

CEO early-life experiences and corporate outcomes: a systematic literature review using the ADO model

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Abstract

Purpose – Chief executive officers' (CEOs) early-life experiences are increasingly viewed as a micro-foundation explaining why firms facing similar constraints pursue different strategies. This review consolidates extant evidence on how CEOs' formative imprints shape corporate decisions and outcomes.

Design/methodology/approach – Using the antecedents–decisions–outcomes (ADO) framework, this systematic literature review followed the Preferred Reporting Items for Systematic reviews and Meta-Analyses procedures. A search of Web of Science covering 2000 to July 2025 identified 65 records; after screening and eligibility checks, 45 peer-reviewed articles were retained for in-depth synthesis.

Findings – The review classifies key antecedents – war and/or conflict exposure; famine, poverty and deprivation; disasters and environmental shocks; family background and birth order and military or institutional-transition imprints. These experiences are linked to managerial decision channels including risk-taking, investment and innovation, capital structure, corporate social responsibility (CSR) and environmental, social and governance (ESG) engagement and disclosure and/or reporting choices. Documented outcomes span firm performance and resilience, earnings quality, crash risk, sustainability results and internationalization. Evidence suggests competing pathways: some imprints foster caution and conservative policies, while others intensify prosocial orientation and stakeholder-facing strategies. Governance arrangements and institutional context consistently condition the strength and direction of effects.

Research limitations/implications – The literature remains heterogeneous in measurement and identification. Future research should employ richer biographical measures, clarify boundary conditions and strengthen causal designs (e.g. quasi-experiments, validated archival proxies and triangulation across data sources).

Practical implications – Boards and investors can incorporate CEO formative imprints into executive assessment, risk oversight and leadership-development practices while accounting for governance and institutional fit.

Social implications – Understanding how early-life imprints influence CSR and ESG and transparency choices can inform efforts to promote sustainable and socially responsible corporate behavior.

Originality/value – This review provides an integrative ADO map of CEOs' early-life experiences and corporate outcomes and offers a targeted research agenda to advance cumulative theorizing in finance and strategic management.

Keywords CEO, Early-life experiences, ADO framework, Systematic literature review, PRISMA,

Upper echelons theory, Imprinting theory

Paper type Literature review

1. Introduction

A growing body of corporate finance and strategic management research argues that firms are not only shaped by markets, institutions, and governance structures, but also by the personal histories of their top executives. This view is rooted in upper echelons theory, which posits that organizational outcomes reflect executives' cognitive bases and values that influence how they interpret situations and choose strategies (Hambrick and Mason, 1984). Extending this



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logic, recent studies increasingly treat chief executive officer's (CEO) early-life experiences, the formative exposures during childhood and adolescence, as deep antecedents that can leave persistent imprints on executives' preferences, risk attitudes, and social orientation (Marquis and Tilcsik, 2013). In finance, this stream complements evidence that individual managers systematically explain variation in corporate policies (Bertrand and Schoar, 2003) and that CEOs' formative experiences can affect financing behavior and capital structure-related beliefs (Malmendier et al., 2011).

CEO early-life experiences research typically leverages historically meaningful, often quasi-exogenous experiences, such as famine, conflict, environmental shocks, or early socioeconomic adversity, to explain heterogeneity in corporate decisions and outcomes. For instance, previous studies show that CEOs' exposure to famine at formative ages is associated with lower corporate risk-taking, with effects conditioned by state ownership and market competition (Li et al., 2023a, b). Other work examines childhood trauma and documents non-linear associations with strategic risk-taking, highlighting social networks as an important boundary condition (Tian et al., 2023). Beyond risk, CEO early-life experiences have been linked to firm resilience and adaptation under shocks, e.g. CEOs with military experience are found to reduce pre-shock risk-taking and improve organizational resilience during crisis periods (Wang et al., 2025).

Importantly, the early-life experiences literature has expanded from traditional corporate finance outcomes (risk-taking, leverage, investment) towards broader corporate outcomes aligned with stakeholder and sustainability priorities. Prior evidence shows that CEOs' early-life exposure to environmental pollution can translate into stronger corporate green innovation, with the magnitude depending on international exposure, cultural norms, and ownership structure (Tang et al., 2024). Collectively, these studies suggest that CEO early-life experiences operate as durable micro-foundations of strategic and financial behavior, helping explain why firms facing similar external constraints still exhibit persistent differences in policy choices and performance trajectories.

Despite rapid growth, research on CEO early-life experience remains fragmented in at least three dimensions. First, the literature varies substantially in how early-life experiences are defined and measured as some studies rely on direct biographical coding of executives' personal histories, whereas others use cohort-based or location-based proxies that link CEOs' birth years or birthplaces to historical shock intensity, such as conflict, famine, poverty, or macroeconomic crisis exposure (Choi et al., 2021; Hu et al., 2020; Malmendier et al., 2011). This measurement heterogeneity makes it difficult to compare findings across studies and to develop cumulative theory.

Second, empirical results often imply competing mechanisms. On one hand, early adversity may increase caution, loss sensitivity, and defensive decision-making, thereby reducing corporate risk-taking, leverage, investment, or international expansion (Li et al., 2023a, b; Malmendier et al., 2011; Yeoh and Hooy, 2022). On the other hand, however, hardship, disaster exposure, or environmental adversity may strengthen empathy, stakeholder sensitivity, and long-term orientation, leading to stronger corporate social responsibility (CSR), environment, social, and governance (ESG), philanthropy, or green innovation outcomes (Choi et al., 2023; Liu and Hooy, 2024; Tang et al., 2024; Xu and Ma, 2022). These competing pathways suggest that CEO early-life experiences should not be treated as uniform predictors of corporate behavior.

Third, studies span multiple decision and outcome domains, including risk-taking, capital structure, investment, CSR, green innovation, reporting quality, resilience, and internationalization, but these domains are often examined separately rather than integrated into a common framework (Du et al., 2025; Quan et al., 2023; Wang et al., 2025; Xu et al., 2024). This fragmentation limits the field's ability to articulate when and why specific early-life experiences affect particular corporate decisions and outcomes. This issue is especially important for finance research because part of the literature examines financing and investment policies, while another stream has moved toward sustainability, reporting, and stakeholder-related outcomes.

This paper addresses these challenges by conducting a systematic literature review (SLR) on CEO early-life experiences and firm outcomes. Drawing on the Antecedents–Decisions–Outcomes (ADO) framework, we organize prior evidence by tracing how formative early-life exposures (antecedents) shape CEOs’ corporate choices (decisions) and, in turn, firm-level consequences (outcomes). In doing so, the review consolidates a dispersed literature into a coherent mechanism chain — early-life conditions → executive decision tendencies → firm outcomes — and facilitates cumulative theorizing by improving comparability across constructs, channels, and contingencies.

The aim of this SLR is to consolidate and systematize research on the CEO early-life experience–firm outcome relationship and to identify key mechanisms, methodological patterns, and unresolved questions relevant to corporate finance and strategic management. Using the ADO lens, we synthesize evidence across three components: (1) antecedents (e.g. scarcity and poverty, conflict and war-related exposure, environmental shocks, and social-class conditions), (2) decisions (e.g. risk-taking, investment, financing structure, disclosure, and stakeholder-oriented initiatives), and (3) outcomes (e.g. performance, resilience, innovation, reporting properties, and internationalization). In addition, the review examines the dominant theoretical foundations, publication patterns, and methodological approaches in this literature. This structure reduces conceptual fragmentation, highlights boundary conditions (e.g. ownership type, governance constraints, institutional setting, and CEO attributes) that may reconcile inconsistent results, and provides a foundation for a finance-relevant agenda on future research across antecedents, decisions, outcomes, and methodology.

Beyond traditional corporate finance and strategic outcomes, this literature is also relevant to the sustainability scope of the journal because CEOs’ formative experiences may shape long-term resilience, innovation-related responses, stakeholder sensitivity, and adaptive capacity under uncertainty. In this sense, CEO early-life experiences can help explain why some firms are better positioned to sustain performance, legitimacy, and strategic continuity over time. Accordingly, reviewing this literature is important not only for understanding heterogeneity in firm behavior, but also for clarifying the executive-level micro-foundations of sustainable organizational development.

To provide a clear understanding of the field, this study is guided by the following research questions:

- RQ1.* What are the antecedents, decisions, and outcomes (ADO) associated with CEO early-life experiences and firm outcomes?
- RQ2.* What are the dominant theories, publication trends, geographical contexts, outlet patterns, and methodological patterns in this literature?
- RQ3.* What are the most significant research gaps and underexplored relationships in CEO early-life experiences research?
- RQ4.* What are the key theoretical, methodological, and managerial implications of this literature, and what future research directions emerge across antecedents, decisions, and outcomes?

The rest of the paper is structured as follows: [Section 2](#) presents the conceptual background and introduces the ADO framework; [Section 3](#) explains the review methodology, including database selection, search strings, inclusion/exclusion criteria, and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) screening process; [Section 4](#) provides the analysis and synthesis of the literature, including descriptive patterns, ADO-based mapping, and methodological patterns in the reviewed studies; [Section 5](#) discusses the findings and develops future research directions; [Section 6](#) presents the theoretical, methodological, and practical implications of the review; and [Section 7](#) concludes with critical reflections and the overall value added by the study.

2. Conceptual background and overview of research topics

Research on CEOs' early-life experiences builds on the premise that formative exposures during childhood, adolescence, or early adulthood leave persistent imprints on individuals' cognition, preferences, and values, which later shape managerial behavior and organizational outcomes. This line of inquiry is grounded in upper echelons theory, which argues that organizational outcomes reflect executives' experiences, values, and cognitive bases (Hambrick and Mason, 1984), and is further enriched by imprinting theory, which explains why experiences occurring during sensitive developmental periods exert long-lasting effects on behavior (Marquis and Tilcsik, 2013).

2.1 CEO early-life experiences: definition and scope

CEO early-life experiences generally refer to salient and historically meaningful exposures that occur prior to an individual's assumption of top executive roles and are largely exogenous to later corporate decisions. Prior studies conceptualize these experiences broadly to include macro-level shocks (e.g. war, famine, political upheaval, and natural disasters), family-level conditions (e.g. poverty, social class background, birth order, and family disruption), and institutional or cohort-based environments (e.g. exposure to different stages of market reform or institutional transition) (Kish-Gephart and Campbell, 2015; Marquis and Tilcsik, 2013; Yeoh and Hooy, 2022).

