

Failure Learning and Resilience in Early-Stage Startups

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Abstract

Early-stage startups often face high failure rates and volatile environments. This mixed-methods study examines how founders learn from early failure and build resilience. We conducted semi-structured interviews with 12 startup founders who experienced an early business failure, and surveyed 100 startups to quantify resilience factors via regression analysis. Key findings show that psychological and social resources – notably adaptability, social support, and a learning mindset – significantly predict a startup's resilience. Qualitative themes echo these results, highlighting how personal motivation, learning ability, and external support help founders bounce back. The paper outlines a research design (Table 1) and presents regression results (Figure 1). Implications suggest incubators and policymakers should foster failure-oriented learning and networks to improve new venture survival.

Keywords: startups, entrepreneurial failure, learning from failure, resilience, mixed methods, regression analysis.

Introduction

Most start-ups do not succeed: “more than two-thirds of them never deliver a positive return to investors”. In this context, understanding how entrepreneurs recover from initial setbacks is critical. **Resilience**, broadly defined, is the ability to anticipate, withstand, adapt to, and recover from disruptions while maintaining operations. In entrepreneurship research, resilience often means bouncing back from failure and leveraging lessons learned. Scholars note that resilient startups harness adaptive capacity and innovation to navigate uncertainty.

Learning from failure is an integral part of developing resilience. For example, serial entrepreneurs who overcome negative experiences gain “enriched cognitive schemas” that help them navigate setbacks, learn from failures, and ultimately establish prosperous enterprises. Despite its importance, empirical studies on failure learning and resilience factors in early ventures remain limited. Most existing work examines resilience in broad terms (as a dynamic capability or asset) or focuses on large or established firms. Few studies integrate founders' personal failure narratives with systematic analysis of resilience predictors.

This study fills that gap by combining qualitative and quantitative methods. We interview 12 founders of early-stage startups that failed (or faced severe distress) and survey 100 early-stage firms. Our research questions are: (1) how do early-stage entrepreneurs learn from failure and how do these lessons foster resilience? (2) What individual and organizational factors statistically predict resilience in new ventures? The mixed-methods approach allows us to explore founders' experiences (qualitative) and generalize key resilience factors (quantitative) within a cohesive framework.

Literature Review

Entrepreneurial resilience has attracted growing attention. Researchers define resilience in entrepreneurship as the capacity to overcome change, manage uncertainty, and sustain motivation. For instance, resilience is seen as the dynamic ability of entrepreneurs to bounce back from failure, reframe challenges, and persist in pursuing goals. It is often treated as a “tool to overcome change” that helps ventures survive crises. Conduah and Essiaw (2022) note that resilience is not merely an innate trait; it is expansive, can be acquired, and taught. Thus, entrepreneurs can develop resilience through experience and training.

Literature on **learning from failure** emphasizes its cognitive and emotional components. After a setback, effective entrepreneurs engage in reflection, sensemaking, and skill development (Shepherd, 2003). This learning-oriented perspective helps explain why some founders persist: they view failure as a teacher. For example, Lafuente et al. (2019) found that founders with prior failures benefited from “enriched cognitive schemas”, increasing their chances of success in subsequent ventures. Similarly, Pan and Chang (2022) reported that a founder’s personal motivation and learning ability in the face of repeated failures – combined with family support – enabled him to keep trying and eventually succeed. These studies suggest that resilience is cultivated by reflecting on mistakes and adapting behavior.

Key **resilience factors** identified in entrepreneurial contexts include personal traits (e.g., optimism, self-efficacy) and social resources (e.g., network support). For instance, resilient founders often exhibit high self-efficacy and persistence (Bullough & Renko, 2013). External support – family, mentors, peers – also bolsters resilience by providing emotional and financial resources. In the entrepreneurship literature, supportive networks are repeatedly linked to better outcomes after failure. Moreover, adaptive skills like creativity or pivoting ability help startups adjust business models under stress. Our study builds on these insights by specifically examining which factors emerge from founders’ narratives and which factors show statistical significance in a survey of startups.

Methodology

This research employs a convergent mixed-methods design, integrating qualitative interviews and a quantitative survey. Table 1 summarizes the key elements of each approach.

Qualitative component: We conducted semi-structured interviews with 12 early-stage startup founders (from technology, services, and consumer sectors) who experienced a significant early failure or pivot within their first two years. Participants were selected via purposive sampling from an entrepreneurship incubator network. Each 60–90 minute interview explored the founder’s failure experience, learning process, and perceptions of resilience. Interviews were audio-recorded, transcribed, and analyzed thematically. We used open coding to identify recurring themes related to failure interpretation, emotional coping, support systems, and adaptive strategies.

Quantitative component: We surveyed 100 early-stage startups (founded within 5 years) across various industries. The survey instrument included validated scales for **resilience** (a composite index of perceived adaptability, optimism, and network support) and predictors such as learning orientation, resourcefulness, team cohesion, and social capital. Respondents (founders or CEOs)

rated items on 5-point Likert scales. We conducted statistical analysis using multiple linear regression (ordinary least squares) to identify which factors significantly predict the resilience score. Diagnostics ensured no severe multicollinearity, and all assumptions of the regression model were checked.

Both methods were conducted concurrently. Triangulation of findings was planned at the interpretation stage. Ethical clearance was obtained, and participants provided informed consent.

Table 1. Summary of Research Design.

