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Entrepreneurial failure analysis using quality management approaches

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While the research into entrepreneurial failure is growing, the root causes for such failures are underexplored. This study theoretically and empirically analyzes and conceptualizes the root causes of entrepreneurial failure using total quality management methods. It synthesises the existing literature into a two-way taxonomy and illustrates the taxonomy through a content analysis of actual failure stories, followed by application of the Delphi method and quality management approaches. This study develops a comprehensive and empirically validated framework of entrepreneurial failure, and it provides a detailed picture concerning all failure root-causes which are related economic policies, legal framework and support, informal and formal education, market conditions, lack of awareness about supportive programmes, lack of competencies among team, limited financial sources, team disputes, among other things. Our results indicate that measures to increase the technical and business expertise of entrepreneurs, as well as providing avenues for the resolution of disputes among founders and other stakeholders, might yield more benefit than infusions of cash to overcome funding shortfalls. The outcomes of this study increase the awareness of root causes among key stakeholders and provide a solid foundation for formulating policies, practical solutions and interventions to overcome challenges and steer entrepreneurs away from failure.

Keywords: Entrepreneurial failure; quality management; root causes; content analysis; SMEs; qualitative analysis

1. Introduction

The entrepreneur's road to growth and success involves facing risk and dealing with uncertainties, so failure is a sad reality for many entrepreneurial ventures (Jenkins & McKelvie, 2016). In a sense, failure may be viewed as a part of the entrepreneurship process, as it also creates opportunities for learning and subsequent success (Aldrich, 1999; Cardon et al., 2010; Flores-Romero & Blackburn, 2006; Green et al., 2003; Hayward et al., 2006; Learned, 1999; McGrath et al., 1996). That said, a high rate of failure benefits neither entrepreneurs nor the society that supports them. Although research into entrepreneurial failure is increasing, knowing how the causes of failure can be analyzed and conceptualized is still uncertain (Jenkins & McKelvie, 2016). Moreover, a comprehensive or unified explanation for why failure happens is lacking. To address this knowledge gap, this study reviews how entrepreneurial failure can be conceptualized, maps the relevant literature, and analyzes the root causes of failure using both quantitative and qualitative methods drawn from total quality management. Even though the quality management solutions

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are very popular and effective in problem solving and failure analysis; however, to our knowledge, there is no study to explore and analyze the root causes of entrepreneurial failures from quality management aspects. Based on the historical data, the majority of entrepreneurial ventures and startups fail (e.g. Jenkins & McKelvie, 2016; Wagner, 2013), and there were huge losses of investment and efforts in these businesses along with the negative consequences of failure on the mental health and well-being of innovators, owners and business managers. Therefore, applying practical quality management approaches for root-cause analysis of this failure is one of the key elements of this study.

Various academic and professional studies into the failure of entrepreneurial ventures and small and medium-sized enterprises (SMEs) suggest that a diversity of factors contribute to this failure, and these factors are highly contextual (to countries and industries) and difficult to generalize (e.g. Lee et al., 2007, 2011; Mantere et al., 2013; McGrath, 1999; Shane, 2008; Watson, 2003). Such context-dependent variation makes it difficult to devise generic strategies to avoid entrepreneurial failure (Yamakawa et al., 2010, 2015). This study attempts to conceptualize and analyze these factors based on their locus (internal vs. external) and their domain (financial, managerial, product/market, and legal), and we will then seek to validate our framework using different methods.

Artinger and Powell (2016) categorize causes of failure into two groups, namely those with statistical or psychological explanations. If we view a startup as an operating entity in an ecosystem (e.g. the economy, competitors and markets, regulation, etc.), it is, statistically speaking, only natural for a portion of rational but resource-limited entrepreneurs entering risky markets to make some unforeseen error that causes them to fail and exit the industry (Artinger & Powell, 2016). Risk-taking is highly associated with a small firms' failure or survival (Llanos-Contreras et al., 2019). In this 'population ecology' view (Hannan & Freeman, 1977), the failure of an individual startup firm is a random event influenced by risk and environmental characteristics like resource availability, market demand, and competitive intensity, which may have a significant effect on the rate of entrepreneurial failure.

At an individual firm level, management theorists question the apparent randomness of failure and instead look for systematic factors that may be causing startups to fail in the hope that addressing these factors could increase the chances of success for all startups. Even if all startups face the same conditions of resource availability, market demand, and competitive intensity, they respond differently to them, which can raise or lower their chances of success. Thus psychological explanations focus on areas like entrepreneurial overconfidence and neglect of the competition. Entrepreneurs also provide different explanations for why their businesses fail, often pointing to factors inside their firms, as well as those in the external environment (Cardon et al., 2010; Morrison 2002; Weiner 1985; Yamakawa et al., 2015). Of course, It is crucial to consider the 'self-serving bias' through which entrepreneurs tend to attribute their positive outcomes to their own internal character while attributing their failures mostly to external factors (e.g. Mantere et al., 2013; Martinko et al., 2007; Rogoff et al., 2004).

Following the second approach of examining entrepreneurial failure at the individual firm level, we set the following objectives for this paper:

1. To systematically review and analyze the growing literature on entrepreneurial failure and conceptualize the 'challenges' that lead to such failure in a simple framework; and
2. To analyze empirical data from failed startups and investigate all the root causes of entrepreneurial failure and subsequently provide new theoretical explanations for how these factors contributed to the failures.

This study therefore makes two main significant contribution to the entrepreneurship and SME literature by first examining the understudied area of what causes entrepreneurial failure and advancing our understanding of the key factors involved in this failure in a more holistic picture. Second, it makes sense to view entrepreneurship as a process leading to a successful startup (the desired outcome). Yet, to the best of authors’ knowledge, this study is the first application of applying well-known total quality management methods developed for production processes to understand and analyze the root-causes of entrepreneurial failure, an important challenge highlighted in the entrepreneurship and SME literature. This study will therefore increase entrepreneurs’ and SMEs’ awareness of the causes of failure, and it will help service providers, policymakers, and other stakeholders to improve entrepreneurial ecosystems. It will also assist researchers in devising solutions and policy recommendations to overcome some of the existing challenges that startups face when trying to establish sustainable businesses.

This paper is organized as follows: Section 2 systematically reviews the relevant literature, while Section 3 derives a taxonomy for business failure. Section 4 then explains the methodology for the empirical data collection and analysis. This is followed by Section 5, which presents and discusses the results of applying three quality management methods, namely the Ishikawa diagram and the 5-Whys and Delphi method. Finally, Section 6 supplies concluding remarks and practical implications. Figure 1 shows all the main steps of this study.

2. Literature review

Existing research papers were located through database searches on the terms ‘entrepreneur’ and its synonyms (such as ‘startup’) and ‘failure’ and its synonyms (such as ‘bankrupt’). The bibliographies of these articles were then scanned to identify other articles not picked up by word search. This mix of syntactic and semantic approaches accumulated a corpus of 41 articles on entrepreneurial failure.