Empirically, early-life experiences are operationalized using a variety of approaches. Some studies rely on detailed biographical data to directly capture executives' personal histories, while others employ cohort- or location-based proxies that link executives' birth years or birthplaces to historical shock intensity, such as famine severity or conflict exposure (Choi et al., 2021; Hu et al., 2020; Malmendier et al., 2011). Although these strategies improve identification and help address endogeneity concerns, the diversity of measures also introduces heterogeneity, making it difficult to compare results across studies and to develop cumulative theory.

Importantly, the scope of early-life experiences research is not limited strictly to childhood. Experiences occurring in early adulthood, most notably military service, are also treated as formative imprints because they involve intensive socialization, exposure to extreme conditions, and structured discipline that can durably shape executives' values, risk preferences, and leadership styles (Lin et al., 2021; Solano et al., 2024; Wang et al., 2025).

2.2 Theoretical foundations

Two theoretical perspectives dominate the CEO early-life experience literature, upper echelons theory and imprinting theory. Upper echelons theory, introduced by Hambrick and Mason (1984), argues that organizational outcomes can be partly understood as reflections of executives' cognitive bases, values, and experiences. A core assumption of this perspective is that strategic choices are not made under perfect objectivity but rather that executives interpret uncertainty, opportunities, and trade-offs through the lens of their personal backgrounds and preferences. In this review, upper echelons theory helps explain why CEOs with different formative experiences may pursue different strategic and financial policies, even when firms face similar external conditions.

Imprinting theory, as synthesized by Marquis and Tilcsik (2013), complements this view by explaining the persistence of early influences. According to imprinting logic, experiences occurring during sensitive developmental periods can generate durable cognitive and value-based imprints that remain influential even when individuals later operate in different organizational or institutional contexts. A key assumption of this perspective is that early formative conditions leave lasting marks on how individuals perceive the world, evaluate choices, and respond to uncertainty. This therefore helps explain why CEOs' formative experiences, such as exposure to scarcity, trauma, or institutional transition, may continue to affect corporate decisions decades later (Hu et al., 2020; Malmendier et al., 2011).

Overall, these theories suggest that CEO early-life experiences function as micro-foundations of corporate behavior. Upper echelons theory explains how executive characteristics become visible in organizational outcomes, whereas imprinting theory explains why formative experiences may remain influential over time. Their combination thus provides a coherent conceptual basis for understanding how early-life exposures shape executive preferences and values, which are then expressed through strategic and financial decision-making when CEOs are asked to make informed choices or judgments.

2.3 Organizing research using the ADO framework

Despite rapid growth, the CEO early-life experience literature remains fragmented across different types of antecedents, decision domains, and outcome variables. To address this fragmentation, the present review adopts the ADO framework as an organizing structure (Aggarwal *et al.*, 2025). Within this framework, early-life experiences are conceptualized as antecedents that influence CEOs' decision tendencies, including risk-taking behavior, investment and innovation choices, capital structure decisions, CSR and ESG engagement, and financial reporting practices.

These decisions, in turn, generate firm-level outcomes such as financial performance, organizational resilience, risk profile, sustainability performance, earnings quality, and internationalization. By explicitly tracing the links from antecedents to decisions and then to outcomes, the ADO framework provides a coherent mechanism chain — early-life conditions → executive decisions → organizational consequences — and improves comparability across studies that examine different outcomes in isolation.

Moreover, the ADO framework facilitates the identification of boundary conditions that moderate ELE early-life experiences effects. Prior research highlights the role of governance strength, ownership structure (e.g. SOEs (state-owned enterprises) versus non-SOEs), institutional environment, and CEO attributes (e.g. tenure and overseas experience) in shaping whether and how early-life imprints translate into corporate outcomes (Du *et al.*, 2025; Li *et al.*, 2023b). As such, the ADO lens not only synthesizes existing evidence but also provides a foundation for cumulative theorizing and future empirical research.

3. Research methodology

This study adopted the PRISMA approach to identify, screen, and synthesize the relevant literature on CEO early-life experiences and corporate outcomes. PRISMA offers a transparent and replicable procedure for study identification, screening, eligibility assessment, and final inclusion, thereby strengthening the rigor of the review process. In this study, the Web of Science was used as the core database because it provides strong coverage of peer-reviewed journals, transparent indexing standards, and consistent bibliographic metadata suitable for systematic screening and classification. Explicit inclusion, exclusion, and quality-related screening criteria were applied at each stage of the review process. Figure 1 presents the PRISMA flow of study selection, and the details of each stage are explained below.

3.1 Identification

During the identification stage, we conducted the database search in July 2025 [search date: July 2025] and reviewed the relevant literature on CEO early-life experiences and firm outcomes in the Web of Science database (Table 1). The Web of Science was used as the core database because it provides transparent indexing standards and consistent bibliographic metadata suitable for systematic screening and classification. To locate essential and relevant studies, we searched the identified keywords in the Web of Science for the period from 2000 to July 2025, applying the search to article titles, author keywords, and abstracts. Because the

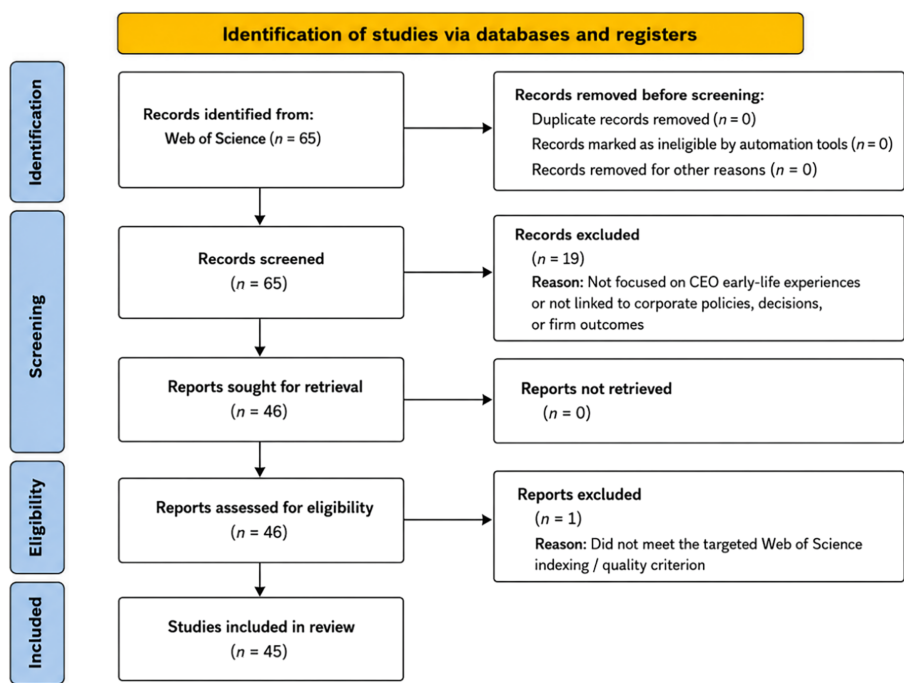


Figure 1. Flow diagram of article selection using the PRISMA protocol. **Source(s):** Author’s compilation

Table 1. Search strings for selected literature sources

Database	Search fields	Search strings (title OR keywords OR abstract)	Time span
Web of science	Title, Abstract, Keywords	<i>Group 1 (CEO early-life experiences/background):</i> “early-life experience*” OR “childhood experience*” OR “formative experience*” OR “early adversity” OR “early hardship*” OR “childhood background” OR “socioeconomic origin” OR “family background” OR “birthplace characteristics” OR “military experience” OR “war exposure” OR “refugee background” OR “life history” OR “earthquake*” OR “natural disaster” <i>Group 2 (CEO/executives):</i> “CEO” OR “chief executive officer” OR “executive” OR “top manager*” OR “senior manager*” OR “corporate leader*” OR “managerial background” <i>Group 3 (firm outcomes/corporate policies):</i> “financial leverage” OR “capital structure” OR “firm performance” OR “corporate outcome*” OR “risk-taking” OR “investment decision*” OR “debt policy” OR “strategic decision*” OR “corporate behavior*” OR “financing structure”	2000–July 2025

Source(s): Author’s compilation

search was conducted in July 2025, publications from 2025 were included only if they had been indexed up to the search date.

The year 2000 was selected as the starting point for three reasons. First, it provides a sufficiently broad time window to capture early research connecting executives’ personal

histories, managerial characteristics, and corporate outcomes while remaining relevant to contemporary corporate governance and finance research. Second, the early 2000s mark the period in which manager-specific explanations of corporate policies became more visible in finance and management research, especially through studies on managerial fixed effects and executive background characteristics. Third, although no eligible studies from 2000 to 2009 were retained in the final sample, beginning the search in 2000 ensures that the review protocol did not mechanically exclude early contributions that could have informed the development of this research stream.

The search strings were designed to capture three elements: (1) early-life experiences or formative shocks (e.g. war, famine, poverty, disaster, childhood trauma), (2) the focal decision-maker (CEO or top executive), and (3) firm-level outcomes and corporate policies (e.g. firm outcome, performance, risk-taking, investment, capital structure, leverage, CSR/ESG, disclosure). The final search returned 65 records from the Web of Science ($n = 65$), with no additional records identified from registers ($n = 0$). Table 2 summarizes the inclusion and exclusion criteria applied in the screening and eligibility stages.

Inclusion criterion: Only articles published from 2000 to July 2025 were included. The included research article types were research papers, review papers, conceptual papers, and papers published only in the English language.

Exclusion criterion: Working papers, reports, unpublished works, theses, case studies, and book chapters were excluded.

3.2 Screening

After the identification stage, we conducted a screening based on titles and abstracts to ensure topical relevance to the review scope. In this step, records were assessed according to whether they explicitly examined CEO early-life experiences (or closely related formative exposures) and linked these experiences to corporate policies/behaviors and/or firm outcomes. As shown in the PRISMA flow, 19 records were excluded during screening because they did not match the study focus (i.e. they were not related to CEO early-life experiences or did not address firm policy/outcome implications), leaving 46 records for full-text assessment.

3.3 Eligibility

In the eligibility stage, we performed full-text assessment of the 46 remaining studies to confirm conceptual fit and methodological suitability. In addition to relevance checks, we applied a quality/indexing filter to ensure that included studies were published in outlets indexed in appropriate Web of Science categories, specifically SSCI, SCI-Expanded, and ESCI.

