities, explored from the real options perspective, can help mitigate the risk of EF.

4.3 An Integrative Framework of the Long-term Effects of EF

A general overview of the identified EF studies suggests an increasing interest in the field (Boso et al. 2019; Jenkins and McKelvie 2016; Olaison and Sørensen 2014). However, even in recent papers, more attention is given to the inputs (drivers, motives, antecedents) (Adobor 2020; Ferreto, Lafuente, and Carlos-Leiva 2018; García-Ramos, Gonzalez-Alvarez, and Nieto 2017; Kuckertz, Berger, and Prochotta 2020), leaving the outcomes (effects, results) much further behind (Dias and Teixeira 2017).

Our analysis shows that the latest works start to shift attention to the effects of EF (Clusters 4 and 5). Our thematic analysis of these clusters points to the complexity of the outcomes of EF. The works in Cluster 4 prove their two-sidedness as the effect can be positive and/or negative at the same time (Bolinger and Brown 2015; Olaison and Sørensen 2014). The studies grouped in Cluster 5 point to the multi-level nature of failure effects, which, especially in the case of those postponed in time (Omoredede 2020), can impact individuals, organizations, and the business environment simultaneously (Çera, Belas, and Zapletalíková 2019; Klimas et al. 2021) and take on very different forms (Lattacher and Wdowiak 2020).

As suggested by Klimas et al. (2020), long-term EF outcomes may be differentiated by the direction of the influence (Jeng and Hung 2019). Accordingly, as emphasized by McGrath (1999), EF entails both profits and costs. Hence, its effects can be seen as paradoxical (Ucbasaran et al. 2013). For example, relating to the

learning effects of EF, empirical studies found them to be positive (e.g. Boso et al. 2019), positive or negative (e.g. Funken et al. 2020), or have an inverted U-shape (e.g. Fang He et al. 2018). Additionally, as reasoned by Tipu (2020), EF triggers both positive and negative emotions simultaneously. Therefore, it is important to address the long-term outcomes of EF that are mainly interpreted as positive or negative – determining the type of experienced failure, namely “*good failure*” or “*bad failure*” (Olaison and Sørensen 2014).

The two-sidedness of EF effects has several reasons. First, an effect may be negative for the entrepreneur but positive on other levels, such as the organization or the industry. Second, on each level, effects are rarely purely positive or negative but have both aspects. Third, the assessment if an effect is positive or negative is also subject to interpretation. Fourth, the direction of the effect may change according to its magnitude, i.e. a weak effect may be positive but turn to negativity when the effect increases, or vice versa. For example, there is a difference between “*intelligent failures*” and “*total entrepreneurial death*”. In both cases, failure can lead to either significant gains or severe damage. Intelligent failure, even if it provides small effects that are relatively harmless, can foster learning (Cope 2011), while entrepreneurial death may lead (if at all) to significant knowledge-related benefits, not for the entrepreneur but for his/her business surroundings (Hoetker and Agarwal 2007). On the other hand, “*intelligent failure*” may lead to an overly risk-taking propensity in future ventures (Cave, Eccles, and Rundle 2001; Shepherd 2003), and thus “*entrepreneurial death*” may be linked with business closure. This might impact a general economic slowdown (McGrath 1999) and the non-optimal allocation of resources within the industry (Knott and Posen 2005).

The two-sided nature of EF effects is only one reflection of their complex nature. The second is their multi-level nature. However, prior works suggest that the second facet of their complexity does not refer to all of the EF effects but only to those with the longest timespan. Indeed, it seems that the most immediate effects, those directly related to the failure event, affect (only) the entrepreneur (Klimas et al. 2021; Omorede 2020) and refer mainly to learning (Lattacher and Wdowiak 2020). These effects with a long-term influence seem to reach beyond the entrepreneur as they also affect other individuals, organizations, and institutional and social frames surrounding the entrepreneur (Çera, Belas, and Zapletalíková 2019).