2.1. The locus of failure factors

The academic literature distinguishes two types of causes for business failure: internal and external factors (Klimas et al., 2021; Leonidou, 2004; Omoredede, 2020; Walsh & Cunningham, 2016; Yamakawa et al., 2015). Internal factors refer to a firm’s individual characteristics, whereas external or environmental factors lie outside a firms’ control (Cavusgil & Zou, 1994; Klimas et al., 2021). Lussier (1995) lists 15 entrepreneurial failure factors, internal to a company, such as a lack of systematic recordkeeping and financial control, youth and lack of industrial experience, lack of management experience and marketing skills, weaknesses in the business plan, lack of business partners and professional advisors (including business-owning parents), owners’ minority status or lack of college education, low-quality staff, and products and services being either too new for the market or too

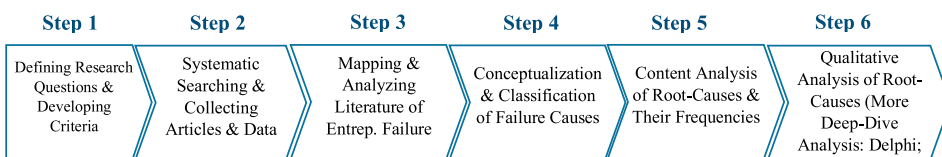


Figure 1. The process for our systematic literature review and failure analysis.

similar to existing offerings. Other internal factors that contribute to entrepreneurial failure relate to personal or psychological characteristics, such as overconfidence, neglect of competition, and myopic self-focus (Artinger & Powell, 2016; Rauch & Frese 2007). From a psychological point of view, it is also important to highlight the issue of ‘self-serving bias’ that was described earlier.

In terms of the founding management team as an internal aspect, the study of Mantere et al. (2013) shows that 21.7% of respondents took personal responsibility for the failure and agreed it was due to their inexperience in making effective decisions, the hiring of friends and relatives, and the practice and encouragement of excessive spending (Mantere et al., 2013). The studies of Goltz (2011) and Edmondson (2011), meanwhile, discuss a blame game in which staff and executives blame each other for the underperformance of a firm. Similarly, the owners tend to blame creditors, the government, or some inefficient partner. In a few cases, the inability to handle sudden entrepreneurial success can also eventually lead to startup failure (Cope, 2011). A lack of a professional entrepreneurial education and a clear vision about core business activity can also contribute to failure (Wagner, 2013). Other internal challenges include an operational structure that inhibits startups from making the best use of limited intangible resources (Lu et al., 2010) and inadequate institutional capital (Alvarez & Barney, 2007; Omoredede, 2020). Finally, the sharing of the rewards from a startup among different stakeholders can be a significant internal factor leading to entrepreneurial failure. For example, in a small firm, if an entrepreneur takes slightly more than his fair share in the beginning, it may not be important, but if he continues to do so and prioritizes greed over business development, the business will not achieve long-term sustainability (Nobel, 2011).

For the external aspects, a growing body of literature recognizes the external factors that lead to entrepreneurial failure. Lussier (1995) includes some in his list, such as inadequate startup capital and poor timing relative to the state of the economy. Klimas et al. (2021) pointed out two meso and macro levels of external factors of this failure, and Jing et al. (2016) confirmed the indirect failure effects of these external factors which are uncontrollable by entrepreneurs. Freeman (2012) predict the success and failure of entrepreneurial firms based on two factors: i) the levels of competences and resources and ii) the attractiveness of the business to the market. Based on their discussion, metropolitan areas attract more industry players with a greater intensity of competition due to this being a nexus for buyers, sellers, other businesses, and government intervention (Freeman, 2012). The authors conclude that a mixture of partnership and co-operation with government and other small businesses is critical to the survival and continuity of startups.

Another external contributor to entrepreneurial failure is excess entry, where startups often enter the market under the mistaken illusion that the ‘sky is the limit,’ only to find that the real market size is much smaller. Artinger and Powell’s experimental study found this problem to be ‘significantly greater in small, risky markets than in other market types’ (Artinger & Powell, 2016). This may be compounded by poor product differentiation and the inability to adjust a product or service in response to customer feedback (Cope, 2011; Wagner, 2013). Anderson et al. (2006) identified poor managerial networks, including subcontracting relationships (Audretsch & Thurik, 2001) and inter-firm networks (Harvie 2010), as another external factor that potentially contributes to the failure of new firms.

The internal vs. external locus of failure factors is consistent with the classical literature on organizational form. The separation of factors arising within the structure (hierarchy) of a particular firm from those impacting multiple firms (in a market) at a point in time is mostly clear-cut (Williamson, 1973), except in cases where the hierarchy and market

forms merge into a network with some properties of both (Thorelli, 1986). In such cases, we have gone with the exclusive definition of internal, privileging those in the hierarchy (i. e. on the payroll) over those connected through arms-length contracts even if the latter persist over time.

2.1.1. *Domains of failure factors*

In addition to the internal–external dichotomy, our review suggests that causes of entrepreneurial failure can be conceptualized and classified in terms of the business domain they arise from, such as financial, organizational, product-market, and legal aspects. Thus, the variables in the Lussier (1995) business failure prediction model can be classified into these business domains. For example, inadequate startup capital and a lack of systematic recordkeeping and financial control would fall into the financial domain, while the founders' lack of management experience and weaknesses in the business plan/strategy would fall under the managerial or organizational domain. The product-market domain, meanwhile, encompasses the suitability of a product/service for meeting customer needs and its differentiation from rival products. The importance of the marketing mix for the success of new products and services is also well known (Cope 2011; Wagner, 2013). Lussier does not explicitly include variables from the legal domain, but the controversies surrounding successful startups such as Uber, Airbnb, and Facebook remind us that the legality of new products or services and the ownership of intellectual property is often contested, so legal issues must be managed carefully by startups to ensure success. The legal domain is also emphasized in the 'Ease of Doing Business' measures that have been popularized by the World Bank (2017).

The classification of startup failure factors by domains is based on an inductive process that began with the application of Lussier's (1995) taxonomy to a collection of 114 stories of startup failure as told by their founders (CBInsights.com). Unlike most mainstream media that focus on success stories, or failures as dissected by outside experts, the CBInsights website holds accounts contributed by the founders of failed startups. While Lussier's categories were encountered repeatedly in the texts of the founders' accounts, confirming their face validity, we found other factors behind startup failure as well. Seeking a scheme more parsimonious than Lussier's 15 factors, we collapsed the factors (and the additions found from the analysis of the founders' stories) into a smaller set that could still account for the majority of startup failures. By progressively agglomerating factors into domains (analogous to cluster analysis of quantitative data) we arrived at a set of four domains that account for most of the failure factors noted by Lussier and observed in the founders' data: financial, managerial, product-market and legal. We note that our four-way taxonomy also subsumes most of the 12 categories derived by the CBInsight website's own analysis of the founder data:

Ran out of cash/failed to raise new capital, No market need, Got outcompeted, Flawed business model, Regulatory/legal challenges, Pricing/cost issues, Not the right team, Product mistimed, Poor product, Disharmony among team/investors, Pivot gone bad, Burned out/lacked passion (CB Insights, 2021).