Table 2. Inclusion and exclusion parameters for paper selection

Criteria	Inclusion	Exclusion
Time window	Studies published from 2000 to July 2025	Published before 2000 or after the search date in July 2025
Language	English-language publications	Non-English publications
Document type	Peer-reviewed scholarly articles, including: empirical research articles, review articles, conceptual articles	Working papers, reports, unpublished works, theses/dissertations, case studies, book chapters
Topical relevance	Studies explicitly linking CEO early-life experiences/background to corporate behavior/policy and/or firm outcomes	Studies not addressing CEO early-life experiences or not related to corporate policy/firm outcomes (e.g. irrelevant to financial policy/capital structure)
Quality/indexing filter (WoS)	Published in journals indexed in SSCI, SCI-Expanded, or ESCI	Published in non-target indexes (e.g. A&HCI, Book Citation Index)
Source(s): Author's compilation		

Studies that did not meet this indexing requirement were excluded. Following this eligibility evaluation, one article was excluded because it was not indexed in the targeted Web of Science categories, while 45 articles satisfied the eligibility criteria and were retained for synthesis.

3.4 Inclusion

Finally, the shortlisted articles underwent screening for quality journals and relevant content, resulting in a final selection of 45 research articles for review. During this stage only one article was excluded.

3.5 Data extraction and ADO-based classification

After the PRISMA-based screening and eligibility stages, the 45 included articles were subjected to a structured manual review and data extraction process. For each study, the review recorded key descriptive information, including publication year, journal outlet, geographical context, article type, data type, and principal research focus.

The studies were then classified using the ADO framework. At the antecedent level, articles were grouped according to the main type of CEO early-life experience examined, such as war and conflict exposure, economic hardship and poverty, natural disasters and environmental shocks, family structure and upbringing, and other formative experiences, including military and institutional-transition imprints. At the decision level, studies were categorized based on the principal managerial or corporate decision domain analyzed, including risk-taking, investment and innovation, capital structure and financial policy, CSR/ESG engagement, and disclosure/reporting behavior. At the outcome level, articles were classified according to the firm-level consequences examined, such as financial performance, organizational resilience, risk profile, sustainability-related outcomes, earnings quality, and internationalization.

Data extraction and ADO-based classification were conducted by the author using a standardized coding template. The template recorded publication year, journal outlet, geographical context, article type, data type, antecedents, decision domains, outcomes, theoretical foundations, and methodological approach. To improve consistency, the extracted information and ADO classification were checked against the full-text articles after the initial coding stage. Ambiguous classifications were revisited and refined by comparing each study's research question, key variables, and main findings with the ADO categories. This procedure helped improve coding consistency and reduce classification inconsistencies.

This classification process was used to identify recurring themes, compare patterns across studies, and synthesize the boundary conditions under which CEO early-life experiences are more or less likely to translate into particular corporate decisions and outcomes. The ADO-based coding therefore served, not only as a descriptive organizing device, but also as the analytical structure guiding the synthesis presented in [Section 4](#).

4. Analysis and synthesis

A total of 45 research articles were finally retained for analysis and synthesis. Following the data extraction procedure described in [Section 3.5](#), the studies were first coded according to descriptive characteristics, including publication year, journal outlet, geographical context, article type, and data type. They were then classified within the ADO framework according to the type of CEO early-life experience examined, the main decision domain analyzed, and the firm-level outcomes investigated. This two-stage classification enabled both descriptive mapping of the literature and thematic synthesis of recurring patterns, boundary conditions, and underexplored relationships across studies.

4.1 Year of publication

The year with the highest number of publications on CEO early-life experiences and firm outcomes was 2023 (16 articles), followed by 2024 (nine articles), 2021 (nine articles), and 2025 (four

articles). The peak in 2023 may reflect the convergence of several trends rather than a single triggering event. First, the CEO early-life experience literature had matured after earlier work on managerial characteristics, upper-echelons theory, and imprinting theory, allowing scholars to move from broad executive-background explanations toward more specific tests of formative experiences (Hambrick and Mason, 1984; Bertrand and Schoar, 2003; Marquis and Tilcsik, 2013; Malmendier *et al.*, 2011). Second, the increasing availability of executive biographical information, regional historical data, and firm-level archival databases made it easier to construct biographical, cohort-based, and location-based measures of early-life exposure (Hu *et al.*, 2020; Choi *et al.*, 2021; Hao *et al.*, 2021; Wan *et al.*, 2021). Third, the post-pandemic research environment appears to have increased scholarly attention to resilience, crisis preparedness, stakeholder orientation, and managerial decision-making in uncertain environments. These themes are closely aligned with recent studies examining how CEOs' formative imprints shape risk-taking, CSR engagement, reporting behavior, sustainability choices, and organizational resilience (Choi *et al.*, 2023; Li *et al.*, 2023a, b; Quan *et al.*, 2023; Tian *et al.*, 2023; Tang *et al.*, 2024; Wang *et al.*, 2025).

However, because the search was conducted in July 2025, the count for 2025 reflects only studies indexed up to the search date and should therefore be interpreted as a partial-year count rather than a full-year publication total. As shown in Figure 2, the evidence indicates a rising publication trend in this research area, especially from 2021 onward. Although the review period begins in 2000, no eligible studies from 2000 to 2009 were identified in the final sample. This likely reflects the fact that CEO early-life experiences emerged only more recently as a distinct empirical research stream within the broader literature on executives and corporate outcomes.

4.2 Top journals

The journals publishing the largest number of articles in the final sample are Journal of Business Research (four articles), followed by Emerging Markets Review, Journal of Business Ethics, and Journal of Business Finance and Accounting (three articles each). Next are Chinese Management Studies and Humanities and Social Sciences Communications (two articles each). All remaining journals published one article each. The leading journals in which the reviewed articles were published are reported in Table 3.

4.3 Publishers

As part of the systematic review, we analyzed the distribution of articles by publisher to assess how the evidence base is concentrated across major academic publishing houses. Table 4 reports

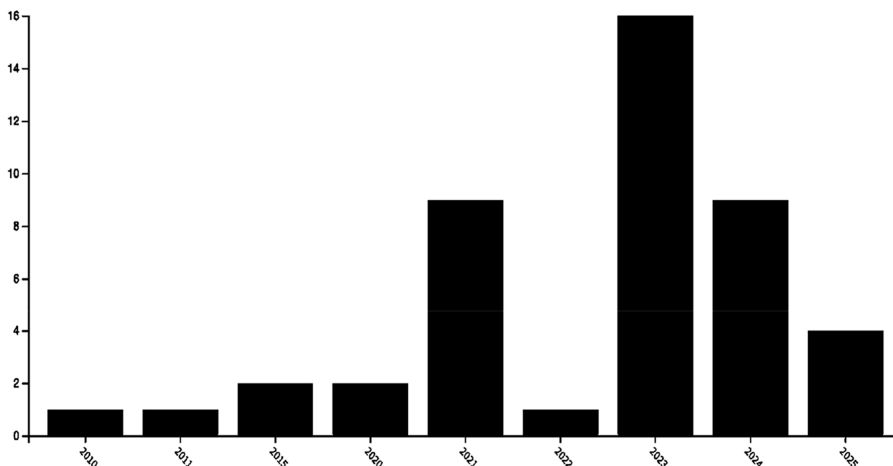


Figure 2. Number of articles published annually (2010–July 2025). **Source(s):** Author's compilation

Table 3. Number of articles by journal

Journal	Number of articles
<i>Journal of Business Research</i>	4
<i>Emerging Markets Review</i>	3
<i>Journal of Business Ethics</i>	3
<i>Journal of Business Finance and Accounting</i>	3
<i>Chinese Management Studies</i>	2
<i>Humanities and Social Sciences Communications</i>	2
<i>Academy of Management Journal</i>	1
<i>Accounting Forum</i>	1
<i>The Accounting Review</i>	1
<i>Applied Economics</i>	1
<i>Asia Pacific Journal of Management</i>	1
<i>Asian Business and Management</i>	1
<i>Australian Journal of Management</i>	1
<i>British Journal of Management</i>	1
<i>China Economic Review</i>	1
<i>Corporate Governance: The International Journal of Business in Society</i>	1
<i>Economic Analysis and Policy</i>	1
<i>Economics Bulletin</i>	1
<i>Finance Research Letters</i>	1
<i>Industrial Marketing Management</i>	1
<i>International Journal of Finance and Economics</i>	1
<i>International Review of Financial Analysis</i>	1
<i>Journal of Accounting Literature</i>	1
<i>Journal of Corporate Finance</i>	1
<i>Journal of Environmental Management</i>	1
Source(s): Author's compilation	

Table 4. Number of articles by publisher

Publisher	Number of articles
Elsevier	17
Springer Nature	7
Wiley	7
Emerald Group Publishing	4
Taylor & Francis	3
SAGE	2
Academy of Management	1
American Accounting Association	1
Economics Bulletin	1
MDPI	1
Public library of science (PLOS)	1
Source(s): Author's compilation	

the number of articles published by each publisher within the final sample. The results show that Elsevier accounts for the largest share with 17 articles, followed by Springer Nature and Wiley with seven articles each. Emerald Group Publishing contributes four articles, while Taylor & Francis published three articles, and SAGE published two articles. Several publishers appear only once in the sample, including Academy of Management, American Accounting Association, Economics Bulletin, MDPI, and the Public Library of Science (PLOS). Overall, the concentration of studies in internationally reputable publishers indicates strong academic standards, peer-review rigor, and a close fit between the published evidence and the scope of this review.

4.4 Geographic distribution of the publications

In addition to the publisher analysis, we examined the geographical distribution of the literature by coding each article based on the country of the authors. Table 5 presents the number of publications by country. The results indicate that China dominates the sample with 31 articles, reflecting a strong research focus on executive personal characteristics and corporate financial behavior within this context. The United States ranks second with nine articles, followed by England with five articles. Other countries, such as Australia (three), New Zealand (two), and Vietnam (two), also contribute to the field. The remaining countries, including Hungary, Japan, Malaysia, Russia, South Korea, Spain, Taiwan, and Thailand, each contribute one article, suggesting that research attention in these contexts remains limited and dispersed.

Overall, these results suggest that studies on CEOs' formative experiences and corporate outcomes are concentrated in countries with well-developed or rapidly emerging financial systems and capital markets, particularly China, the United States, England, and Australia, while contributions from other contexts remain modest. Notably, Vietnam accounts for only two studies, indicating a clear research gap and significant opportunities for further investigation in this emerging-market setting.

4.5 Theories used in the literature

Table 6 summarizes the core theories most frequently applied in research on CEOs' financial behavior through the lens of early-life experiences. Two theoretical perspectives dominate this field, upper echelons theory and imprinting theory, and they are often used in combination to explain how CEOs' formative experiences influence executive cognition and preferences, which subsequently shape corporate decisions and firm outcomes. Notably, these theories appear primarily in studies published during 2020–2025, reflecting the increasing emphasis on psychological mechanisms and leaders' personal histories in explaining corporate behavior.

