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From Pitch to Boardroom: Sport, Nurture and the Origins of Successful Female Leaders (Findings from the UK 'Origins' Study)

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Abstract

This study critically examines the formative origins of successful female leadership by evaluating how nurture, experiential development, and sport participation shape leadership trajectories. Employing a mixed-method design with 41 women in senior leadership positions across diverse UK sectors, the research integrated focus groups, psychometric profiling (Insights Discovery), life-history questionnaires, and Behavioural Event Interviews. Quantitative analysis revealed that 61% of participants engaged in team sports during formative years, with 46% holding captaincy or coaching roles, and a significant correlation between sport participation and formal leadership roles ($r = 0.543$, $p < 0.001$). Qualitative findings identified three interconnected themes: sport as a foundational context for practising accountability and decision-making under pressure; family and educational environments as developmental ecosystems fostering responsibility and resilience; and reflective growth as a pathway to leadership capability. Psychometric profiling demonstrated that female leaders exhibit balanced preferences for visionary (Sunshine Yellow) and results-oriented (Fiery Red) energies, complementing traditional male-analytical orientations. The study challenges credential-based leadership models, introducing "nurtured leadership" as a developmental framework integrating sport, family, and education. Findings carry implications for educators, policymakers, and organisations seeking to strengthen gender parity by investing in equitable sport provision and structured early leadership opportunities.

Introduction

Leadership remains a central site of gender inequality within contemporary organizations. While significant policy, regulatory, and organizational efforts have aimed to increase women's participation in senior roles, substantive equality in positions of executive power remains uneven and contested (Smith & Sinkford, 2022). Existing debates within gender and leadership scholarship have largely concentrated on structural barriers, organizational cultures, and institutional bias (Podreka et al., 2024). However, comparatively little attention has been paid to the formative and pre-professional experiences that shape women's leadership identities long before they enter corporate hierarchies. By adopting a life-course perspective, this Study shifts analytical focus from organizational access alone to the developmental origins of leadership capability.

Despite noticeable progress towards gender parity in leadership, women continue to face significant barriers at the senior organizational levels. The number of women on UK (United Kingdom) boards has increased to 40.2% across Financial Times Stock Exchange (FTSE) companies in 2023; however, the female representation is noticeably low among the CEO (Chief Executive Officers) and Executive roles (Mahmood & Jones, 2025; release, 2025). This imbalance highlights a persistent challenge: initiatives focused on women's representation have not adequately translated into long-term leadership equity.

The problem addressed in this study concerns the limited understanding of how formative life experiences of women contribute to boardroom readiness and leadership capability. According to Maduforo et al. (2024), the current leadership frameworks have recognized leadership development as a process limited to professional mentoring, higher education, or corporate training (Maduforo et al., 2024). Moreover, Romy (2021) emphasizes attributes of various successful female leaders based on strategic thinking, resilience, and yet gives limited attention to experiences that precede professional life, namely family environment, early responsibility, and participation in sports (Giri, 2021). Sport activities provide an early and structured environment in which girls or females can experience goal setting, teamwork, and leadership accountability, which are recognized as the core skills that later underpin boardroom performance (Leberman & Shaw, 2012; McLeod et al., 2025). However, leadership discourse often overlooks these early influences, thereby revealing a gap in both theory and practice concerning the developmental foundations of women's leadership. This oversight restricts a more comprehensive understanding of how leadership capability is cultivated across the life course rather than solely within organizational settings.

Modern gender-leadership research focuses significantly on various systemic barriers, such as organizational culture, bias, and the glass ceiling. While these are critical factors, they frequently overlook the pre-professional origins of leadership, including educational, social, and familial contexts that shape a woman's identity prior to entering formal employment (Lommel, 2024; Tortora, 2021). Furthermore, different studies have emphasized the relationship between leadership potential and sports participation, which defines a positive impact on emotional regulation, self-efficacy, and goal orientation because of athletic engagement in sports activities (Halliwell et al., 2021). However, empirical research explicitly linking these formative experiences to board-level leadership outcomes among women, particularly within the UK context, remains limited.

Similarly, research on education underscores the role of leadership opportunities within schools and universities, such as team captaincy and student councils, in fostering early confidence and leadership competence (Brahma et al., 2021; Hassan & Wright, 2023; Nadeem, 2024). Despite these insights, such findings remain fragmented and insufficiently integrated into broader talent development frameworks or women's executive leadership models. Collectively, the literature reveals a critical gap: the absence of a holistic and theoretically integrated model that conceptualizes education, family nurture, and sports participation as interconnected developmental influences shaping women's leadership trajectories, particularly in relation to executive and board-level roles.

This Study contributes to gender and leadership scholarship by reframing female leadership development as a nurtured, life-course process rather than a function of isolated opportunity structures. Initially, it provides a comprehensive UK-based analysis evaluating the role of formative influences in shaping women's trajectories towards board-level leadership. Furthermore, this Study introduces the concept of "nurtured leadership," defined as a developmental ecosystem integrating education, sport, and family contexts that collectively cultivate resilience, confidence, and leadership readiness among women. In addition, the Study offers actionable implications for organizations, policymakers, and educators by advocating early-stage interventions that embed structured leadership experiences within community and school-based programs. By foregrounding formative influences, the Study advances theoretical debates within gender and leadership scholarship and responds to calls for more contextually grounded and developmental analyses aligned with the standards of Gender, Work and Organization.