By integrating the contributions made by papers found in Clusters 4 and 5, we develop an integrative framework for EF outcomes (i.e. long-term effects indirectly linked with the failure event – Klimas et al. 2021), linking both their two-sided and multi-level nature. The synthesis of the prior proposition supplemented with the missing elements shows a holistic view that simultaneously considers both positive and negative effects on the entrepreneur (individual level), the entrepreneur’s ventures (organizational level), and the entrepreneur’s environment (inter-organizational level) (Table 3).

Table 3: An integrative framework of EF outcomes.

Outcomes	Level of impact		
	Environment	Current and future organization	Entrepreneur
Interpreted as mainly positive	<p>Economy: economic development, job creation (Hoetker and Agarwal 2007), diffusion and better allocation of resources (Knott and Posen 2005); creation and diffusion of knowledge and innovation (Hoetker and Agarwal 2007; Ucbasaran et al. 2013).</p> <p>Industry and business networks: reduction of industry costs (Knott and Posen 2005); catalyzing for change (North et al. 2014), acceleration of innovation (Knott and Posen 2005; Wennberg and DeTienne 2014); exclusion of intra-industry knowledge brokers as a result of stigmatization (Walsh and Cunningham 2017); positive changes in professional norms as a result of strong stigmatization (Shepherd et al. 2016; Walsh and Cunningham 2017), industry development (Eggers and Song 2015).</p> <p>Competitors: generation of knowledge which can be captured by companies not related to the failed entrepreneur (Knott and Posen 2005); increasing probability of survival (Knott and Posen</p>	<p>Future ventures established by the entrepreneur who failed: the greater probability of success in subsequent entrepreneurial initiatives (Smita Singh, Corner, and Pavlovich 2007; Yamakawa and Cardon 2015); gaining from resource input from past ventures (Jeng and Hung 2019; Zahra and Dess 2001) including tacit knowledge in particular (Knott and Posen 2005); higher performance on future tasks (North et al. 2014).</p> <p>Current organization operating after entrepreneur's fail: improvement of organizational routines (i.e. higher collective emotional capabilities) and organizational</p>	<p>Economic: positive performance on future tasks (North et al. 2014), creativity, and innovativeness of new business venture (Wennberg and DeTienne 2014).</p> <p>Physiological: motivation to establish a new (innovative) business (Jeng and Hung 2019; Liu et al. 2019; Nguyen, Chen, and De Cremer 2017; Ucbasaran et al. 2013); stress relief (Cope 2011).</p> <p>Psychological: confidence and higher ambition as well as positive thinking among their personalities (Loh and Dahehsihari 2013), more precise emotional balance, and higher emotional intelligence (Shepherd et al. 2016).</p> <p>Cognitive: improvement of learning skills (i.e. quick learning – (Loh and Dahehsihari 2013); recognition of opportunities – (Mueller and Shepherd 2016; Jeng and Hung 2019), individual learning mechanisms –</p>

Table 3: (continued)

Outcomes	Level of impact		
	Environment	Current and future organization	Entrepreneur
	<p>2005), easier competition as strategic behaviors of surviving firms stop being impacted by the failed business (Hoetker and Agarwal 2007; Knott and Posen 2005; McGrath 1999)</p> <p>The community of interest and entrepreneurship ecosystem: job creation (Hoetker and Agarwal 2007); release and spread of professional knowledge to the community (Ucbasaran et al. 2013); helplessness (North et al. 2014) and self-kindness (Shepherd et al. 2016).</p>	<p>behaviors (i.e. greater self-kindness, common humanity, emotional mindfulness) (Shepherd et al. 2016).; improvement of organizational learning mechanisms (i.e. higher breadth of attention and array of resources; access to resources protected by the failed entrepreneur) (Shepherd et al. 2016).</p>	<p>(Shepherd et al. 2016); development of knowledge (Minello, Scherer, and Alves 2014) also through revisiting the existing knowledge (Jeng and Hung 2019; Shepherd 2003), improvement of managerial competencies, i.e. mobilizing resources (creating synergies), taking risks, strategic viewing, experiencing and revising failure (Minello, Scherer, and Alves 2014), decision making (Jeng and Hung 2019), flexibility and adaptive response (North et al. 2014). Social: improvement of social skills, including social sensitivity and helpfulness (Loh and Dahesihsari 2013).</p>
<p>Interpreted as mainly negative</p>	<p>Economy: not identified in the literature review. <i>Possible outcome – regional unemployment in the case of influential entrepreneurs whose failure results in bankruptcy.</i></p> <p>Industry and business networks: external results of entrepreneur’s</p>	<p>Future ventures established by the entrepreneur who failed: too high risk-taking propensity (Cave, Eccles, and Rundle 2001; Shepherd 2003), lower motivation and engagement in future business (Ucbasaran et al. 2013), damaged</p>	<p>Economic: losses of property or high and longitudinal reduction in personal income (Cope 2011; Ucbasaran et al. 2013).</p> <p>Physiological: economic costs resulting in anemia and malnutrition,</p>