4.6 Antecedent, decision, and outcome (ADO) model

Understanding how CEOs' early-life experiences shape corporate choices and results has become a vibrant research area and recent studies have adopted an ADO lens (Aggarwal *et al.*, 2025) to systematically link various CEO early-life experiences to later strategic decisions and firm-level outcomes. Executives' experiences in sensitive early periods (childhood or early career) leave lasting imprints that influence their risk preferences, values, and worldviews.

Table 5. Number of articles by country

Country	Number of articles
China	31
United States	9
England	5
Australia	3
New Zealand	2
Vietnam	2
Hungary	1
Japan	1
Malaysia	1
Russia	1
South Korea	1
Spain	1
Taiwan	1
Thailand	1
Source(s): Author's compilation	

Table 6. Theories used in the literature

Theory	References
<i>Upper echelons theory:</i> CEOs’ personal characteristics shape strategic choices and organizational outcomes	Lu <i>et al.</i> (2025), Liu <i>et al.</i> (2024),Tang <i>et al.</i> (2024), Xu (2023), Liu <i>et al.</i> (2023), Li <i>et al.</i> (2024), Tian <i>et al.</i> (2023), Han <i>et al.</i> (2022), Xu and Ma (2022), Zhang <i>et al.</i> (2022), Bamber <i>et al.</i> (2010)
<i>Imprinting theory:</i> Early-life experiences exert persistent and long-term effects on cognition and behavior	Lu <i>et al.</i> (2025), Liu <i>et al.</i> (2024), Solano <i>et al.</i> (2024), Tang <i>et al.</i> (2024), Xu (2023), Liu <i>et al.</i> (2023), Li <i>et al.</i> (2024), Jia <i>et al.</i> (2023), Li <i>et al.</i> (2023c), Han <i>et al.</i> (2022), Xu and Ma (2022), Hu <i>et al.</i> (2020)
Source(s): Author’s compilation	

These imprints, in turn, drive distinct corporate decisions and ultimately affect organizational outcomes. Below, we synthesize key themes for each component of the ADO framework, drawing on 45 selected studies of CEO early-life experiences (ELE) and corporate outcomes.

4.6.1 *Antecedents.* 4.6.1.1 War and conflict exposure. A consistent stream shows that CEOs exposed to war or political turmoil tend to exhibit heightened caution and risk aversion. War-related trauma is associated with more conservative corporate policies, reflecting a “safety-first” mindset. For example, CEOs exposed to the Korean War pursued less aggressive investment and financing policies, particularly when exposure involved intense violence (Choi *et al.*, 2021). Similar patterns appear in other contexts where CEOs who grew up amid conflict display lower risk tolerance and more restrained investment behavior. Overall, war-related early-life experiences are frequently interpreted through imprinting and upper-echelons perspectives where early trauma shapes cognitive schemas that persist and later influence strategic judgment. At the same time, results can vary by cohort and context; generational dynamics and institutional constraints can moderate whether conflict exposure reduces risk-taking uniformly or shifts behavior toward domain-specific caution.

4.6.1.2 Economic hardship and poverty. Economic hardship, including poverty, famine, and macroeconomic crises, also produces lasting effects on managerial preferences, with scarcity experiences often imprinting stronger concern for downside risk and financial fragility in most studies. CEOs who endured hardship tend to adopt precautionary policies, such as liquidity hoarding, debt restraint, and conservative investment choices. Famine exposure, for example, is linked to stronger risk pessimism and avoidance of high-uncertainty projects while CEOs reduce aggressive expansion and favor conservative accounting and financing. Such conservatism can yield stabilizing outcomes as firms led by famine-exposed CEOs exhibit lower likelihood of extreme negative events (e.g. crash risk) and sometimes better crisis-period performance due to buffers and prudence.

Importantly, the poverty/hardship literature also identifies a prosocial pathway. Childhood deprivation can cultivate empathy and stakeholder orientation, motivating greater CSR and sustainability engagement. Evidence suggests that CEOs from disadvantaged backgrounds may deliver stronger ESG performance, particularly under conditions that support long-horizon strategies (e.g. longer tenure or compatible investor preferences) (Liu and Hooy, 2024). In addition, family-level socioeconomic decline can imprint long-term orientation, increasing CSR and forward-looking investments (Cai and Zhou, 2024). However, hardship can be a double-edged sword as in some settings scarcity-induced insecurity may increase pressure for achievement and financial security, potentially elevating unethical conduct or opportunistic behavior unless governance constraints are strong (Liu *et al.*, 2023). Overall, economic hardship tends to predict either (1) conservative risk posture and resilience, or (2) prosocial orientation and CSR while in some cases producing risk-seeking or misconduct under weak controls.

4.6.1.3 Natural disasters and environmental shocks. A third antecedent category involves exposure to natural disasters (e.g. earthquakes, floods, droughts) and environmental degradation. Disaster experiences can trigger post-traumatic growth or heightened threat sensitivity. Recent evidence indicates that disaster-exposed CEOs often become more socially conscious and stakeholder-oriented. For instance, CEOs who experienced severe disasters in childhood show higher CSR engagement, explained by increased compassion and, in some cases, stronger risk aversion (Choi *et al.*, 2023). The CSR effect is stronger when CEOs have longer career horizons and when local social capital is high, which supports the mobilization of resources and legitimacy for CSR initiatives.

Environmental scarcity also shapes sustainability choices. CEOs exposed to water shortages tend to emphasize corporate water performance (Zhou *et al.*, 2024), and those exposed to pollution often invest more in green innovation (Tang *et al.*, 2024). However, disaster imprints can also depress risk-taking in specific strategic domains; for example, earthquake exposure has been linked to lower appetite for technological innovation and slower digital transformation, consistent with a trauma-driven avoidance of uncertainty (Luo *et al.*, 2024). Thus, disaster/environmental antecedents often promote CSR and sustainability actions while potentially reducing high-variance strategic experimentation.

4.6.1.4 Family structure and upbringing. Several studies examined how the family environment in early life, including birth order, family stability, and parental or socioeconomic background, shapes CEOs' managerial preferences and corporate behavior, with a particularly robust finding concerning birth order effects. Drawing on psychology and family sociology, later-born individuals are often characterized as more rebellious and risk-tolerant, whereas first-borns are typically socialized to be responsible, compliant, and risk-averse. Consistent with this logic, empirical evidence shows that CEO birth order is systematically associated with corporate innovation and risk-taking decisions. Using data from Chinese family firms, Wan *et al.* (2021) found that first-born CEOs invest significantly less in R&D, while later-born CEOs pursue more aggressive innovation strategies. Complementary evidence from privately controlled firms indicates that later-born owners generate higher innovation outputs, reflecting a stronger propensity for exploratory investment, although this effect is weakened when family governance constraints are strong (e.g. when an elder sibling occupies a dominant board position) (Li *et al.*, 2021). Related work further shows that first-born CEOs engage in fewer innovation activities, particularly in non-state firms where managerial discretion is greater, suggesting that conservative imprints associated with eldest-child socialization translate into lower corporate innovation intensity (Wan *et al.*, 2021).

Beyond birth order, family disruptions and economic shocks during childhood also leave enduring imprints. Sudden family economic decline represents a salient form of early-life trauma that can foster resilience and long-term orientation. Cai and Zhou (2024) showed that founders who experienced family-level economic setbacks during childhood subsequently exhibit stronger long-term strategic orientation, which in turn leads to higher CSR engagement and other forward-looking investments. More broadly, social class background constitutes a key family-related antecedent shaping executive cognition as CEOs from humble or working-class origins often retain frugal preferences and heightened empathy toward employees and stakeholders, whereas those from elite or politically connected families may rely more heavily on social capital and networks in strategic decision-making. In a foundational study, Kish-Gephart and Campbell (2015) demonstrated that CEOs' social class origins significantly influence strategic risk-taking, with executives from lower social classes consistently favoring safer strategic options than their upper-class counterparts.

In conclusion, these findings indicate that family-based early-life antecedents, including birth order dynamics, childhood family trauma, and social class of origin, contribute meaningfully to heterogeneity in CEO decision styles. Consistent with upper echelons theory, such formative family experiences shape executives' risk preferences, ethical orientation, and strategic priorities, with persistent implications for corporate innovation, CSR, and long-term firm behavior.

4.6.1.5 Other formative experiences. Beyond childhood-related shocks, the literature also examines formative experiences and personal milestones occurring in late adolescence or early adulthood that generate persistent managerial imprints. A prominent stream focuses on military experience as a formative exposure and illustrates that, although military service typically takes place after childhood, it is consistently treated as an imprinting experience that shapes discipline, resilience, and tolerance for high-stakes decision-making. Empirical evidence from China and the United States shows that CEOs with military backgrounds tend to exhibit more decisive and action-oriented strategic behavior (Zhang *et al.*, 2025), enhanced organizational resilience during systemic shocks (Wang *et al.*, 2025), and higher earnings quality and firm value (Li *et al.*, 2024). At the same time, the effects of military imprinting vary across decision domains: while military-experienced executives engage in less accrual-based earnings management, they may substitute toward real earnings management, reflecting a preference for operational control over accounting discretion (Xu *et al.*, 2024). Governance-related outcomes further suggest that firms led by ex-military executives face lower perceived audit risk, as reflected in reduced audit fees (Quan *et al.*, 2023), although other studies document contextual trade-offs in risk-taking and performance (Lin *et al.*, 2021). Overall, the military-imprint literature highlights a coherent mechanism, structured training and exposure to extreme environments, while underscoring the importance of institutional and outcome-specific contingencies.

Another important antecedent concerns historical and institutional transitions experienced during youth, which generate cohort-based managerial mindsets. In the Chinese context, CEOs' exposure to different stages of market reform is associated with systematic differences in corporate orientation, and executives whose formative years coincided with the early and volatile reform period tend to exhibit skepticism toward CSR and non-market strategies, whereas those socialized during a more mature market environment display greater openness to CSR engagement (Li *et al.*, 2023c). Related evidence shows that reform-era exposure also shapes corporate financing behavior, with later cohorts displaying more proactive leverage and investment policies (Hao *et al.*, 2021). Extending this cohort logic beyond China, Yeoh and Hooy (2022) documented that CEOs from pre-independence generations in Malaysia, shaped by colonial hardship and conflict, are significantly more risk-averse in corporate investment decisions than younger cohorts. Taken together, these findings reinforce a central insight of the early-life experience literature that executives' strategic preferences and decision tendencies are partly products of the historical, institutional, and socioeconomic environments in which they came of age.