Table 1 summarizes the existing literature and classifies causes into four business domains: financial, organizational, product-market, and legal. A single study can involve multiple domains, so some studies appear in multiple columns in Table 1. As this table shows, managerial or organizational factors are the most frequently cited causes (35 out of 41 articles). This is followed by financial factors (22 articles),

Table 1. List of articles studying entrepreneurship failure based on the four categories of causes.

No.	Article (author(s), year)	Financial	Managerial	Product-Market	Legal
1	Artinger & Powell, 2016	–	F	F	–
2	Barsely & Kleiner, 1990	F	F	–	–
3	Bruno et al., 1987	F	F	F	–
4	Cardon et al., 2011	F	F	F	–
5	Cooper et al., 1990	F	F	F	–
6	Cooper et al., 1991	F	F	N	–
7	Cope, 2011	–	–	F	–
8	Crawford, 1974	–	F	N	–
9	Cressy, 2006	F	F	–	–
10	Dun & Bradstreet, 1993	F	F	F	–
11	Everett & Watson, 1998	–	–	F	–
12	Flahvin, 1985	F	F	–	–
13	Gaskill et al., 1993	N	F	F	–
14	Ghosh et al., 2001	F	F	F	–
15	Hoad & Rosco, 1964	–	F	–	–
16	Jenkins & McKelvie, 2016	F	F	–	F
17	Kennedy, 1985	F	F	F	–
18	Khelil, 2016	F	F	–	–
19	Lauzen, 1985	F	F	–	–
20	Lussier & Halabi, 2010	N	N	N	–
21	Lussier & Pfeifer, 2001	N	F	N	–
22	Lussier, 1995	N	F	N	–
23	Mantere et al., 2013	–	F	–	–
24	McGrath, 1999	F	–	–	–
25	McQueen, 1989	F	F	F	–
26	Rauch & Frese, 2000	–	F	–	–
27	Reynolds et al., 1989	F	F	F	–
28	Reynolds, 1987	F	F	F	–
29	Sage, 1993	F	F	–	–
30	Santarelli & Vivarelli, 2007	–	F	F	–
31	Simmons et al., 2014	–	–	–	F
32	Sommers & Koc, 1987	–	F	–	–
33	Siow Song Teng et al., 2011	–	F	F	–
34	Thomson, 1988	N	F	F	–
35	Vesper, 1990	F	F	F	–
36	Wagner, 2013	–	–	F	–
37	Walsh & Cunningham, 2016	–	F	F	F
38	Wight, 1985	F	F	–	–
39	Wiklund et al., 2009	F	F	–	–
40	Wood, 1989	–	F	–	–
41	Yamakawa et al., 2015	F	F	F	–
	TOTAL (F's)	22	35	20	3

Note: (F means significant positive impact of financial, managerial (organizational), product-market or legal issues on failure; N means no significant impact).

product-market (20 articles), and legal factors (three articles). The clear implication of this analysis is that firms should improve their leadership and managerial skills, team capacity, and coordination, and they should develop effective strategies and long-term plans that will be followed by all stakeholders. In terms of finance, new firms face two main challenges: obtaining the required funds and using the collected funds. New ventures need capital for growth, and this is usually obtained through debt or equity financing. Access to sources of finance varies greatly across countries. While

new firms in developed economies may have access to various private and public sources, firms in developing economies often experience limited access to funding sources. This challenge is more pronounced in early-stage ventures, which may have strong growth potential but no assets that can be collateralized. Professional training can help a management team to apply effective financial management and control.

The product-market domain is mainly about delivering the right product or service to the right customer at the right time and place (i.e. bring value). If there is no market for a product or service, or if it cannot easily compete in a market, the firm will fail.

3. Business failure classification

As shown above, the literature studying the causes of entrepreneurial failure can be conceptualized and categorized using:

1. The locus of the failure factor, specifically whether it arises within the business itself or from the environment outside the venture; and
2. Business domains, namely financial, organisational, product-market, and legal areas.

The intersection of these two dimensions, locus and domain, results in a grid within which most of the existing literature’s causes of entrepreneurial failure can be positioned (see Table 2).

This study proposes that the locus × domain grid provides a generalizable framework through which to conceptualize and organize factors behind entrepreneurial failure, as identified in the existing research. This framework was analyzed using real-world data for entrepreneurial failure, followed by three effective quality management methods, namely a fishbone diagram and 5-Whys analysis and the Delphi method, to investigate the root causes of failure. The cells of the conceptualised grid are discussed briefly below.

1.1 Use of funds: The rapid depletion of limited funds is a key reason for firms failing. This ‘cash burn’ may occur due to heavy spending on product development or promotion or founders awarding themselves extravagant salaries and benefits. The urgency to reach the market puts the organisation in project mode, where a focus on deadlines precludes any careful analysis of cost-effectiveness, thus making over-spending more likely.

1.2 Source of funds: Most startups are not creditworthy enough for large loans from commercial banks, so they must rely on other sources of funding. Venture capitalists and angel investors are well established solutions, but only in some regions; in other regions,

Table 2. Categorization of the challenges facing entrepreneurs.

Domain Locus	Financial	Organizational	Product- Market	Legal
Internal	1.1. Use of funds	2. Management team 2.1. Capacity 2.2.Coordination Strategy	3.1. Product	4.1. Litigation
External	1.2. Source of funds	2.4. Network	3.2. Market 3.3. Macro- economy	4.2. Regulation

founders must rely upon personal or family savings and possibly even credit card debt. Once these funds run out, a startup may have no choice but to wind up the business.

2.1 Management team capacity: The founding team (including any top-management hires) may lack the expertise and experience to lead a startup in areas like securing financing, developing the product or service, marketing, and engaging with regulators. Startups led by such a team often fail to bring the product or service to market on time, gain sufficient market share, or deal satisfactorily with other stakeholders.

2.2 Management coordination: Even when individual founders may have a good history of accomplishment, they may not share the same vision for the startup, management style, or expectation of rewards. Conflict among founders slows or even stalls work within the startup and diminishes staff morale, inevitably leading to missed deadlines, high employee turnover, and an eventual failure to deliver the product or service on time.

2.3 Management strategy: A startup needs a coherent strategy to guide its actions, one that is appropriate for its own capabilities and the competitive landscape. A failure to formulate, articulate, and execute a strategy can cause a startup to lose sight of its priorities and simply drift while still consuming resources.

2.4 Network: The internal management capabilities can be supplemented by external networks of advisors, suppliers, sub-contractors, and providers of complementary products or services. A lack of support from a network forces a startup to go it alone, thus increasing risk of failure.

3.1 Product: Startups rarely have the luxury of conducting detailed market research before launching their products or services, so how well their offerings fit with consumer needs and preferences always incurs a measure of uncertainty. Products must meet consumer expectations in terms of design, build quality, aesthetics, and a variety of other criteria that guide purchasing decisions, while services must be convenient and reliable to gain customer acceptance.