Table 3: (continued)

Outcomes	Level of impact		
	Environment	Current and future organization	Entrepreneur
	<p>stigmatization (Walsh and Cunningham 2017), e.g. weakening of supportive relationships and lowering of trust (Shepherd et al. 2016) leading to the loss of network stability.</p>	<p>reputation of an entrepreneur that inhibits the creation of a new company's reputation (Jeng and Hung 2019).</p>	<p>longitudinal stress, shelter (Corner, Singh, and Pavlovich 2017; Jenkins, Wiklund, and Brundin 2014); economic and psychological effects resulting in insomnia, weight loss, sleeplessness, panic attacks (Smita Singh, Corner, and Pavlovich 2007), mood disorders (Shepherd et al. 2016),., distress (Fisch and Block, 2020), physical exhaustion, anxiety and depression (Cope 2011).</p>
	<p>Competitors: not identified in the literature review. <i>Possible outcome – decrease in the bargaining power of competitors in the case of entrepreneurial failure resulting in the bankruptcy of a strategic partner.</i></p>	<p>Current organization operating after entrepreneur's fail: organizational stigmatization leading to disruption of psychological well-being of employees including the closest entrepreneur's co-workers in particular; distortion of the diversity and stability of both organizational climate and organizational culture, lowering the level of professional norms, decreasing willingness to maintain supportive relationships (Shepherd et al. 2016).</p>	<p>Psychological: negative impact on the entrepreneur's confidence, self-efficacy (Cave, Eccles, and Rundle 2001; Shepherd 2003) and self-esteem (Cope 2011); always high level of negative emotions (Fisch and Block, 2020; Shepherd et al. 2016) driven by shame, embarrassment, grief (Jeng and Hung 2019), disappointment (Khelil 2016).</p> <p>Cognitive: not identified in the literature review. <i>Possible outcome – limited perception of business opportunities and strategic myopia conditioned by the fear of failure.</i></p>
	<p>The community of interest, entrepreneurship ecosystem: loosening and disruption of social relationships (Cope 2011); weakening</p>		<p>Social: stigmatization resulting in social isolation (Simmons, Wiklund, and Levie 2014); deterioration of personal relationships (Ucbasaran et al. 2013)</p>

Table 3: (continued)

Outcomes	Level of impact		
	Environment	Current and future organization	Entrepreneur
	of supportive relationship and lowering trust as a result of stigmatization (Shepherd et al. 2016); external effects of entrepreneur's stigmatization including isolation, exclusion and social stigma within the professional community (Ucbasaran et al. 2013; Walsh and Cunningham 2017) lowering the level of professional norms (Shepherd et al. 2016).		including kindship, friendship (Jeng and Hung 2019), family ties (Jenkins, Wiklund, and Brundin 2014; Ucbasaran et al. 2013) and family conflicts (Yu et al. 2020), disruption of social (Shepherd et al. 2016) and digital identity (Zaheer, Breyer, and Dumay 2019).

