

Leadership Dynamics and Success of Czech Healthcare Startups: A Pilot Quantitative Analysis

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Abstract: This pilot study examines whether leadership composition and leadership change are associated with early signals of success among Czech healthcare startups. A hand-curated sample of 87 companies founded within the last 15 years was compiled from Dealroom and Czech Founders data and complemented with publicly available information on statutory leadership. Startup “success” was operationalized as a binary outcome, equal to 1 if a firm exceeded at least one threshold in valuation (> EUR 1,000,000), cumulative funding (> EUR 300,000), or revenue (> EUR 300,000). Two leadership indicators were constructed: (i) mixed-gender leadership (at least one woman in statutory bodies) versus male-only leadership, and (ii) at least one leadership change in statutory bodies versus no change. Descriptive comparisons indicate a positive direction for mixed-gender leadership, though evidence remains inconclusive in this pilot sample. In contrast, leadership change shows a clear positive association with early success signals. The results suggest that managed leadership transitions may reflect adaptive capacity in regulation- and capital-intensive startup contexts, warranting further research on the timing and types of leadership change in larger international samples.

Keywords: startup; healthcare; leadership change; gender diversity; Czech Republic; Dealroom

JEL Classification: L26; O32; G24

1. Introduction

Healthcare, medtech, biotech and digital health startups have become important vehicles for translating research and engineering advances into societal and economic value, with a growing relevance also in smaller innovation ecosystems such as the Czech Republic and the broader Central and Eastern Europe (CEE) region (Cohen & Hochberg, 2014; DEALROOM, 2023). In contrast to many purely software-based ventures, healthcare-oriented startups typically face longer innovation cycles, capital intensity, and strict regulatory requirements, which increase the strategic importance of governance, statutory leadership, and the ability to adapt organizationally during scaling.

Leadership is increasingly discussed as a performance-relevant mechanism not only through individual founder capabilities, but also through the composition of leadership teams and the dynamics of leadership change over time. Prior work has emphasized that

early-stage ventures benefit from leadership that can integrate scientific depth with market-facing execution, while building organizational routines under uncertainty (McKinsey & company, 2024). In the CEE context, these challenges are amplified by thinner pools of experienced scale-up managers and by a stronger dependence on external investors and public support instruments (Zahradka Zajfrtova & Marešová, 2025).

Recent studies and practitioner evidence highlight two leadership-related dimensions with potential links to startup outcomes. First, leadership diversity (including gender diversity) is often associated with broader perspectives and decision quality, and is increasingly embedded in European innovation policy and funding frameworks (European Commission, 2023; European Innovation Council, 2024; Hughes, 2024). Second, leadership dynamics, including managed changes in statutory bodies during growth phases, can reflect governance professionalization and the ability to respond to scaling requirements and investor monitoring (Chahine & Zhang, 2020).

Within this research stream, earlier work by the authors mapped human resource management challenges in Biotech and DeepTech startups and pointed to leadership and capability gaps as practical bottlenecks that are frequently addressed through external mentoring, investor involvement, and interim management solutions (Zahradka Zajfrtova & Marešová, 2025). However, empirical evidence from Czech healthcare startups that links observable leadership characteristics to early success signals remains limited and fragmented.

To help address this gap, the present article reports a pilot quantitative analysis of Czech healthcare startups based on two complementary data sources: the Czechia Dealroom platform (developed together with CzechInvest) and a community-maintained dataset Czech Founders (Dealroom, 2026; Czech Founders, 2026). The study focuses on statutory leadership because it is observable from public records and is directly relevant for governance in ventures.

The analysis is guided by two research questions: (RQ1) Do early success rates differ between startups with mixed-gender statutory leadership and those with male-only statutory leadership? (RQ2) Do early success rates differ between startups that experienced at least one leadership change in statutory bodies and those that did not? The pilot design is intended to generate testable hypotheses and refine measurement choices for a larger, international follow-up study.

2. Methodology

The empirical dataset was built from an export of the Dealroom (2026) database and complemented with the community database Czech Founders (2026). From the broader pool of Czech healthcare-related companies, a targeted sample was created using the following inclusion criteria: (i) healthcare/healthtech (including medtech, biotech and digital health tags), (ii) company age under 15 years as of 2025, and (iii) Czech nexus (headquarters and/or core technology originating in the Czech Republic).