3.2 Market: Every startup launches its product or service into a market populated by existing competitors and their consumers. The response of incumbent firms and consumers' relationship with them (i.e. their willingness to try a new offering) has a significant effect on a new entrant's outcomes. A fragmented market with no clear leader and low switching costs for customers will present very different challenges when compared to a market dominated by a leading firm and substantial switching costs for customers. Market conditions can easily make the difference between success and failure for a startup.

3.3 Macroeconomy: A favourable macroeconomic context makes it easier for a startup to gain new customers, because they will tend to have more disposable income to spend on the product or service. General optimism about the economy also makes it easier for a startup to acquire funds for its ongoing operations. The reverse holds true in times of recession, when consumers often cut back on discretionary spending.

4.1 Litigation: Any intellectual property underlying a startup's product or service might be contested by incumbent firms or other parties. In technology-intensive industries like electronics and pharmaceuticals, it is common for incumbent firms to develop 'patent thickets' to discourage new entrants, and they may aggressively sue any new entrants that infringe upon their intellectual property. A startup might also be sued by parties questioning the efficacy or safety of its product or service, or some parties may perceive potential bias against certain groups in the provision of the product or service.

4.2 Regulation: Most industries – such as the food, drug, transportation, communications, and energy industries – are regulated to some extent to protect the public interest, so a startup must comply with regulatory requirements when setting up a new business.

Table 3. Existing literature on entrepreneurial failure mapped to the grid of ‘failure factors’.

Domain Locus	Financial	Organizational	Product-Market	Legal
Internal	1.1. Use of funds – Cardon et al., 2011 – Jenkins & McKelvie, 2016	2. Management team 2.1. Capacity – Lussier, 1995 – Mantere et al., 2013 – Jenkins & McKelvie, 2016 2.2 Coordination – Goltz, 2011 – Edmondson, 2011 2.3 Strategy – Nobel, 2011 – Wagner, 2013	3.1. Product – Lussier, 1995 – Cope, 2011 – Wagner, 2013	4.1. Litigation – Jenkins & McKelvie, 2016
External	1.2. Source of funds – Lussier, 1995 – Cardon et al., 2011	2.4. Network – Lussier, 1995 – Audretsch & Thurik, 2001 – Anderson et al., 2006 – Alvarez & Barney, 2007 – Harvie, 2019 – Freeman, 2012	3.2. Market – Cavusgil & Zou, 1994 – Artinger & Powell, 2016 – Lu et al., 2010 – Cardon et al., 2011 3.3. Macro- economy – Lussier, 1995	4.2. Regulation

Jumping headlong into a market without regard for regulation raises the risk of penalties or outright disqualification being imposed by regulators. Even if the startup still gains some market share, the impact of potential regulatory action may discourage further adoption. To make matters worse, the regulatory environment shifts over time, and products and practices once deemed acceptable might face adverse scrutiny later.

Table 3 shows a mapping of the literature’s coverage of entrepreneurial failure to the cells of our conceptual grid from Table 2. Some authors focus on a particular cell in this grid. For example, Audretsch and Thurik, (2001) focuses on networks, while Nobel (2011) focuses on strategy. Other authors cover a number of cells. For example, Lussier (1995) lists 15 types of factors that cause entrepreneurial failure, with them spanning issues of financing sources, management team capacity, product characteristics, and the macroeconomy.

4. Methodology

This study started by identifying all keywords relevant to the subject (Tranfield et al. 2003) and searching different databases – Web of Science, SCOPUS, Google Scholar, JSTOR, and ProQuest – to extract relevant articles. It started with Crawford (1974) as a starting point for discussing entrepreneurial failure (Lussier, 1995). This study also applied different combinations of terms to ensure we did not miss any critical items. After conceptualizing, mapping, and analyzing the entire body of research literature for entrepreneurial failure (see Section 2), it analyzed failure factors through the content analysis of a

repository of stories written by the founders of failed startups (i.e. self-reported scripts), including what they had learned from their failure. As highlighted in the introduction, it is important to be aware of possible ‘self-serving bias,’ yet these ‘failure stories’ can still give us insights into how often the founders of failed startups pointed to one or more of our four major causes of failure, as well as their sub-categories, for being at least partly responsible for their troubles.

Our content analysis began with the recollections of failure from entrepreneurs and SME owners. Our information repository of self-reported failure stories comprised 134 distinct entries that were retrieved from CB Insights (2015), but 20 of these entries had insufficient text (at least one sentence) for analysis, and a further 17 were written by the press about failed ventures. However, the press-written articles did make extensive use of verbatim quotes from the founders, thus providing access to their ‘voices,’ so we decided to include them in our data set for analysis, along with the other 97 self-written accounts. A close reading of the experiences of failed startups helped to confirm and analyze the four categories of failure factors that we extracted from the literature review. We summarize below the main features we discovered in the founders’ stories. In the narrative below, we have inserted the categories of failure most closely related to each section of the narrative within angle brackets (i.e. <... >).

Many startups simply fail to find sufficient financial backing beyond the personal savings of the founders and their families and friends to execute their business plans, and many that do secure initial funding fail to meet financiers’ expectations for providing additional funds <1.2 Sources of funds>. For those with access to adequate funding, excessive spending – usually on employee compensation, outsourced software development, and marketing, but also sometimes on frivolous items – is a common contributing factor to failure. The rush to reach the market quickly at any cost is often incompatible with a deliberate search for cost-effective solutions, leading to overspending and eventual insolvency <1.1 Use of funds>.

On the organisational front, founders are rarely skilled in running a business, even at an SME level. The number and variety of issues even a small business faces – such as operations, keeping accounts, hiring and retaining talent, and complying with regulations – all take time and attention away from the founders’ goal of bringing a product or service to market as soon as possible. Founders with technical backgrounds particularly struggle with such management issues <2.1 Capacity>. Sharing tasks among members of the management team in line with their skills and expertise while maintaining an equitable division of labour is often new to the founders of startups, and few of them deal well with this challenge <2.2 Coordination>. Differences in vision among members of the management team also often hinder the formulation of strategy, and the compromise strategy that emerges often lacks clarity and coherence, thus reducing the chances of achieving success in the marketplace or receiving continued funding. Strategy in entrepreneurial firms is often emergent rather than deliberate, and the potential exists for drift in unplanned directions, in pursuit of unexpected opportunities or flight from threats that arise without warning. Such strategic drift could distract the management of entrepreneurial firms from their original objectives, and neglect of these objectives could prove fatal. <2.3 Strategy>. Most startups are also resource-limited, and rely on a network of business partners to enable execution of their strategies. Reliable access to these resources at favourable cost often goes a long way towards assuring the viability of a startup’s business. In addition to resources, external networks of advisors, suppliers, and complementary providers can supplement internal

management capabilities, hence the lack of such networks has a detrimental effect on startup survival and success <2.4 Network>.