4.6.2 Decisions. Prior experiences manifest in the strategic and financial decisions CEOs make and the reviewed studies link early-life antecedents to a wide range of corporate decision domains, from risk-taking and investment to CSR and reporting practices. Key decision themes include:

4.6.2.1 Risk-taking and financial policy. Perhaps the most studied decision outcome is how ELE early-life experiences affect CEOs' risk appetite in corporate financial policies (investment levels, leverage, etc.). A clear pattern is that adverse experiences (wars, political upheaval, and economic crises) tend to reduce risk-taking, leading CEOs to adopt safer financial strategies. For example, war-exposed CEOs consistently exhibit lower leverage and more conservative financial management. This can be seen in China, where CEOs who went through the Cultural Revolution or famine era display lower corporate leverage and more cautious investment, attributable to imprint-driven risk aversion. Similarly, Malmendier *et al.* (2011) found that CEOs who grew up during the Great Depression remained debt-averse and avoided external financing decades later which amounted to an experience effect on capital structure. On the flip side, some early experiences can encourage greater risk-taking and CEOs with military backgrounds have been noted to sometimes take more aggressive risks in certain contexts (e.g. higher leverage or bold acquisitions), possibly due to a confidence or courage learned from service. There is also evidence that later-born CEOs (who may be inherently less risk-averse per their upbringing) pursue riskier strategies and innovations than first-born

CEOs. In addition, childhood poverty imprints can, under life-history theory, induce a nothing-to-lose mentality in some leaders, leading to surprisingly high corporate risk-taking under certain threat perceptions (Zhang *et al.*, 2022). Overall, however, the dominant finding is that traumatic or adverse early life experiences dampen corporate risk-taking and that CEOs with such backgrounds invest more conservatively, maintain lower debt, and emphasize survival over daring expansion. All of these underscore how deeply personal risk preferences, shaped long ago, drive major financial decisions.

4.6.2.2 Investment and innovation decisions. Early experiences also bias CEOs' decisions on strategic investments such as R&D, acquisitions, and expansion projects. As previously noted, conservative-imprinted CEOs often limit investment in risky projects. Examples include famine-scarred CEOs avoiding large acquisitions or aggressive expansions, preferring to build cash reserves and invest in safer projects, while; war-experienced CEOs show restraint in M&A, a point reiterated by Choi *et al.* (2021) who reported on fewer major investments by war-imprinted CEOs, especially in uncertain times. By contrast, a more risk-tolerant imprint (or a positive formative experience) can spur greater innovation investment, such as later-born CEOs and those with relatively stable early lives, who are more likely to embrace R&D and new ventures. For example, founders' birth order studies indicate later-born leaders drive more product innovation and R&D spending as well as CEOs whose formative years coincided with booming economic conditions may have a higher risk threshold and confidence, leading them to invest heavily for growth. Hao *et al.* (2021) showed that Chinese CEOs who benefited from the post-1978 economic boom imprint tend to use higher debt and invest more in expansion, reflecting an ingrained optimism gained from growing up in prosperity. In summary, early-life experiences often tilt the scale of strategic investment decisions toward caution and under-investment in the case of adverse imprints, or toward bold innovation in the case of more positive or empowering early experiences.

4.6.2.3 Corporate social responsibility (CSR) and sustainability. A striking outcome of many adversity-type early-life experiences is an elevated commitment to CSR and socio-environmental initiatives. Numerous studies link early hardships with subsequent pro-social corporate decisions and have shown that CEOs who have known hunger, poverty, or disaster often feel a personal mission to address social ills via their firms. These childhood experiences tend to foster empathy, leading CEOs to allocate more resources to CSR and philanthropy. For instance, a CEO's famine experience is associated with significantly higher corporate charitable donations and CSR engagement (e.g. greater spending on poverty alleviation and community programs), an effect sometimes termed a "prosocial imprint". Han *et al.* (2022) documented that Chinese CEOs who survived the famine of 1959–1961 were notably more generous in corporate philanthropic giving than their peers, particularly when their firms had the slack resources (large firm size) to support donations. Similarly, disaster-imprinted CEOs prioritize stakeholder welfare, and Choi *et al.* (2023) found a positive relationship between a CEO's childhood natural disaster experience and the firm's CSR performance, mediated by the CEO's internalization of prosocial values. Even traumatic family events can heighten social consciousness, such as CEOs who experienced family tragedy or instability implementing more robust employee welfare policies (as a way of providing security they previously lacked) and focusing on "employee-friendly" CSR as better labor practices. On the environmental side, early exposure to pollution or resource scarcity leads to greener decisions, such as CEOs who grew up with water shortages often investing more in water-saving technologies and stricter environmental standards (Zhou *et al.*, 2024), as well as those who witnessed severe pollution in youth pushing for more green innovation (patents for clean tech, etc.). Notably, the strength of these CSR decisions often depends on context; for example, the positive effect of a CEO's adversity imprint on CSR is amplified in private firms or those with strong external governance (where CEOs have both the freedom and pressure to enact CSR) and can be weakened if the CEO's later experiences dilute the imprint (e.g. diverse career exposure or very high compensation might reduce the influence of early values). In aggregate, however, the literature strongly suggests that early-life adversity frequently translates into a heightened

CSR orientation, a silver lining where personal suffering drives leaders to build more compassionate, socially responsible organizations.

4.6.2.4 Reporting, governance, and ethical decisions. CEO early experiences also color their approach to financial reporting and corporate governance decisions and several studies show that difficult formative events foster more conservative and transparent reporting practices. For example, CEOs who lived through the Chinese Cultural Revolution or other upheavals tend to adopt stricter accounting conservatism, recognizing losses more promptly and exercising caution in financial reports. [Liu et al. \(2024\)](#) found that CEOs with socio-political turmoil in youth exhibit significantly higher accounting conservatism, especially in high-risk contexts or state-owned firms. The suggested mechanism is imprint-driven risk aversion as, after having seen worst-case scenarios, these CEOs prefer to err on the side of caution and honesty in financial disclosures. In addition, management choices about earnings are impacted and [Xu et al. \(2024\)](#) reported that Chinese executives with military experience manage earnings in a distinctive way in that they avoided opportunistic accrual manipulations but may engage in real earnings management to maintain performance. This reflects a “play it ethical or safe” dilemma resolved in favor of safer, if less transparent, methods. CEO life experiences can also shape corporate governance outcomes, such as audit quality and regulatory compliance, and is supported by a study conducted by [Quan et al. \(2023\)](#) who found that firms led by ex-military CEOs are charged lower audit fees; as a result, auditors perceive these executives as more trustworthy, leading companies that have fewer internal control weaknesses, fewer restatements, and less litigation which implies that CEOs with rigorous formative backgrounds (military or other disciplined environments) instill better governance and transparency, reducing perceived audit risk. Conversely, as noted earlier, CEOs with certain adversity imprints (e.g. extreme poverty) might have a higher propensity for unethical decisions, such as fraud, if their imprint creates excessive pressure for financial success. Indeed, [Liu et al. \(2023a, b\)](#) cautioned that poverty-imprinted CEOs were more likely to commit financial fraud in China, although this tendency was mitigated by factors including older CEO age and strong board oversight. In summary, early imprints often influence how truthfully and cautiously a CEO reports and governs with many traumatic imprints encouraging conservative reporting and high integrity, whereas some imprints tied to survival stress might increase tolerance for rule-bending unless checked by controls.

4.6.2.5 Strategic orientation and other decisions. Finally, early-life experiences can shape high-level strategic orientations such as how bold or defensive a firm’s overall strategy is. For instance, [Zhang et al. \(2025\)](#) showed that Chinese CEOs with military experience imprint are associated with more decisive, aggressive strategic moves, reflecting a bold strategic orientation, and that they execute plans swiftly and pursue strategic change more readily than others. In contrast, CEOs with childhood trauma (e.g. famine) often steer firms away from high-variability ventures including international expansion. [Du et al. \(2025\)](#) found that famine-traumatized CEOs are less likely to enter foreign markets, leading to lower firm internationalization, an important strategic decision influenced by risk aversion from early trauma. Similarly, CEOs who grew up under political instability or in low-trust societies might emphasize political connections or legitimacy in strategy over pure market competition. Regarding entrepreneurship decisions, one study showed that individuals with military backgrounds are less likely to become entrepreneurs (preferring stable employment), indicating imprint effects even on the decision to start a venture. In sum, virtually every major corporate decision area examined – from how much debt to take, how much to spend on R&D, whether to acquire rivals, how to approach sustainability, how openly to report finances, and whether to expand abroad – bears the stamp of the CEO’s early-life formative influences.

4.6.3 Outcomes. The ultimate outcomes linked to CEO early-life imprints are the firm-level results of the above decisions. While many studies focus on decision variables (as dependent variables) such as risk-taking or CSR engagement, several also measure performance outcomes and other organizational consequences downstream. Overall, the research suggests

that CEO early-life experiences can have material impacts on firm performance, risk profile, and sustainability outcomes, all of which are mediated by the decisions CEOs make.

4.6.3.1 Firm performance and value. A number of studies tie CEO experiences to financial performance metrics, however, the direction of impact can vary with context. On one hand, the conservative strategies of adversity-imprinted CEOs may trade specific benefits in boom times for greater resilience. [Lin et al. \(2021\)](#) found that Chinese firms led by military-experienced CEOs tended to underperform compared to their peers in normal periods, but they performed significantly better during industry downturns. The military-imprinted caution and preparation paid off in crises, boosting survival and recovery – an outcome also observed for famine-exposed CEOs' firms during the 2008 financial crisis – which highlights that early-life experiences influenced decisions which can make firms more resilient to shocks. Indeed, [Wang et al. \(2025\)](#) showed that companies with ex-military CEOs had greater organizational resilience in the COVID-19 pandemic, experiencing smaller performance declines and faster post-shock recovery than other firms, attributable to lower pre-shock risk exposure and superior crisis management. On the other hand, if taken to the extreme, conservative imprints might dampen growth opportunities and thus value in stable times, for example, over-cautious investment policies could lead to under-investment, slowing growth. Conversely, more risk-tolerant early-life experiences (such as a CEO who grew up in prosperity or later-born innovators) might boost innovation output and long-run performance, albeit with higher volatility. Some empirical evidence connects positive early-life experiences with higher growth and productivity and, overall, firm value outcomes seem to reflect a risk–return balance shaped by CEO imprint: adversity-induced conservatism yields stability, whereas more risk-tolerant imprints can yield higher innovation and growth, but with potential downsides. Importantly, a few studies link early life experiences to market valuation; for instance, [Li et al. \(2024\)](#) found that US firms with military veteran executives enjoyed higher earnings quality and firm valuations, suggesting investors placed a premium on the transparency and discipline those CEOs possessed. Meanwhile, [Conyon et al. \(2015\)](#) noted that in China politically-connected CEOs were rewarded with high pay and occasional investor favor, regardless of whether or not they delivered superior performance, implying that outcomes such as CEO compensation and market perceptions can also be influenced by CEO pedigree. In sum, firm performance outcomes are indeed affected by CEO early experiences, usually indirectly via the chosen strategies. The literature indicates that, while prudent, adversity-scarred CEOs may sacrifice some short-term upside but they gain in downside protection, yielding more stable long-term performance and value preservation (e.g. fewer crashes), whereas risk-inclined CEOs might achieve higher innovation and expansion which can come with corresponding performance volatility.