The need for a comprehensive view on failure effects, simultaneously including their two-sidedness and multi-level nature, finds support in prior suggestions that EF effects are complex, multifaceted, interlinked, and mutually supportive (Ucbasaran et al. 2013). We are aware that delineating the positive and negative effects is a challenging task because the perception of the direction of the influence might be blurred since individuals, as well as communities, may evaluate similar situations in different ways (Jenkins, Wiklund, and Brundin 2014). In sum, we encourage more empirical tests of the above types of failure implications. Due to the dominance of the highly negative view on EF effects (Wennberg and DeTienne 2014), we concur with Politis (2008) that further identification of positive outcomes other than learning-related ones is particularly necessary.

5 Discussion and Conclusion

Our study aimed to map the EF literature in order to identify overarching themes and foster further research. By mobilizing bibliometric and thematic cluster analyses, we identify six clusters. We then focused on the effects of EF to derive a further research agenda. We discuss our findings in detail by indicating the outlets

that host the debate on EF, influential studies, relevant clustered findings and the remaining gaps within and across them.

Finally, the proposed integrative framework of EF outcomes (Table 3) supports prior suggestions about the simultaneously identified positive and negative impacts (Bolinger and Brown 2015; Olaison and Sørensen 2014). Moreover, it strengthens previous findings about the multi-level nature of long-term outcomes (Klimas et al. 2021; Lattacher and Wdowiak 2020; Omorede 2020) as it integrates them and provides specific examples. This stream of research is particularly appealing because the term “failure” seems to convey negative implications that are not supported by empirical findings. This indicates that positive effects are closely interwoven with negative ones.

5.1 Contributions

Our findings add several contributions to previous understanding of the EF phenomenon. First, whereas previous reviews on EF are based on qualitative, interpretative analyses (Cacciotti and Hayton 2014; Klimas et al. 2021; Lattacher and Wdowiak 2020; Olaison and Sørensen 2014; Ucbasaran et al. 2013; Wennberg and DeTienne 2014), we add to the literature by applying a mixed-method approach, which is based on bibliometric-quantitative and thematic-qualitative methodologies simultaneously. Moreover, the implementation of quantitative techniques (i.e. frequency and co-occurrence analyses) allowed us to shed some objective light on the current stock of knowledge on EF.

Second, the cluster analysis identified the predominant research themes within the field of EF. Interestingly, apart from context factors, the first stream of research focused on the causes of EF, whereas more recent research puts its attention on the effects of EF. This is why our framework focuses on this sub-field. We find support for the multi-level (environment – organization – entrepreneur) and two-sided (positive and negative) nature of EF effects in the literature. We develop prior fragmentary propositions (Bolinger and Brown 2015; Olaison and Sørensen 2014; Omorede 2020; Klimas et al. 2021) into an integrative framework of the effects of EF, which can be assigned to different levels and directions of impacts simultaneously. We expand prior views focused on selective levels (e.g. individual – Cope 2011; Spieker and Hinsz 2004), or specific types of effects like consequences/costs (e.g. Fisch and Block 2020; Ucbasaran et al. 2013; Wennberg and DeTienne 2014; Yu et al. 2020), or only on positive outcomes (Boso et al. 2019). Moreover, our framework offers a comprehensive perspective on individual effects (i.e. economic, physiological, psychological, cognitive, and social) than prior approaches (e.g. financial and emotional – Shepherd and Cardon 2009; and

financial, social and psychological – Dias and Teixeira 2017; Fisch and Block 2020; Ucbasaran et al. 2013). We also provide specific examples for a wide range of types of effects of EF, which insofar as they were recognized, were either a side area of exploration while the focus was limited to a single type, e.g. to positive psychological effects (Fisch and Block 2020) or economic ones (Cope 2011). We extend work by Wennberg and DeTienne (2014) to provide examples for individual outcomes of EF but also positive and negative outcomes for business surroundings, in particular for competitors, the entrepreneurship ecosystem and business networks. As a result, we integrate prior conceptual propositions that EF is a multi-level phenomenon ranging from the individual, through the organization, to the environment (Klimas et al. 2021), with outcomes organized by their positive or negative impact. Table 3 offers a coherent and comprehensive integration, and opens ways for further empirical scrutiny of the EF at various levels of analysis and by various types of outcomes.