Product-market uncertainties plague most startups, which generally lack money for systematic market research, so founders must guess which features of a product or service will attract potential customers the most and how much they would be willing to pay for them, as well as the size of the target market. Products fail when these guesses do not match the reality. Customers may not (yet) have a need for the startup's offering, or they might only be willing to pay little, if anything, for it <3.1 Product>. The response of incumbent competitors is difficult to anticipate, and deep-pocketed competitors (who are often incumbents) may subsidize a product to sell it cheap or even give it away, which will devalue it in the eyes of potential customers and make them reluctant to pay for it. It may be difficult to reach potential customers without spending on advertising and promotion, but such resources might not be available <3.2 Market>. Shifting macro-economic conditions, particularly recessions, also affect some products (e.g. luxury products) more than others, so they represent yet another dimension of product-market uncertainty <3.3 Macro-economy>.

Finally, innovative products and services often have to contend with legal challenges from various parties. Sometimes the legality of an offering itself may be called into question (e.g. Airbnb and Uber), leading to the product or service being declared unlawful in some jurisdictions <4.2 Regulation>. In other cases, competitors might claim that a startup has used its intellectual property without permission, thus pressurising the startup to withdraw the product or pay royalties to the patent holder <4.1 Litigation>. The associated legal costs can be onerous for any business, but they are especially damaging for startups, which need to allocate their limited funds to more productive uses.

Search terms: The development of search terms for content analysis was a process of marrying the conceptual categories (finances, management team, product-market and legal) with the vocabulary used by the founders of failed enterprises in recounting their own experiences. After a couple of iterations through the theoretical concepts (obtained by crossing the four business domains and the locus – internal or external – of factors) and our growing list of search terms obtained from reading the founders' stories, we settled on the following list of search terms that span the 11 cells of our taxonomy. They represent our attempt to reconcile the theory-directed etic concepts of business failure from the research literature with the founder-experienced etic categories related to failures in entrepreneurship (Hsieh & Shannon, 2005; Krippendorff, 1980).

As we were interested in the occurrence of particular terms rather than their numerical frequencies, we tried our best to be inclusive in our choice of search terms. Stemming, alternative completions of a partial term, such as 'finance' and 'financial,' was used wherever possible to include variants of the search terms.

1. Finances: Sources of funds (*search terms*: funds, funding, finances, financing, invest, investor, investment, debt, debtor, capital) and use of funds (*search terms*: money, monetary, monetize, cash, spend, expenses, spending, credit, creditor, revenue, loss, accounts, accounting)
2. Management team: Capacity in terms of the education, skill, knowledge, expertise, passion, and talent of the team (*search terms*: team, educated, education, skill, skilled, knowledge, knowledgeable, experience, experienced, expert, expertise, talent, talented, passion, passionate); coordination, of lack thereof, among team members (*search terms*: conflict, disagree, disagreement, fight, discord, greed, death); strategy planning and implementation (*search terms*: strategy, strategize,

- plan, planning, execute, execution); and external networks to supplement internal management capability (*search terms*: partner, network, raw material)
3. Product-Market: Product/service characteristics like innovation, differentiation, marketing (*search terms*: customer, innovation, innovative, differentiation, marketing); market characteristics like competition in the market and related markets for the product (*search terms*: competition, competitor, rival); and the macro-economic environment (*search terms*: environment, economy, economic, demand, uncertainty, recession)
 4. Legal: Litigation in the form of a firm's encounters with the law (*search terms*: law, legal, court, dispute, fraud, theft) and regulation in terms of laws and regulations applicable to the product (*search terms*: policy, regulated, regulation, regulator, import)

Next, we searched the 114 entrepreneurial failure stories, as told by their founders, for mentions of the following 11 categories of failure factors. As we were interested only in the occurrence of failure factors, we counted only the first mention of each factor, subsequent mentions of the same factor in the same story did not add to our tally. Appendix A illustrates the word cloud of our content analysis.

The failure factors and their root causes could then be further analyzed on a more detailed level and from different perspectives using experts' opinions, among other inputs. To the extent that entrepreneurship is a 'production' process aimed at producing a successful startup (the desired outcome), TQM techniques can guide the search for factors that lead the process astray.

This study applied two effective quality management methods, namely a fishbone diagram and the 5-Whys method. These are effective and popular methods in manufacturing and service quality management. The fishbone, Ishikawa, or cause-and-effects diagram employs a structured approach and provides a systematic way of looking at the effect of failure and identifying the root causes from different dimensions that contributed to this failure (Watson, 2004). The 5-Whys method, meanwhile, starts with a failure and then moves backward by asking and answering five why-based questions to discover the root causes. Root-cause analysis with corrective actions is popular for solving manufacturing problems in world-class organizations (Pylipow & Royall, 2001). The 5-Why method was first developed as a popular problem-solving concept in lean manufacturing by Taiichi Ohno, the father of Toyota Production System (TPS) in Japan (Alukal, 2007), as he observed frequent mistakes in Toyota's production line (Ohno, 1988). He started using the 5-Whys method to address these mistakes through a root-cause analysis (Ohno, 1988). A well-executed 5-Whys analysis can be considered as both a corrective and a preventive action. This qualitative yet powerful method enables the root causes to be accurately identified, so effective solutions and recommendations to mitigate entrepreneurial failure rates can be explored.

The root-cause analysis in the 5-Whys model was completed based on the literature review and content analysis, which was then followed by an effective implementation of the Delphi method to obtain four experts' input about the root causes of the various failure factors. Our fishbone diagram and 5-Whys analysis were completed based on our formal focus group study facilitated by the authors among 20 key entrepreneurs and key stakeholders in 2018 first. The attendees were from government, service providers, incubators, financial institutions and entrepreneurs. After developing our fishbone and 5-Whys models, this study applied Delphi method, the repetitive process of obtaining, aggregating feedback and refining the outcomes. The team includes four subject matter experts in innovation and entrepreneurship fields who are active entrepreneurs, trainers, coaches and mentors in this

field. The initial portion of the 5-Whys results was shared with this panel of experts in order to solicit their anonymous input over several rounds. In each round, their responses were aggregated, normalized, and shared again with the panel members for further input.

5. Results and discussion

As indicated earlier, our primary data for content analysis consisted of a repository of information where the founders of 114 failed startups described their experiences in their own words, including what they learned from their failures. A content analysis of these ‘failure stories’ gave us effective insight into how often the founders of failed startups pointed to one or more of our four major failure factors (and the two sub-categories of each factor) as being at least partly responsible for their troubles. Our unit of analysis is the individual story which may range from a few lines to several hundred lines.

The entire process of text search was implemented in a large table in Microsoft Excel, the spreadsheet package. Excel’s string functions provide a fine-grained approach to detecting the occurrence of target strings in a cell of the spreadsheet. In modern versions of the software, each cell can comfortably hold the text of an entire story of hundreds of lines. Managing the stories data in a spreadsheet may seem unnatural at first, but it allowed us to keep a bird’s-eye view of the relative importance of the different failure factors, as well as the global impact of any changes in our search terms.

Table 4 below shows the occurrence (absence / presence) of the different categories in the founders’ stories.