The final sample includes 87 startups. Information missing from structured databases, namely gender composition of statutory leadership and whether a leadership change

occurred, was manually added based on public sources (commercial register records and company websites).

Outcome variable (SUCCESS) is binary and equals 1 if at least one of the following thresholds is met: valuation > EUR 1,000,000; cumulative funding > EUR 300,000; or revenue > EUR 300,000. Key explanatory variables are MALE-ONLY (1 if male-only statutory leadership; 0 if at least one woman has held a statutory role) and CHANGE (1 if at least one change in statutory leadership was identified; 0 otherwise).

Descriptive statistics are provided for all key variables. Associations between SUCCESS and the two leadership indicators were assessed using 2×2 contingency tables and standard tests of association for categorical variables. The analysis is intended as an exploratory pilot to inform the next research stage.

3. Results

Table 1 summarizes the main characteristics of the sample. Overall, 25 of 87 firms (28.7%) meet the study's success definition. Approximately 37.9% of startups have mixed-gender statutory leadership, and 44.8% show at least one identified leadership change.

Table 1. Descriptive characteristics of the analyzed sample (N = 87)

| Characteristic | Category / statistic | Value |
|-------------------------------|-----------------------------|------------------|
| Sample size | Number of firms | 87 |
| Founding year | Median | 2019 |
| | Min-max | 2013–2025 |
| Age in 2025 | Mean ± SD | 6.1 ± 3.1 years |
| | Median | 6 years |
| | Min-max | 0–12 years |
| Success (SUCCESS) | SUCCESS = 1 | 25 firms (28.7%) |
| | SUCCESS = 0 | 62 firms (71.3%) |
| Leadership gender (MALE-ONLY) | Male-only leadership (1) | 54 firms (62.1%) |
| | Mixed-gender / ≥1 woman (0) | 33 firms (37.9%) |
| Leadership change (CHANGE) | With leadership change (1) | 39 firms (44.8%) |
| | No leadership change (0) | 48 firms (55.2%) |
| Growth stage | Seed | 50 firms (57.5%) |
| | Early growth | 26 firms (29.9%) |
| | Late growth | 4 firms (4.6%) |
| | Unspecified / missing | 7 firms (8.0%) |

3.1. Success by Leadership Gender Composition

Mixed-gender leadership is associated with a higher share of successful firms (13/33, 39.4%) than male-only leadership (12/54, 22.2%). This indicates a visible difference in observed success rates between the two groups in the sample. However, the statistical test did not confirm significance for this association ($\chi^2(1)=2.17$, $p=0.141$), so the result should be interpreted as an observed pattern rather than a statistically supported effect in this dataset (Table 2).

3.2. Success by Leadership Change

Startups with at least one identified leadership change show a substantially higher success rate (17/39, 43.6%) than those without a recorded change (8/48, 16.7%). In other words, successful outcomes are observed more frequently among firms that experienced a change in top leadership during the period studied. This difference is consistent across the sample in the dataset. The association is statistically significant ($\chi^2(1)=6.36$, $p=0.012$), supporting the presence of a measurable relationship between leadership change and success (Tab. 2).

Table 2. Contingency results for SUCCESS and leadership indicators.

| Comparison | Group | SUCCESS=1 | SUCCESS=0 | Success rate | $\chi^2(1)$ | p-value |
|---------------------|-------------------------|-----------|-----------|--------------|-------------|---------|
| SUCCESS × MALE-ONLY | Mixed-gender leadership | 13 | 20 | 39.4% | 2.17 | 0.141 |
| | Male-only leadership | 12 | 42 | 22.2% | | |
| SUCCESS × CHANGE | Leadership change | 17 | 22 | 43.6% | 6.36 | 0.012 |
| | No leadership change | 8 | 40 | 16.7% | | |

4. Discussion

This pilot study examined whether (i) statutory leadership gender composition and (ii) leadership change dynamics are associated with the likelihood of early startup success in healthcare, operationalized through threshold-based signals of valuation, funding, and revenues. The findings point to three complementary lines. First, mixed-gender statutory leadership shows a *positive direction* relative to male-only leadership, consistent with arguments that diversity can strengthen decision quality, broaden perspectives, and support innovation under uncertainty (Hughes, 2024; Mahadevia, 2014). However, in this dataset the relationship is not statistically conclusive, which is likely influenced by the limited sample size and a coarse operationalization of diversity (≥ 1 woman). Future research should therefore apply richer measures such as the share of women in executive roles, functional diversity, board composition, and the timing of women's entry into leadership positions (Hughes, 2024).