4.6.3.2 Risk profile and stability. Several studies explicitly examine firm risk outcomes – such as stock price crash risk, earnings volatility, or incidence of crises – under CEOs with different imprints. A clear finding is that CEOs with trauma of past shocks lead firms with lower extreme risk. For example, firms led by famine-experienced CEOs have significantly lower stock price crash risk, attributed to those CEOs' conservative financial policies and candid disclosure. [Hu et al. \(2020\)](#) reported that famine-imprinted CEOs' firms had more stable stock performance and less downside risk than similar firms, and war- and disaster-exposed CEOs, by curtailing risk-taking, make their firms less prone to large negative surprises. This enhanced stability is the flipside of the resilience noted above. Additionally, outcome studies found fewer legal or compliance breaches in firms led by certain imprinted CEOs. For instance, [Lin et al. \(2021\)](#) observed more frequent regulatory violations in Chinese firms led by ex-military CEOs – an unexpected result they explained by cultural differences (China's military imprint may involve more confidence and rule-bending in business, unlike US veterans who show higher ethical compliance). However, more commonly, the research uncovered reduced misconduct risk; as previously mentioned, ex-military leaders in other contexts are associated with fewer internal control problems and lawsuits, yielding lower audit risk. And, although poverty imprint increased fraud in some Chinese firms, strong governance

or CEO maturity could neutralize that effect, again protecting the firm from risk. In summary, CEO early-life experiences can meaningfully alter a firm's risk profile as, generally, adverse experiences drive lower variability and extreme risk, contributing to corporate stability, whereas certain imprints might increase operational risk. For stakeholders and investors, this means CEO background is a pertinent indicator of firm risk culture.

4.6.3.3 CSR and ESG performance. Given the many early-life experience influences on CSR decisions, it follows that CSR outcomes are closely tied to CEO imprints and studies confirm that firms led by CEOs with adversity or empathy-building experiences tend to achieve higher CSR and ESG performance. For example, [Liu and Hooy \(2024\)](#) documented a strong positive link between a CEO growing up in poverty and a firm's overall ESG score, illustrating that such firms scored better on environmental and social metrics than peers. Similarly, research on philanthropic outcomes finds that famine- or disaster-imprinted CEOs result in companies that donate more to charity and engage more in community initiatives, improving corporate reputation and stakeholder relations. On the environmental dimension, CEOs with formative exposure to pollution or resource scarcity deliver tangible improvements in those areas (e.g. reduced water use, more green patents), thus boosting the firm's sustainability performance metrics. On the flip side, there is some evidence that if a CEO lacks such pro-social imprints, CSR performance can lag. [Xu and Ma \(2022\)](#) noted that CEOs without poverty or hardship experience may be less generous in CSR, focusing more on financial metrics. Moreover, a negative imprint could harm CSR if it fosters mistrust or short-termism, for instance, a CEO who grew up in a low-trust environment might initially be disinclined to invest in CSR. However, interestingly, one study found the opposite where low-trust upbringing led CEOs to engage in more CSR, possibly to build external trust. In any case, the outcomes in the CSR/ESG domain are largely positive when CEOs have empathy-inducing backgrounds, validating the idea that personal values formed early in life directly translate into a company's societal impact.

4.6.3.4 Innovation and growth outcomes. Finally, a number of studies have looked at innovation outputs (patents, new products) and international growth as outcomes of CEO imprint-driven decisions and the evidence of these suggests that certain imprints restrain growth while others enhance it. We saw that first-born CEOs invest less in R&D and their firms tend to lag in innovation output compared to later-born-led firms, affecting long-term growth prospects. Likewise, CEOs with heavy trauma may forgo expansion opportunities, for example, [Du et al. \(2025\)](#) showed lower foreign market presence under famine-traumatized CEOs. In contrast, a CEO who experienced a stable or encouraging environment may pursue more aggressive expansion, yielding outcomes such as faster sales growth or a larger international footprint. Although fewer studies directly measured these outcomes, the implication is that CEO imprints can have enduring economic consequences for a firm's trajectory and conservative imprints trade innovative growth for stability, whereas bold imprints can drive growth at the cost of higher risk. An interesting case is the "star CEO" versus the "political CEO" outcome in China studied by [Conyon et al. \(2015\)](#), who found that politically connected CEOs (often coming from elite family backgrounds) did not improve firm performance on average, yet those CEOs commanded higher pay and often remained in power due to their connections. This suggests a misalignment where an antecedent (family political ties) leads to an outcome of rent extraction (high CEO compensation) rather than value creation which is a nuanced outcome in corporate governance terms.

In summary, the body of research demonstrates that CEO early-life experiences can leave a measurable imprint on firm-level outcomes ranging from financial performance and stability to CSR achievements. The ADO model thus provides a unifying framework where antecedents such as war, famine, poverty, disasters, and family conditions shape CEO psychology. These influence how a CEO leads, including decision-making on risk, investment, CSR, and reporting, and those decisions drive outcomes in performance, risk profile, and sustainability. The conceptual framework in [Table 7](#) maps the specific studies to each ADO category.

Table 7. Antecedents–decisions–outcomes (ADO) framework of CEO early-life experiences and corporate outcomes

Antecedents (A)	Decisions (D)	Outcomes (O)
<i>Types of CEO early-life experiences</i> • War and conflict exposure • Famine, poverty, and economic hardship • Natural disasters and environmental shocks • Family background and birth order • Military experience • Exposure to institutional and historical transitions	<i>CEO decision channels and corporate choices</i> • Risk tolerance and risk-taking behavior • Investment and R&D intensity • Capital structure and leverage decisions • Strategic orientation (e.g. innovation, internationalization) • CSR, ESG, and stakeholder-oriented initiatives • Financial reporting and disclosure conservatism	<i>Firm-level consequences</i> • Financial performance and firm value • Innovation outputs and growth • CSR and ESG performance • Organizational resilience and stability • Stock price crash risk and earnings quality • International expansion and competitiveness
<i>Underlying imprinting mechanisms</i> • Persistent risk perceptions • Time horizon and long-term orientation • Ethical values and prosocial motivation • Discipline and decisiveness	<i>Moderating conditions</i> • Ownership type (SOEs versus non-SOEs) • Governance strength and board oversight • CEO tenure and overseas experience • Market competition and institutional quality	<i>Context-dependent effects</i> • Stronger under high uncertainty • Attenuated by governance constraints • Amplified in emerging and transition economies

Note(s): The table summarizes how CEOs' formative early-life experiences (antecedents) shape decision channels and corporate choices (decisions), which in turn lead to heterogeneous firm-level consequences (outcomes), subject to institutional and governance contingencies

Source(s): Author's compilation

4.6.4 Cross-study synthesis: recurring patterns, contradictions, and gaps. Beyond the individual findings summarized above, several broader regularities have emerged across the literature. First, CEO early-life experiences most consistently influence risk-related managerial choices, particularly in domains such as financing conservatism, investment restraint, liquidity preference, and crisis preparedness. Across different antecedent categories, the dominant pattern is not a simple increase or decrease in risk-taking, but rather a re-weighting of downside risk and vulnerability under uncertainty. In this sense, formative experiences appear to shape how CEOs interpret exposure to loss, fragility, and external shocks, which then translates into more cautious strategic and financial choices in many settings (Choi *et al.*, 2021; Li *et al.*, 2023a, b; Malmendier *et al.*, 2011; Yeoh and Hooy, 2022).

Second, the literature reveals a recurrent dual-pathway pattern. Adversity-related experiences, such as war, poverty, famine, and disaster exposure, often induce caution and defensive strategic behavior, yet they may also strengthen empathy, stakeholder sensitivity, and longer-term orientation. As a result, the same broad category of formative experience may be associated, not only with lower leverage, more restrained investment, or greater conservatism, but also with stronger CSR/ESG engagement, sustainability-related initiatives, and stakeholder-oriented corporate behavior. This suggests that CEO early-life imprints do not operate through a single mechanism; rather, they may activate both self-protective and prosocial orientations depending on the organizational and institutional setting (Cai and Zhou, 2024; Choi *et al.*, 2023; Liu and Hooy, 2024; Tang *et al.*, 2024; Xu and Ma, 2022).

Third, the evidence is not fully uniform and several contradictions remain. Hardship-based imprints are frequently associated with lower corporate risk-taking and more conservative policy choices, yet in some contexts they are linked to stronger achievement pressure,

opportunistic conduct, or alternative forms of managerial substitution. Similarly, military-related imprints may improve discipline, resilience, and reporting quality while simultaneously shifting behavior toward other strategic or operational responses. These mixed findings indicate that CEO early-life experiences should not be interpreted as deterministic predictors of firm behavior. Instead, it should be noted that the same antecedent may generate different expressions across decision domains, especially when executives substitute across reporting, operating, investment, or financing channels (Lin *et al.*, 2021; Liu *et al.*, 2023; Xu *et al.*, 2024).

Fourth, the literature points to a set of recurring boundary conditions that help reconcile these mixed results. Governance strength, ownership structure, institutional environment, CEO discretion, tenure, and overseas exposure repeatedly shape whether and how formative imprints become visible in corporate decisions and outcomes. This suggests that early-life experiences are better understood as latent managerial imprints whose expression is filtered through organizational and contextual conditions, rather than as direct and unconditional determinants of firm behavior (Du *et al.*, 2025; Li *et al.*, 2023b; Wang *et al.*, 2025).

Finally, several research gaps remain. Much of the literature still relies on shock-based proxies, while family-based and socio-demographic antecedents remain comparatively underdeveloped. In addition, many studies focus either on a single decision domain or one outcome at a time, limiting understanding of how early-life imprints may jointly shape bundles of strategic choices. Future research would therefore benefit from richer measurement of formative conditions, stronger theorization of mechanisms, and more integrated designs that examine how antecedents influence multiple decisions and outcomes simultaneously. Such work would strengthen cumulative theorizing and improve understanding of why similar early-life exposures can generate heterogeneous corporate consequences across contexts.