The causes we postulated for entrepreneurial failure clearly loomed large for the founders whose businesses collapsed, with most of the accounts citing them as contributors to their failures. We can see that all four categories are frequently identified as causes by the founders of failed startups. Overall, we find solid support for our conceptualization of entrepreneurial failure, as identified through the literature review, in the naturalistic discourse where startup founders speak about their failed businesses and the lessons they learned. Over a hundred founders’ accounts, out of a total of 114, mentioned the first three categories – namely finances, management team, and product-market – as salient

Table 4. Frequency (count) of factors in founders’ accounts of entrepreneurial failure.

Number	Factor	Number of stories
1	Finances	106
1.1	Use of funds	101
1.2	Sources of funds	89
2	Management Team	107
2.1	Capacity	101
2.2	Coordination	40
2.3	Strategy	75
2.4	Network	65
3	Product-Market	102
3.1	Product	80
3.2	Market	39
3.3	Macro-economy	37
4	Legal	68
4.1	Litigation	25
4.2	Regulation	53
TOTAL STORIES		114

causes of failure. The fourth category, legal issues, was cited by almost 60% of the founders as contributing to their failures.

Content analysis also reveals the co-occurrence of the four types of failure factors. Almost all (98%) of the founders in our sample reported a combination of two or more factors. Furthermore, over 70% of failed startups cited a combination of two of the financial, management team, and product-market factors, while 68% reported a combination of three factors. In the conclusions, we discuss the implications of how these failure factors seemed to occur concurrently.

Once the entrepreneurial failure factors had been analyzed and validated, this study took up the issue of how they ‘worked’ to cause failure. We view failure as a *defect* in the entrepreneurship process, so we could apply standard quality management practices to trace, map, and analyze the root causes of the failure. Figure 2 shows the fishbone diagram analysis. The fishbone, or cause-and-effects, diagram is an effective and popular tool for identifying and analyzing the root causes of defects or failures, and it helps to redefine a problem statement as a chain of causes and effects. A fishbone diagram comprises main branches and sub-branches as causes, with as many sub-levels as required to reach the root causes, and this reveals key relationships among assorted variables. In this study, the fishbone diagram was built based on the literature and content analysis. As Figure 2 illustrates, for each detailed failure segment, some root causes or factors are involved. For instance, in the economy/environment category of failure, economic recession, pricing relative to purchasing power, and environmental factors (i.e. global, political/legal, technological changes) are identified as the main root causes. Each cause can be further analyzed and traced back to find the root causes, the source of the symptoms, often using the 5-Whys methods and a panel of experts. In this technique, the ‘Why?’ question is asked repeatedly (five times for each instance of failure cause). This

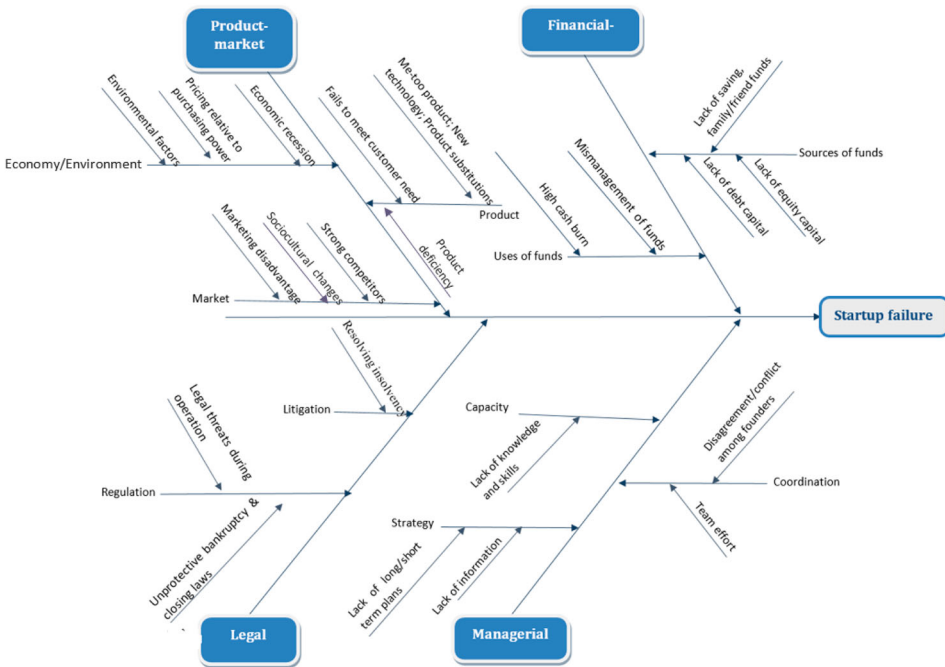


Figure 2. Fishbone diagram for the root causes of entrepreneurial failure.

Table 5. Analyzing the root causes of entrepreneurial failure through the 5-whys approach.

Category	Failure factor	Why? (1)	Why? (2)	Why? (3)	Why? (4)	Why? (5)
FINANCE	1.1. Sources of funds	Lack of investible savings, family/ friend funds	Fresh graduate; Low-income family; Lack of legacy (heir) from previous generation	Macro-economic issues; Lack of education/ professional skills	Economic development challenges; Inequalities: Lack of opportunities for professional education/ training	History; Economic policies; Poor educational system
		Lack of debt capital	Lack of collateral/credit for debt financing	Lack of physical assets; Low-income family; Fresh graduate (no experience to build credit); Unsupportive regulations for accepting intangible or movable assets	Lack of enough income to buy assets; Macro-economic issues; Lack of education/ professional skills, lack of experience; High risk of investment (security concerns) by lenders	Economic development; Non-supportive legal framework/ infrastructure for reasonable estimates of assets and accepting other asset types
			Weakness in personal or business credit bureau system	Lack of robust info system to collect & analyze historical financial data	Lack of awareness & support to design & implement this process, due to the lack of data; security concerns.	Lack of knowledge, discussion about benefits of credit bureau system
			High transaction costs	High risk & less incentives for lenders to provide funds for Startups	Opportunity for large financial inst. to deal with larger enterprises and earn more with less risk vs. dealing with small but high risky firms	The scale and activities of Startups do not encourage lenders to focus on them
	Lack of equity capital	Lack of venture capital, private equity,	Lack of legal & physical platform for them to	Lack of supportive regulations; Unreadiness of	Economic development/ policies; Lack of awareness about	

(Continued)

Table 5. Continued.