Third, the quantitative analysis showed that, while research is interested in both causes and effects of EF, the EF phenomenon itself with its inner dynamics is still under-investigated. Future research should emphasize this “*middle part*” of the overall EF phenomenon due to two reasons. First, the existing abundance of definitions, conceptualizations, and operationalizations have hampered a solid understanding of EF as well as the development of its reliable measurement (Jenkins and McKelvie 2016; Lattacher and Wdowiak 2020). However, the definition of EF and its distinction from closely related phenomena have to become more unambiguous because EF, business failure, business exit, and individual exit can have both different causes and different effects. Second, there is no vacuum between the causes and effects of EF. Rather, the current black box needs to be opened and requires deeper insights about the intra-organizational and intra-personal (cognitive and emotional) processes taking place when the EF actually happens. With the multi-staged characteristic and existence of several overlapping and interfering cognitions and behaviors, it becomes apparent why EF effects are multidimensional and hard to predict.

Fourth, apart from our closer look on the effects of EF, the cluster analysis has shown the current state of research relating to the other research themes in the field. Again, the bibliometric and, thus, quantitative methodology allows for another approach to the field and its segments. As claimed by Ucbasaran et al. (2013), the clear identification of research directions can be seen as valuable for future and cumulative knowledge creation. Therefore, this paper contributes to the development of knowledge on EF as it reveals six areas of exploration in the field of EF, which may be useful in designing replication or complementary studies. The analysis of previous fields of interest allowed us to point to some novel and relevant avenues (e.g. the focus on EF measurement and EF in the context of social or digital entrepreneurship). Whereas we did not focus on all research clusters in this paper, future research can use the cluster analysis to identify further research gaps.

5.2 Limitations and Future Research Perspectives

As with all research, our study also bears some limitations. The list of search terms was limited and could potentially be extended. However, it is not obligatory to include the whole literature sample relating to a research field; a representative share of relevant articles is sufficient. Still, future research may consider including additional terms, such as adversity, setback, fiasco, or disaster.

Despite the quantitative nature of bibliometric analyses, the content analysis of the papers in the identified clusters remains a qualitative and interpretative task. Other researcher may have seen other common threads. However, we reduced this risk and enhanced the objectivity of the review by working as a research team (Archibald 2016; Kraus, Breier, and Dasí-Rodríguez 2020).

EF remains a promising area of scrutiny. The relative frequency of this event as compared to success, and the wide gaps identified through literature mapping, both encourage dedicating attention to it. We believe that EF conceptualization, measurement, and outcome scrutiny can be meaningful. Indeed, failure is part of the entrepreneurial process, and therefore stigmatizing and superficial assessment of parts of its iterations can only hurt research and practice.

One striking further research avenue relates to metrics. As indicated in the literature (Jenkins and McKelvie 2016; Lattacher and Wdowiak 2020), there is no sound measurement of EF available. None of the papers included in the thematic analysis propose any measurement or at least operationalization.

The available propositions of measurement are too narrow in reducing the EF to bankruptcy or financial failure of the entrepreneur (Kuckertz, Berger, and Prochotta 2020), or in limiting the measurement to serial entrepreneurs only (Yu et al. 2020). Also, a sole focus on for-profit firms is too narrow and should be expanded to other entrepreneurial ventures by future research as well. Given the requirements of methodological rigor (Churchill 1979), we recommend developing and validating the measurement approach using a mixed method of data analysis and an iterative process of data collection and re-collection. As EF is a complex phenomenon, it is needed to develop a comprehensive measurement approach (Cotterill 2012) including supplementary, objective and subjective indicators (Jenkins and McKelvie 2016). We encourage both perceptual measures capturing the views of those who experience failure, and objective measures that can be mobilized by an external observer.