Second, leadership change appears more strongly related to success than gender composition alone. In capital- and regulation-intensive healthcare domains, leadership transitions may reflect an adaptive response to scaling demands, investor monitoring, and governance professionalization rather than a simple "founder failure" narrative (Chahine & Zhang, 2020). This interpretation aligns with evidence and practice-oriented insights emphasizing the role of interim leadership, external experienced executives, and board strengthening during critical growth phases in deeptech and biotech contexts (Mochnac, 2022; Mochnac, 2023; Mulder, 2020; Van Rooij, 2023). A key next step is to distinguish types of change: founder-to-professional CEO transitions, interim appointments, or investor entry

into boards, and to model their timing relative to funding rounds and strategic pivots (Chahine & Zhang, 2020).

In practice, accelerators, investors, and ecosystem intermediaries provide not only capital but also governance know-how, mentoring, and occasionally direct leadership reinforcement, which may partially explain why leadership change correlates with stronger milestone attainment (Cohen & Hochberg, 2014; Lange et al., 2024), however, further research needs to be done to confirm this.

From a policy perspective, the directional advantage observed for mixed-gender teams and the relevance of leadership dynamics are consistent with EU frameworks that treat diversity and HR capacities as components of innovation performance. Horizon Europe embeds Gender Equality Plan requirements for eligible institutions, and the EIC explicitly promotes gender diversity and support for women-led deeptech ventures (European Commission, 2023; EIC, 2024). This pilot therefore adds initial quantitative indications from a Czech/CEE setting that leadership composition and leadership adaptation may relate to reaching investment and market thresholds, while also demonstrating the need for larger and more granular datasets before drawing definitive conclusions.

The study is limited by its cross-sectional design, reliance on database-derived financial proxies, and limitation in data on leadership change. Nevertheless, it provides an empirical starting point for a broader CEE-focused research agenda: expanding the sample internationally, introducing time-resolved measures of leadership change, and combining quantitative analysis with qualitative case studies to uncover mechanisms (governance, fundraising capability, regulatory strategy, internationalization, and ecosystem support) (Mochnac, 2022; Van Rooij, 2023; Lange et al., 2024). Despite the limitations, the results appear practically relevant for investors and ecosystem builders who often influence governance arrangements and leadership transitions in the scaling journey (Chahine & Zhang, 2020; Van Rooij, 2023).

5. Conclusions

Using a hand-curated sample of 87 Czech healthcare startups founded within the last 15 years, this pilot study explored whether two observable governance-related indicators - gender composition of statutory leadership and the occurrence of leadership change in statutory bodies - are associated with early success signals captured by valuation, cumulative funding, or revenue thresholds.

The pilot evidence suggests two distinct patterns. Mixed-gender statutory leadership shows a positive direction in relation to early success signals, but the current sample and the coarse diversity measure (presence of at least one woman) do not allow for firm conclusions. In contrast, leadership change is consistently associated with higher success rates, which supports the interpretation that managed leadership transitions may represent adaptive capacity and governance professionalization during scaling in capital- and regulation-intensive domains.

These findings have practical implications for founders, investors, and ecosystem builders in the Czech Republic and CEE. Rather than viewing leadership change purely as

a failure of founding teams, the results are consistent with a more nuanced view in which leadership transitions can be part of a growth and scaling strategy aligned with investor requirements and operational complexity.

The study is limited by its pilot design, cross-sectional nature, and reliance on database-derived financial proxies and manual coding of leadership indicators. Future research should extend the dataset internationally, refine leadership measures (e.g., functional diversity, share of women, role types), and apply multivariable models controlling for age, growth stage, and traction metrics.

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