Category	Failure factor	Why? (1)	Why? (2)	Why? (3)	Why? (4)	Why? (5)
			investment angel, crowdfunding funds	work effectively in many locations	infrastructure & economy; uncompetitive & unsafe environment for inv.	equity funds impacts/benefits
			Undeveloped capital markets	The legal limitations may not support Startups' IPO or stock markets for Startups; Risk aversion nature of conventional markets	Regulatory deficit to support Startups' IPO or dedicated market for Startups	Regulatory framework/platform limitations
	1.2. Use of funds	High cash burn	High costs	High rents, wages; licenses/royalty costs	Macro-economy; Weak business model; low financial feasibility of the business	Optimistic mindset; Economic policies
		Mismanagement of funds	Poor financial planning/analysis; Misappropriation of funds	Lack of financial training; Weak financial controls	Education of founders; Training opportunities; Shortage of accountants	Business / accounting education sector; Entrepreneur training
MANAGEMENT	2.1. Team Capacity	Lack of knowledge and skills	Education of founders;	Educational opportunities; Entrepreneurial training	Poor education system; Poor Entrepreneurship culture & support	High costs; Lack of awareness about entrep.
			Insufficient experience of founders	Lack of opportunities for experiential learning	High entry barriers; High cost of failure	High costs; Lack of awareness about entrep.
			Un(der)-qualified team members	Lack of talent; Lack of team development plan & performance review	Poor education system; Poor entrepreneurship culture; Lack of team management experience/expertise	Lack of entrepreneurship training/awareness; Lack of management training
	2.2.	Disagreement/	Divergent knowledge &	Lack of entrepreneurial training (team-	Poor entrepreneurship culture & support; Lack	Lack of entrepreneurship training; Lack of

PRODUCT-MARKET	Team Coordination	conflict among founders	experiences; Divergent goals	building); Lack of formal partnership/ founders' agreement Regulatory deficit (for shared ownership)	of management experience/expertise Regulatory framework issue	management training/ opportunities Lack of attorney; Weak legal support for Startups; Educational opportunities; Poor entrepreneurial training
		Team effort	Weak incentives	Lack of knowledge and skills of team-working; Lack of team development plan & performance review	Education of founders; Lack of team management experience/expertise	Educational opportunities; Entrepreneur training; Management training/ opportunities
	2.3. Strategy	Lack of long/short term plans	Lack of knowledge/skills about the roles of strategic & operational planning	Lack of management experience/expertise	Education opportunities; Entrepreneur training; Management training; Lack of opportunities for experimental learning	Poor education system; Poor entrepreneurship culture; High costs of failure
	3.1. Economy/ Environment	Lack of information Macro-economy; Pricing relative to purchasing power	Market data availability issue High cost of production	Weak public systems for data gathering High material cost; High labour cost	Lack of infrastructure; Economic policies Macro-economic issue; Weak business model; low financial feasibility of the business	Resource constraints; Quality of governance Optimistic mindset; Economic policies
		Economic recession	Recession in the global, regional, or national markets; Shortage of funds; Reduction of government/customer expenditure or demand	Low performance of national economy & financial sectors; Economic crises; Price reduction of commodities (e.g.	Changes in various socioeconomic factors, global conflicts, war, sanctions, ...	Political, economic or cultural changes; Instability of political, social or economic conditions of a nation or regions; combats/ conflicts

(Continued)

Table 5. Continued.

Category	Failure factor	Why? (1)	Why? (2)	Why? (3)	Why? (4)	Why? (5)
		Environmental factors	New restrictions/rules because of environmental factors/ climate change; Socio-political changes	crude oil, natural resources, ...) Reducing pollutions, global warming; Establishing more sustainable economy/ society; Sociopolitical changes (e.g. new election, gov. failure, conflicts, combats, ...)	Sustainable development plans; Other public/ government expectations or forces	Elections & political changes; Demographical changes; New development plans
3.2. Product deficiency	Fails to meet customer need	Inappropriate design; Poor realization of concept	Inadequate research; Lack of knowledge, skills	Lack of funds & resources; Education of founders and team	Lack of expertise; Issue to access to finance (saving, debt/equity funds); Education system	
	Me-too product; New technology; Product substitutions	Lack of innovation, differentiation (cost, quality, function, ...)	Inadequate research & development efforts; Lack of knowledge, skills	Lack of funds; Lack of expertise (basic innovation management skills)	No access to finance; Education system	
3.3. Market challenges	Strong competitors	Existing rivals & their forces; Market share; Reputation	Power of existing rivals and their barriers for new entrants	More stability/power of existing rivals to keep their loyal customers, attract new customers, put barriers to new entrants (using econ of scales, reducing prices, more advertisement/ promotion ...)	Nature of competition; Stability & power of incumbent firms (rivals)	
	Demographic Change;	Immigration; Population aging; Education; Income level change	Combats/Conflicts; health & education; Economic	National and international political changes/ challenges;	National, regional and international changes/ challenges;	

		Sociocultural Change/Shift	(negative or positive changes)	development/failure; sustainable development	Improved the systems of health, education, ... Economic & non-economic policies (national & int'l)	Improved policies/regulations/gov. expenditure
		Marketing disadvantage	Insufficient spending for marketing/ad., Insufficient experience, knowledge & skills	Lack of funds; Education/expertise of founders and team	No access to finance (savings, debt and equity financing); Business/accounting education sector	Economic development/policies; Educational opportunities; Entrepreneur training;
LEGAL	4.1. Litigation	Resolving insolvency	Disputes about profit-sharing & other internal affairs	Ambiguous contract provisions	Insufficient attention to legal matters; no founder agreement; no standard	Lack of attorney; Lack of knowledge/management experience; Lack of funds
	4.2. Regulation	Legal threats during operation	Complicated legal process for simple business disputes Questions about legality of product	Criminal law enforcement; No arbitration process Conflict with laws and societal values; Opposition from entrenched interests	Regulatory deficit Inadequate research; Feature of business model (e.g. disintermediation)	Legal system limitations Lack of attorney; Lack of knowledge/management experience; Lack of funds
			Intellectual property issues	Patent infringement	Anti-competitive actions of competitors (e.g. patent trolls / thickets); Unawareness of their IPs & IP laws	Regulatory deficit (anti-trust ...); Lack of knowledge & training about IPs & IP laws
			Regulatory change; New regulations	Environmental, political, social changes; New trade agreements; Suspension of existing agreements	Economic development; Sustainable development	National & international policies
		Unprotective bankruptcy & closing laws	Criminal bankruptcy & closing law	Lack of bankruptcy protection from creditors	Regulatory deficit for Startups activities	Legal system limitations

study undertakes a 5-Whys analysis to analyze the root causes on a deeper level in order to understand how these factors may have made their postulated contribution toward entrepreneurial failure. A panel of four experts, entrepreneurs and researchers of entrepreneurship and business management were involved to complete the analysis through the Delphi method, as explained earlier. [Table 5](#) illustrates our qualitative analysis using the 5-Whys approach, and it reveals that the root causes of all failure factors are limited to some key issues:

1. A number of failure factors are rooted in current and historical economic policies, such as the quality of governance and the current state of economic development. Although these are not immutable, they change relatively slowly at the level of the overall economy.
2. Some failure factors could be remedied by a shift in the state's education policies, particularly with respect to business education, as well as new initiatives in entrepreneurship and business-management training.
3. Tough market competition and a lack of innovation or technical expertise to improve products or services are key causes of market or product failure.
4. Relatively few failure factors are likely to be remedied by a direct infusion of cash into startups.
5. The lack of a supportive legal framework or suitable attorneys for insolvency resolutions, on the national and firm level, to support entrepreneurial activities and solve disputes is highlighted as the cause of many failures. In addition to external disputes and legal challenges, entrepreneurial ventures may experience internal conflicts among team members, owners, and other stakeholders.
6. Some failure factors arise from a lack of awareness about effective training and the critical role it plays in business success and the availability of funds and other services. Entrepreneurs and SME owners should be equipped with diverse business-management skills and the ability to effectively manage their teams, operations, markets, and funds. Some managers or owners are not aware of the necessity of these skills and concepts for business success.