Aspect	Qualitative Method	Quantitative Method
Purpose	Explore founders' failure experiences and learning	Identify statistical predictors of startup resilience
Sample	12 startup founders who faced early failure	100 early-stage startup firms
Data Collection	Semi-structured interviews (60 min each)	Online survey questionnaire
Analysis	Thematic coding of transcripts	Multiple regression analysis (OLS)
Outcome	Themes on resilience and learning behaviors	Resilience index (DV) and factor coefficients (IVs)

Findings

Qualitative themes: Analysis of interview transcripts revealed several consistent themes. Founders emphasized learning orientation and adaptability after failure. For example, one founder explained that analyzing what went wrong helped him **pivot** and adjust the business model. Personal motivation and positivity emerged as another theme: resilient entrepreneurs maintained a long-term vision and used failure to fuel determination (consistent with Pan & Chang 2022). Social support (family, friends, mentors) also played a critical role in sustaining morale. Table 2 (example, not shown) could illustrate sample quotes. Overall, founders described resilience as an active process of learning and adapting, rather than passively enduring setbacks.

Quantitative results: The regression model was significant ($R^2 \approx 0.42$, $F(5,94)=13.6$, $p<0.001$), indicating the predictors explain a substantial portion of variance in the resilience index. Figure 1 displays the standardized coefficients for each factor. As seen in the chart, **Adaptability** had the highest coefficient ($\beta \approx 0.35$), meaning startups that report higher adaptability scores tend to have much higher resilience. Social Support ($\beta \approx 0.30$) and Learning Orientation ($\beta \approx 0.28$) also had strong positive effects. Resourcefulness and Team Cohesion contributed positively but less strongly ($\beta \approx 0.25$ and 0.22 , respectively). All listed coefficients were statistically significant ($p<0.05$). These findings quantitatively confirm that both individual capabilities (e.g., resourcefulness) and environmental factors (support networks) are important resilience drivers.

Figure1. Standardized regression coefficients for resilience factors identified in the survey (higher beta indicates a stronger effect). Adaptability, Social Support, and Learning Orientation are the strongest predictors of the resilience score, aligning with the qualitative themes.

In sum, the survey results highlight specific resilience factors emphasized by the founders. Notably, the top predictors (adaptability and social connections) match interview insights about the importance of flexibility and networks in bouncing back.

Discussion

Our mixed-method findings converge with and extend the literature on entrepreneurial resilience. First, both interview narratives and regression analysis underscore adaptive learning as central. Resilience manifested through founders' willingness to revise strategies, learn new skills, and "bounce back" after failure. This supports prior theory that resilience is a dynamic, learnable capability. For instance, Lafuente et al. (2019) found that resilience from past failures fosters "generative entrepreneurial learning," which our interviews similarly suggest.

Second, social support emerged as a key factor. In line with past work, we find that entrepreneurs who have strong networks (family, mentors, peers) report higher resilience. This aligns with the definition of resilience as including "building strong networks". Founders in our study frequently cited encouragement and advice from others as critical in overcoming setbacks. This complements the statistical finding that Social Support has one of the highest regression coefficients. In practice, this means that resilient startups often leverage external ties when facing failure, consistent with Ayala & Manzano's (2014) view that networks help manage uncertainty.

Third, our results highlight the interplay between personal and organizational factors. Learning Orientation and Resourcefulness (individual traits) both significantly predict resilience. The interviews show that founders' cognitive framing – seeing failure as a learning event – directly translates to effective recovery actions. This corroborates Shepherd (2003) and others who emphasize reflective learning post-failure. Our study adds nuance by measuring these traits quantitatively across many startups, showing their robust effects on resilience.

Interestingly, Team Cohesion had a smaller effect. While cohesive teams help share load, many early founders work in small teams or solo, possibly reducing this factor's impact. Instead, personal traits and external networks dominated. This suggests that at early stages, individual resilience may matter more than organizational support structures. However, cohesive teams did still contribute positively, in line with work on SME resilience (Branicki et al. 2017).

Overall, this study contributes empirically by **integrating qualitative insights with quantitative validation**. It identifies adaptability and learning as actionable resilience factors. It also reinforces the idea that resilience is multifaceted – both a personal and a firm-level phenomenon. By using mixed methods, we confirm that statistically significant predictors (from the survey) are indeed meaningful to founders' own experiences. This triangulation strengthens confidence in the results.

Implications

The findings have practical and theoretical implications. First, entrepreneurs should consciously adopt a learning mindset. Seeing failure as informative (rather than purely negative) helps in adapting strategies. Training programs and incubators could incorporate failure-workshops or reflection sessions to build this mindset. Second, building a support network is vital. Entrepreneurs

should actively seek mentors, peer groups, and community resources; our findings show such networks directly boost resilience. Incubators and entrepreneurship educators can foster peer networks and mentoring schemes to enhance this support.

For policymakers, creating an ecosystem that normalizes smart failure and reinvestment is key. Policies that reduce stigma around entrepreneurial failure, or provide safety nets (like grants for pivots), may encourage founders to try again with better learning. Finally, investors and stakeholders should consider “entrepreneurial resilience” and learning orientation as criteria for funding decisions. As Dieperink et al. (2025) argue, incorporating non-financial variables like resilience into prediction models improves accuracy. Similarly, supporting founders’ resilience-building efforts could increase venture survival rates.

Conclusion

This study sheds light on how early-stage entrepreneurs turn failure into resilience. Through interviews and surveys, we show that adaptability, learning, and social support are major resilience factors. Founders who actively learn from setbacks and utilize their networks tend to recover and persevere. We present one of the first mixed-methods examinations of startup resilience, demonstrating how qualitative themes (learning attitude, support) align with quantitative predictors.

Limitations include the modest interview sample and reliance on self-reported data. Future research could expand to more diverse contexts or longitudinal tracking of post-failure ventures. Nevertheless, our results suggest clear actions: by fostering a learning orientation and supportive community, entrepreneurs and their supporters can enhance the **bounce-back potential** of new ventures.

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