4.6.5 Methodological patterns in the reviewed literature. Methodologically, the reviewed literature is dominated by archival quantitative designs. Most studies combine CEO-level information with firm-level financial or non-financial data, but they differ in how CEO early-life experiences are measured. For example, one group of studies relies on direct biographical or career-history information to capture formative experiences, such as military service, executive background, birth order, or family and social-class origins (Bamber *et al.*, 2010; Kish-Gephart and Campbell, 2015; Lin *et al.*, 2021; Solano *et al.*, 2024; Wan *et al.*, 2021) and this approach has the advantage of being closely tied to the CEO's observed personal history, although it may depend on the availability and accuracy of public biographical information.

A second group relies on cohort-based measures and these studies link CEOs' birth cohorts, formative years, or early-career periods to major historical or institutional events, such as famine, economic reform, political upheaval, or national transformation (Hao *et al.*, 2021; Hu *et al.*, 2020; Li *et al.*, 2023a, b, c; Malmendier *et al.*, 2011; Yeoh and Hooy, 2022). Cohort-based designs are useful when individual-level exposure cannot be observed directly, but they require careful justification of the sensitive developmental window and may be vulnerable to within-cohort heterogeneity.

A third group uses location-based exposure proxies by matching CEOs' birthplaces or early-life locations with regional variation in historical shocks or environmental conditions. Examples include studies linking executives' birth regions to war intensity, natural disaster exposure, pollution exposure, or resource scarcity (Choi *et al.*, 2021, 2023; Luo *et al.*, 2024; Tang *et al.*, 2024; Zhou *et al.*, 2024). These measures improve plausibility when shocks vary geographically, but they may not fully capture individual exposure intensity, family mobility, or post-birth residential history.

In terms of empirical strategy, the most common approaches include panel regressions, interaction-based moderation tests, and cross-sectional comparisons. A smaller but growing subset of studies has adopted quasi-experimental or natural-experiment logic to strengthen causal interpretation, particularly when examining exposure to famine, reform periods, or major historical shocks (Du *et al.*, 2025; Hao *et al.*, 2021). Overall, the methodological pattern reflects growing sophistication in identification, but it also highlights the need for stronger

5. Discussion and future research directions

The evidence reviewed converges on the idea that CEO early-life experiences constitute durable micro-foundations that shape managerial preferences and values, and thereby help explain persistent heterogeneity in corporate policies and outcomes, even under similar external constraints. Across the 45 studies, two broad regularities stand out. First, adverse and high-salience exposures, such as war, famine, political upheaval, and severe scarcity, are frequently associated with heightened threat sensitivity and risk caution, translating into more conservative financing and investment profiles (e.g. lower leverage, restrained expansion) (Choi *et al.*, 2021; Li *et al.*, 2023a, b; Malmendier *et al.*, 2011). Second, early-life experiences also operate through value-based and prosocial channels, where hardship can increase empathy and stakeholder orientation, motivating stronger sustainability choices (Xu and Ma, 2022). This duality helps reconcile why early adversity sometimes predicts caution and retrenchment, yet in other settings predicts longer horizons and stakeholder-oriented investments.

5.1 Antecedents and imprinting mechanisms

A central discussion point is mechanism multiplicity. Many studies interpret early-life experiences effects through imprinting logic and upper-echelons reasoning and state that early experiences shape cognitive schemas (e.g. perceived uncertainty, control beliefs) and values (e.g. fairness, frugality), which subsequently structure strategic interpretation and choice. In the decisions evidence, the strongest and most replicated channel involves risk preferences, with adverse macro experiences generally dampening risk-taking and encouraging conservative policies. For example, war-imprinted CEOs exhibit more conservative corporate policies (Choi *et al.*, 2021), and famine-era exposure is linked to lower corporate risk-taking, contingent on ownership and market conditions (Li *et al.*, 2023a, b). However, the same broad antecedent class can generate non-linear or context-dependent risk responses, consistent with “double-edged” interpretations (e.g. childhood poverty predicting risk-taking differences under threat perceptions) (Zhang *et al.*, 2022).

Beyond childhood shocks, several studies treated military experience as a formative imprint that shapes discipline, rule orientation, and crisis response. In the reviewed literature, military-experienced CEOs are linked to strategic decisiveness, higher resilience in crises, and reporting/audit outcomes (e.g. resilience under shocks, earnings quality, audit fees), while also showing outcome-specific trade-offs such as substitution between accrual-based and real earnings management (Quan *et al.*, 2023; Solano *et al.*, 2024; Wang *et al.*, 2025; Xu *et al.*, 2024).

A second extension concerns institutional transitions and cohort-based imprints. Evidence from China suggests that CEOs socialized during different reform stages exhibit systematically different orientations toward CSR and non-market strategy, consistent with era imprint logic (Li *et al.*, 2023c), and that reform exposure is also tied to financing decisions and leverage posture (Hao *et al.*, 2021).

5.2 Decision pathways

The finance-facing core of the literature links early-life experiences to leverage, debt aversion, and conservative financial management. The reviewed synthesis highlights that adverse experiences (wars, upheaval, crises) are frequently associated with lower leverage and more cautious investment, aligning with persistent “scarcity/trauma imprint” arguments (Choi *et al.*, 2021; Malmendier *et al.*, 2011). Conversely, exposures tied to prosperity and reform-era

opportunity may imprint optimism and higher risk tolerance, aligning with more proactive financing and expansion (Hao *et al.*, 2021).

Furthermore, the literature also consistently shows that risk-related imprints spill into innovation choices. A robust micro-level family-based antecedent is birth order, where first-born CEOs in Chinese settings invest less in R&D and engage in fewer innovation activities, whereas later-born leaders display stronger innovation intensity (Li *et al.*, 2021; Wan *et al.*, 2021). This pattern reinforces the broader theme that early-life socialization shapes exploratory versus conservative strategic postures.

Finally, prior evidence indicates that hardship can trigger prosocial orientation and stakeholder sensitivity, with poverty experience predicting stronger CSR engagement (Xu and Ma, 2022). Similarly, environmental experiences (e.g. pollution exposure) have been linked to stronger corporate green innovation, with effects conditioned by cultural and institutional factors (Tang *et al.*, 2024). These results suggest early-life experiences can influence not only traditional finance policies but also the firm's non-market posture and sustainability investments.

5.3 Outcomes and cross-domain consequences

At the outcome level, the reviewed evidence suggests that CEO early-life experiences shape, not only isolated strategic choices, but also broader firm-level consequences. Across studies, these outcomes include resilience under shocks, earnings quality, audit-related outcomes, sustainability performance, and internationalization. A recurring pattern is that formative imprints often influence outcomes indirectly through decision pathways, rather than through a direct one-to-one relationship; for example, conservative risk preferences may improve resilience and reduce exposure to extreme downside outcomes, while prosocial orientation may strengthen CSR engagement and sustainability-related performance (Du *et al.*, 2025; Tang *et al.*, 2024; Wang *et al.*, 2025).

At the same time, the literature also indicates that outcomes are heterogeneous across domains. Military-related imprints, for instance, are associated with resilience and reporting discipline, but may also involve substitution across managerial responses, such as between accrual-based and real earnings management. Similarly, hardship-related experiences may support longer-term resilience and stakeholder orientation in some settings, yet lead to defensive strategic choices or lower internationalization in others. These findings suggest that CEO early-life experiences are best understood as shaping bundles of outcome tendencies whose expression depends on both the intervening decision channels and the broader governance and institutional context (Du *et al.*, 2025; Quan *et al.*, 2023; Solano *et al.*, 2024; Xu *et al.*, 2024).

5.4 Boundary conditions and why results differ

A key discussion theme is about ELE early-life experiences effects being rarely unconditional and reviewed studies repeatedly point to ownership type (SOEs (state-owned enterprises) versus non-SOEs), governance constraints, competition intensity, CEO-level attributes (e.g. overseas experience), and tenure as moderators. For example, childhood famine trauma is associated with lower firm internationalization, but the effect is weaker in SOEs and when CEOs have overseas experience (Du *et al.*, 2025). Similarly, military-imprint effects on restructuring strategies appear contingent on CEO tenure (Solano *et al.*, 2024). Collectively, these contingencies imply that early imprints operate through discretion and constraints: governance and institutions can attenuate, redirect, or amplify how personal history translates into corporate outcomes.

5.5 Future research directions

To make the future research agenda more explicit, Table 8 summarizes the key gaps identified from the review and translates them into future research directions. The table is organized

Table 8. Key research gaps and future research directions

ADO area	Key research gap identified in the review	Future research directions
Antecedents	Existing studies focus mainly on major historical shocks, such as war, famine, political upheaval, and natural disasters. Family-based and socio-demographic antecedents remain less developed	Future studies should examine broader early-life antecedents, including family instability, parental occupation, household resources, sibling structure, social class mobility, and early educational environment
Antecedents	Childhood, adolescence, and early adulthood are often treated as similar formative periods, although they may generate different imprinting effects	Future research should distinguish between sensitive developmental periods and test whether childhood adversity, adolescent experiences, and early-adulthood imprints influence CEOs through different mechanisms
Decisions	Many studies examine one corporate decision at a time, such as leverage, investment, innovation, CSR, or disclosure	Future studies should examine whether CEO early-life experiences create coherent decision bundles across leverage, liquidity, investment, reporting, CSR, and internationalization
Decisions	The mechanisms linking early-life experiences to corporate decisions remain incompletely specified, especially when the same experience generates both conservative and prosocial behavior	Future research should test competing mechanisms, including risk aversion, loss sensitivity, empathy, stakeholder orientation, achievement pressure, and long-term orientation
Outcomes	Evidence on downstream outcomes remains fragmented across performance, resilience, ESG, earnings quality, crash risk, and internationalization	Future studies should trace how CEO early-life experiences affect long-term firm consequences through decision channels and examine spillovers across financial, strategic, and sustainability outcomes
Boundary conditions	Moderating evidence remains dispersed across ownership type, governance strength, CEO power, institutional quality, and market competition	Future research should develop integrated contingency models explaining when early-life imprints are amplified, constrained, or redirected by governance and institutional environments
Context	The evidence base is concentrated in a limited number of countries, especially China and the United States	Future studies should extend the literature to Southeast Asia, South Asia, Europe, and multi-country settings to assess institutional generalizability
Methodology	Measures of CEO early-life experiences vary across biographical, cohort-based, and location-based proxies	Future studies should improve measurement validity by triangulating biographical information with historical, geographic, and archival data, and by reporting exposure windows more clearly
Theory	Most studies rely on upper echelons theory and imprinting theory, while other behavioral and institutional theories remain underused	Future research can incorporate prospect theory, behavioral agency theory, threat-rigidity theory, social class theory, and the attention-based view to explain heterogeneous effects

Source(s): Author's compilation

around the ADO framework and also highlights theoretical, contextual, and methodological gaps that limit cumulative progress in the literature.