6. Conclusion and implications

This study provides the first comprehensive and empirically sound assessment of entrepreneurial failure by providing a theoretical and conceptual framework of this failure, and examining this framework using content analysis against real failure cases and quality management approaches. The research makes various theoretical contributions in both areas of quality management and entrepreneurship. First, to the best of authors' knowledge, this study is the first examination of applying well-known total quality management methods in understanding and analyzing the root-causes of entrepreneurial failure, as an important challenge highlighted in the entrepreneurship and SME literature.

Second, this research builds upon the relatively small but dispersed previous studies into entrepreneurial failure, and it further advances our understanding of the key factors involved in this failure in a more holistic picture. Using the real failure stories of former entrepreneurial ventures and small businesses, we could develop an early but comprehensive assessment of their failure. This study addresses two major gaps in the literature by 1) developing a comprehensive and empirically validated framework of entrepreneurial failure, 2) applying total quality management approach for analyzing this failure, thus

enabling a more rigorous evaluation of the association between the main failure factors and their root causes.

The study began by mapping and conceptualizing the literature covering entrepreneurial failure and then analyzing the root causes of such failure using both quantitative and qualitative approaches. Based on the results, all entrepreneurial failure factors can be categorized as financial (source of funds and use of funds); managerial/organisational (network, team capacity, coordination, strategy); product-market (macroeconomy, market, product); and legal (regulation and litigation). These failure factors were further investigated in detail through different quantitative and qualitative analyses, including a content analysis of failure stories and quality management techniques. We have verified this framework with a content analysis of first-person accounts from the founders of failed ventures. The results provide confidence that our categories bridge the gap between *etic* (observer-centered) and *emic* (participant-centered) accounts of entrepreneurial failure. To this extent, they provide a valid foundation for designing policies and interventions to steer entrepreneurs away from failure. The frequency with which our categories appear in the founders' accounts also suggests that we have identified the most common causes of this failure. The content analysis reveals that a combination of two or more failure factors is implicated in most entrepreneurial failures.

Our qualitative analysis shows that the root causes of all failures are limited to some key issues, with current and historical economic policies, the quality of governance, and the current state of economic development being the main root causes for lack of funding and product/market-environment factors. Poor state education policies, particularly with respect to business education, and a lack of effective training in entrepreneurship and business management are other main root causes of failure, and these relate to a management team's competencies and capabilities for leading a small business. Tough market competition, a lack of innovation or technical expertise to improve a product or service are key root causes of market or product failure. At national and firm levels, a lack of a supportive legal framework and a lack of attorneys for insolvency resolutions are highlighted as root causes of many failures. Relatively few of the failure factors are likely to respond to a direct infusion of cash into startups, the currently dominant initiative to boost entrepreneurship. Finally, a lack of awareness about the crucial role of training and the availability of funds and other services for SMEs is another key issue. Entrepreneurs and SME owners should be aware of the causes of failure, and they need to be equipped with the diverse business-management knowledge and competencies needed to effectively manage their teams, operations, markets, and funds. However, some managers and owners are unaware of the crucial role that managerial skills and knowledge play in business success.

From quality management point of view, considering entrepreneurship as a process and failure as a 'defect' in this process, this study then analyzed and examined the mechanisms through which the failure factors act using common quality management methods, namely fishbone diagrams and 5-Whys analysis. A panel of four experts were recruited to complete this analysis over several rounds through the Delphi method. These tools revealed the pathways through which the root causes of entrepreneurial failure affect new ventures, thus paving the way for the design of policies, programmes, and interventions to avert some of these failures.

The present work attempts to move the discussion of entrepreneurial failure away from contextual (industry and geographical) factors toward a conceptual and systematic taxonomy of failure factors that can be applied more generally. However, the role of the context in explaining the failure of a particular business venture can never be entirely excluded, but we may be able to detect aggregate patterns that are less context-dependent. Our approach

is therefore better suited for aggregate, high-level policy interventions to reduce entrepreneurial failure.

This study has different practical implications as well. It increases awareness among entrepreneurs, SMEs and their key stakeholders about entrepreneurial failure factors and their detailed root-causes for each single factor through a more holistic view that covers all segments, which supports them to steer away from any potential failure risks. This study also helps policymakers and service providers to understand these factors and their root-causes through different methods that we presented and develop effective policies and supportive programmes to address each cause and reduce current failure rates. These root causes are listed in the last two columns of [Table 5](#), and they are about economic policies, poor formal and informal training and development systems for both technical and managerial skills, non-supportive legal framework/infrastructure, lack of receiving legal advice and support, environmental changes, lack of knowledge and awareness about supportive programmes, high level costs of transactions and resources, lack of competencies and optimistic mindset of owners, access to funds, market forces by competitors, among others. In addition, this study helps researchers and practitioners to conduct further analysis about each failure factor and develop effective solutions and recommendations.

This study has some limitations and provides a new venue for future research as well. The study would have been more effective if we could conduct survey among failed start-ups and SMEs to obtain primary data concerning their failure stories and conduct more quantitative analysis for the root causes of their failure. In addition, Gourinchas et al. (2020) argue that due to the on-going COVID-19 pandemic, the SMEs failure rate has been increased by 9.1% absent of government financial support. Therefore, it is crucial to conduct root-cause analysis concerning the effects of this pandemic on entrepreneurial failure from financial, managerial, product-markets and legal aspects.

Another new venue of research can be about applying quality management approaches to improve the entrepreneurial success rates and their internal systems using Baldrige, EFQM, Lean, Six Sigma and other effective models that enhance their business excellence. Finally, new comprehensive studies can be conducted to develop effective solutions and policy recommendations and interventions to address the root-causes of each 11 failure factor and steer entrepreneurs away from failure.

Disclosure statement

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Appendix A: Word Cloud of Our Content Analysis

able according achieve acquired acquisition announced app around assets best build business capital care cash cease CEO challenges change cited closing co-founder com community competition consumer content continue costs Covid created customers data deal decided decision deliver delivery demand despite development difficult digital due early effective employees end enough executives experience Facebook faced failed failure final financial financing firm focus following food founded founder funding game general going goodbye group growth happen hard hardware health help hiring hit home idea including industry information initial interested investment investors issues job labs lack launch learned lessons letter live longer lot management market media message million mobile model money months name needed networks news note number offer online operations order pandemic partners past pay people pivot plans platform possible post post-mortems problem process product profitability project provide raised reach read really reasons received reported required resources retail revenue robotics round running sales scale secure sell service several share shop shut shutdown shuttered site small social software source space spent started startup stated statement store strategy successful support sustainable taking team tech technology testing thank things think times told turn ultimately unable unfortunately users vc venture video vision wanted Website weeks wind work world