Another research avenue relates to the effects of EF. Our study shows that prior literature concentrates mainly on learning effects, or lessons-learned. We believe it is important to investigate in depth the experiential learning process. However, we also recognize that other effects going much beyond only the learning-related ones

(Cacciotti and Hayton 2014; Klimas et al. 2021; Ucbasaran et al. 2013) are left beyond the scope of attention. A vast plethora of failure effects, at multiple levels ranging from the individual, the organization, region or industry, all invite detailed scrutiny. Moreover, as entrepreneurs do learn from failure (Boso et al. 2019; Cope 2011; Shepherd 2003; Smita Singh, Corner, and Pavlovich 2007), it would be reasoned to consider the direct or at least moderating role of the managerial, entrepreneurial, or even failure experiences (Ucbasaran et al. 2010) on EF outcomes. Following the findings on relational capability (Alves, Segatto, and De-Carli 2016), it might be that the very-long term outcomes of EF are determined by the level of failure experience.

Additionally, even in the learning process context, some interesting research avenues can be outlined. The literature provides sound evidence for the learning effect of EF (Cope 2011; Shepherd 2003), and as entrepreneurship is strongly linked with innovations (Ketchen Jr., Ireland, and Snow 2007; Zhao 2005), we suggest to investigate how failure impacts the innovation output, including different types of innovations (incremental–radical–disruptive innovations, but also co-innovations generated through cooperation and/or cooperation).

The existing stock of knowledge on EF can be divided into six interrelated areas of exploration (Figure 4). These areas represent existing research streams. By confronting these streams with the very recent trends in entrepreneurship literature, we identify future and relevant directions for cumulative knowledge creation research. First, entrepreneurship is usually linked with business performance (Rezaei and Ortt 2018), while studies on the financial effects of failure are extremely rare (Adobor 2020; Ucbasaran et al. 2013). Our findings show that financial issues, including entrepreneurial-based performance, have not attracted sufficient attention of scholars (Park, Park, and Kim 2017). Therefore, as well as following conceptual suggestions made by Wennberg and DeTienne (2014), we recommend exploring EF in the context of performance. Importantly, as EF is a complex phenomenon, resulting in wide-ranging effects (in terms of levels and timespan), we suggest exploring different types of performance (Rezaei and Ortt 2018), namely short- and long-term, as well as financial and non-financial (Folan and Browne 2005; Park, Park, and Kim 2017). In particular, as EF is experienced by entrepreneurs, it may be interesting to link it with managerial performance (Oh and Berry 2009) and managerial myopia as underlying managers' and firm performance (Czakon and Kawa 2018). In the same vein, we anticipate that innovation performance might paradoxically be increased by failure, in that it invites further iterations of refining innovative ideas and corresponding business models. Second, we suggest exploring the process of EF (Çera, Belas, and Zapletalíková 2019; Cope 2011; Jeng and Hung 2019; Walsh and Cunningham 2017) in the context of social entrepreneurship, which has gained increasing interest in very recent

entrepreneurship literature. This seems to be relevant and novel, as so far attention on social entrepreneurship in the literature has rather been paid to positive, ethical, and social issues (Gupta et al. 2020; Rey-Martí, Ribeiro-Soriano, and Palacios-Marqués 2016; Vallaster et al. 2019), leaving the failure phenomenon unexplored. Extant business venture orientation leaves many other entrepreneurial ventures, including social, cultural, etc. beyond the scope of attention. Third, another interesting context would be digital entrepreneurship, as EF is shown as an emerging and relevant topic, which just recently has started to appear in the very first conference papers (Zaheer, Breyer, and Dumay 2019). The latter would add to recent findings on the impact of EF on the digital identity of entrepreneurs (Fisch and Block 2020). The digital transformation fostered by technological development and the consequences of COVID-19 have made digital entrepreneurship particularly interesting.

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