Table 8 shows that future research should move beyond documenting whether CEO early-life experiences matter and toward explaining how, when, and through which decision channels they shape corporate outcomes. This shift is important for building a more cumulative literature that connects formative antecedents, managerial decisions, and firm-level consequences in a theoretically coherent way.

5.5.1 Future research on antecedents. First, future studies should broaden the operationalization of antecedents beyond major exogenous shocks, such as war and famine, by developing richer and more comparable measures of family-based and socio-demographic formative conditions, including birth order, childhood family disruption, social-class origins, and early household instability. Although these antecedents appear theoretically important and empirically consequential, they remain less developed than shock-based proxies (Cai and Zhou, 2024; Kish-Gephart and Campbell, 2015; Wan *et al.*, 2021).

5.5.2 Future research on decision pathways. Second, future work should increase specificity at the decision-channel level by more explicitly theorizing and testing which imprinting mechanisms are activated across different corporate domains. Evidence from the literature suggests that the same antecedent may generate different expressions across financing, innovation, CSR, reporting, and strategic orientation, implying that decision pathways should be modeled more carefully rather than treated as generic behavioral outcomes. In particular, future studies should distinguish more clearly between self-protective, opportunity-seeking, and prosocial mechanisms and examine when executives substitute across different managerial actions (e.g. reduced accrual-based earnings management but increased real earnings management) (Xu *et al.*, 2024).

5.5.3 Future research on outcomes. Third, scholars should expand outcome coverage and examine cross-domain spillovers more systematically. The literature has moved beyond core corporate finance policies to include resilience, sustainability, reporting quality, and internationalization, yet these outcomes are often examined in isolation. Future research would benefit from integrated designs that test how early-life-experience-driven preferences jointly shape multiple decisions and outcomes, such as leverage, innovation investment, crisis preparedness, and long-term sustainability performance, thereby producing coherent strategy bundles rather than isolated effects (Du *et al.*, 2025; Lu *et al.*, 2025; Wang *et al.*, 2025).

5.5.4 Future methodological directions. Fourth, future research should strengthen methodological rigor by improving measurement validity and research design. Promising directions include combining historical shock proxies with richer biographical evidence, separating childhood from early-adulthood imprints more explicitly, expanding quasi-experimental and cross-country designs, and modeling selection into CEO roles more carefully. More methodological triangulation would also help reconcile mixed findings and improve comparability across studies.

6. Implications and future research directions

6.1 Theoretical implications

First, the literature benefits from tighter integration of imprinting and upper echelons theories as complementary, rather than competing, explanations. Upper echelons theory emphasizes how executive values, cognition, and preferences shape organizational outcomes, whereas imprinting theory explains why those values and preferences may persist over time and become activated under uncertainty. Taken together, these perspectives provide a stronger theoretical basis for explaining why similar firms may pursue different strategic and financial policies when led by CEOs with different formative experiences.

Second, the reviewed evidence implies a need for multi-path theorizing. Adversity-related experiences do not produce a single uniform effect. Instead, the same broad antecedent may simultaneously strengthen caution and downside-risk sensitivity while also fostering prosocial motivation, stakeholder sensitivity, and longer-term orientation. As a result, CEO early-life experiences may generate both conservative and stakeholder-oriented responses, with the net effect depending on the decision domain and contextual conditions (Xu and Ma, 2022; Zhang *et al.*, 2022).

Third, the review highlights the importance of boundary conditions in theorizing the effects of CEO early-life experiences. The evidence suggests that governance strength, ownership structure, institutional setting, and CEO discretion shape whether and how

formative imprints translate into observable corporate decisions and outcomes. This means that CEO early-life experiences are best understood, not as fixed predictors of firm behavior, but as contingent micro-foundations whose expression depends on organizational and environmental filters.

Beyond imprinting theory and upper echelons theory, the literature would also benefit from greater engagement with several underexplored theoretical lenses. The prospect theory and behavioral agency theories may help explain why adversity-related imprints intensify loss sensitivity and downside-risk focus on financing and investment decisions, and threat-rigidity theory could provide a useful explanation for why traumatic formative experiences sometimes lead to defensive strategic responses, reduced experimentation, and organizational conservatism under uncertainty. In addition, social class theory and social identity perspectives may help clarify how family background, deprivation, and social origins shape stakeholder orientation, prosocial behavior, and ethical decision-making. Finally, attention-based and managerial cognition perspectives could offer insight into how formative experiences influence what CEOs attend to, how they frame uncertainty, and why similar external conditions are interpreted differently across leaders. These lenses currently remain relatively underutilized in the current literature and therefore represent promising avenues for theoretical extension.

Overall, the theoretical contribution of this review lies in moving the literature beyond fragmented study-level findings toward a more integrated explanation of how formative executive experiences shape corporate behavior through multiple pathways and under contingent conditions.

6.2 Methodological implications

This review also has several methodological implications for research on CEO early-life experiences. First, the findings show that measurement choice is central to this literature and studies relying on direct biographical or career-history information, such as military service, executive background, birth order, or social-class origins, are closely connected to CEOs' observed personal histories, but they depend on the completeness and reliability of public biographical data (Bamber *et al.*, 2010; Kish-Gephart and Campbell, 2015; Lin *et al.*, 2021; Solano *et al.*, 2024; Wan *et al.*, 2021). By contrast, cohort-based studies link CEOs' birth years, formative periods, or early-career stages to broader historical events such as famine, economic reform, political upheaval, or national transformation (Hao *et al.*, 2021; Hu *et al.*, 2020; Li *et al.*, 2023a, b, c; Malmendier *et al.*, 2011; Yeoh and Hooy, 2022). These approaches are useful when individual-level exposure is difficult to observe, but they require clear assumptions about the relevant developmental window.

Second, the review highlights the importance of validating location-based exposure proxies. Several studies match CEOs' birthplaces or early-life locations with regional variation in war intensity, natural disasters, pollution exposure, or resource scarcity (Choi *et al.*, 2021, 2023; Luo *et al.*, 2024; Tang *et al.*, 2024; Zhou *et al.*, 2024) and, while this approach strengthens identification when historical shocks vary geographically, it may also introduce measurement error if executives moved during childhood or if regional exposure does not accurately capture individual-level experience. Future studies should therefore report exposure windows, birthplace assumptions, and sensitivity checks more clearly.

Third, causal interpretation remains an important methodological challenge. CEOs are not randomly assigned to firms, and firms may select CEOs whose backgrounds fit their strategic needs. Therefore, observed associations between CEO early-life experiences and corporate outcomes may partly reflect CEO–firm matching or omitted contextual factors. Some studies have addressed this concern by using historical shock exposure, natural-experiment logic, or difference-in-differences (DiD) designs to strengthen causal interpretation (Choi *et al.*, 2021; Du *et al.*, 2025; Hao *et al.*, 2021; Li *et al.*, 2023a, b) but the literature would benefit from more explicit tests of CEO selection, firm sorting, and alternative explanations.

Finally, systematic reviews in this area require transparent coding procedures because the classification of antecedents, decisions, and outcomes involves interpretive judgment and, as such, researchers should clearly explain how studies are coded into ADO categories, how ambiguous cases are resolved, and whether consistency checks are applied during data extraction. Greater transparency in coding, measurement, and research design would improve comparability across studies and help the literature move toward more cumulative theory development.

6.3 Practical implications

The reviewed evidence also has practical implications for boards, investors, and other stakeholders. First, CEO background information may provide useful, although probabilistic rather than deterministic, signals about a leader's likely strategic posture. Studies linking war, famine, and crisis-related exposure to more conservative risk-taking, investment, or financing behavior suggest that formative adversity can shape how CEOs evaluate downside risk and organizational fragility (Choi *et al.*, 2021; Li *et al.*, 2023a, b; Malmendier *et al.*, 2011; Yeoh and Hooy, 2022). Boards should therefore treat CEO life-history information as one contextual input in leadership assessment, especially when evaluating risk management and strategic fit.

Second, the evidence suggests that some formative experiences may be relevant for resilience and crisis preparedness. Studies on military-experienced CEOs and CEOs exposed to adversity show that early-life imprints can influence crisis response, reporting discipline, and organizational resilience (Quan *et al.*, 2023; Wang *et al.*, 2025; Xu *et al.*, 2024). This implication is particularly relevant for firms operating in uncertain, volatile, or crisis-prone environments.

Third, CEO formative background may also matter for sustainability and stakeholder management as prior studies show that CEOs exposed to poverty, natural disasters, pollution, or resource scarcity may display stronger CSR, ESG, philanthropy, or green innovation engagement (Choi *et al.*, 2023; Liu and Hooy, 2024; Tang *et al.*, 2024; Xu and Ma, 2022; Zhou *et al.*, 2024). These findings suggest that boards and investors should consider how CEO values and life experiences may shape stakeholder orientation and long-term sustainability choices.

Finally, the practical relevance of CEO early-life experiences depends on governance context. Since imprint effects are conditioned by ownership structure, board oversight, CEO discretion, institutional setting, and market competition, boards should not interpret CEO background characteristics in isolation (Du *et al.*, 2025; Li *et al.*, 2023a, b; Solano *et al.*, 2024). Strong governance may reduce harmful expressions of personal imprints while allowing beneficial expressions such as prudence, resilience, and stakeholder sensitivity to support long-term firm value.

7. Conclusion

This study systematically reviewed the literature on CEO early-life experiences and corporate outcomes using the Antecedents–Decisions–Outcomes (ADO) framework. Based on 45 peer-reviewed articles identified through a PRISMA-based review process, the review shows that CEOs' formative experiences, including war and conflict exposure, famine and poverty, natural disasters, family background, birth order, military experience, and institutional-transition imprints, shape corporate decisions and firm outcomes through multiple pathways. The evidence suggests two broad mechanisms as some early-life imprints strengthen caution, loss sensitivity, and conservative decision-making, while others increase empathy, stakeholder orientation, and long-term sustainability engagement. These effects are not deterministic; they depend on governance arrangements, ownership structure, CEO discretion, institutional context, and the decision domain being examined.

Like all systematic literature reviews, this study has several limitations. First, the review relies on the Web of Science as the core database, which improves indexing consistency but

may exclude relevant studies available in other databases. Second, the search was conducted in July 2025 and, therefore, studies indexed after the search date are not included and may be incorporated in future updates of this review. Third, the search strings were determined by the authors based on the conceptual scope of CEO early-life experiences, corporate decisions, and firm outcomes. Although this approach improves transparency and replicability, it may exclude studies that use different terminology for related constructs. Future research can address these limitations by updating the corpus, expanding database coverage, refining search terms, and developing more integrated empirical designs that connect formative antecedents, decision pathways, and firm-level outcomes across institutional contexts.

Data availability statement

Data are available from the corresponding author on reasonable request.

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