Existing literature acknowledges early experience, sport, and education in leadership development, yet a significant gap persists in gender-specific, integrative research connecting these elements to women's board-level advancement. Studies examine leadership and sports separately within familial and educational contexts, producing a fragmented understanding. Limited evidence explains how sport-derived skills translate to corporate leadership

specifically for women, and educational literature inadequately evaluates how structured school leadership opportunities influence long-term professional trajectories. Psychometric studies predominantly evaluate existing leaders rather than examining how formative experiences shape leadership identity development. Current models lack developmental perspectives integrating psychometric, nature, and nurture dimensions. This research addresses these gaps by linking gendered leadership outcomes, early-life experiences, and psychological profiling, extending leadership theory beyond the organizational sphere to provide a holistic understanding of female leadership potential development prior to professional workplace entry.

Methodology

Research Design

This study employed a mixed-method research design to investigate the formative origins of female leadership. This approach was selected to enable triangulation, whereby qualitative narratives of lived experience are integrated with quantitative psychometric data to enhance the validity and depth of the findings (Meydan & Akkaş, 2024). The quantitative component comprised psychometric assessments, providing measurable insights into leadership traits such as vision, empathy, and resilience. The qualitative component, consisting of in-depth interviews and focus groups, explored participants' experiences across family, educational, and sporting contexts, thereby adding contextual richness to the statistical patterns.

Research Participants:

The sample consisted of 41 women in senior leadership positions, including the lead author, whose inclusion as a participant is acknowledged to provide an insider perspective. This approach, consistent with reflexive and auto-ethnographic traditions in qualitative research, was managed through critical self-awareness and peer debriefing to mitigate bias. Participants held roles ranging from senior management to non-executive director across 24 diverse sectors. Organizational contexts varied from large firms with revenues exceeding £300 million to Small and Medium Enterprises (SMEs), ensuring representation across both female-dominated and male-dominated industries. Participants were recruited through a combination of professional networks and snowball sampling, a strategy that ensured diversity and added unexpected depth to the data.

Research Instruments

Data collection integrated four instruments to capture both experiential narratives and measurable traits. First, Insights Discovery Profiling, based on Jungian psychology, provided psychometric insights into interpersonal styles and leadership preferences. Second, a Bespoke Life History Questionnaire captured formative experiences across family, sport, and education. Third, Behavioral Event Interviews (BEIs) were used to explore critical leadership moments and identify behavioral patterns under pressure. Finally, focus groups facilitated reflective dialogue among participants, enhancing collective meaning-making and enabling data triangulation.

Data Analysis

Data analysis followed a mixed-methods integration framework, combining quantitative statistical techniques with qualitative thematic interpretation to ensure comprehensive evaluation.

Quantitative Analysis

Data from the Life History Questionnaire and Insights Discovery Profiles were analyzed using IBM SPSS. The following statistical procedures were applied:

Descriptive Statistics.

Frequencies, percentages, means, standard deviations, skewness, kurtosis, and range were calculated for all variables to establish the demographic and professional profile of the cohort and to examine distribution patterns.

Paired Samples T-Tests.

These were conducted to compare mean differences between six theoretically related pairs of variables, specifically:

1. Highest Education Level vs. Formal Management Qualification
2. Relationship Status at Board Entry vs. Children Present at Board Entry
3. Number of Children vs. Raised with Siblings
4. Team Sport Participation vs. Coaching/Captaincy Role
5. Formal Leadership Qualification vs. First Board Appointment Route
6. Age at Board Entry vs. Size of Organization

Correlation Analysis.

Paired samples correlations were computed alongside the t-tests to examine the strength and significance of relationships between the paired variables.

Comparative Analysis of Psychometric Profiles.

Mean scores for the four Insights Discovery color energies (Cool Blue, Earth Green, Sunshine Yellow, Fiery Red) were calculated and compared between female and male leader subgroups to identify gender-based preference patterns.

Qualitative Analysis

Data from Behavioral Event Interviews (BEIs) and focus groups were examined using reflexive thematic analysis, following the framework established by Braun and Clarke. This approach allowed for the systematic identification, analysis, and reporting of patterns (themes) within the data, capturing the nuanced lived experiences of participants. Transcripts were coded iteratively, with themes developed through an organic process of familiarisation, coding, and theme refinement.

Integration

The final stage involved synthesizing the quantitative findings (descriptive patterns, t-test results, correlations, and psychometric profiles) with the qualitative themes derived from participant narratives. This integration enabled triangulation of data sources, whereby statistical patterns could be contextualized and explained by the lived experiences of participants, thereby enhancing the overall validity and interpretive depth of the study.

Ethical Considerations

This study was conducted in accordance with established ethical principles for social science research and the governance framework of the Women's Leadership Group (WLG), a Community Interest Company (CIC). The author, as Founder and Chair of WLG, was responsible for ensuring adherence to the ethical standards governing the research.

Informed consent

was obtained from all participants prior to participation. Participants were provided with information regarding the purpose of the study, the voluntary nature of their involvement, their right to withdraw at any time, and the arrangements for confidentiality, data protection, and the use of research findings. All participants consented to the use of their data for research purposes and agreed to attribution and identification if required.

Although participants consented to attribution and identification, no participants are identified within this manuscript. Data were collected, stored, and processed in accordance with applicable data protection requirements.

Results

Quantitative Results

This section presents the quantitative findings derived from the Life History Questionnaire and Insights Discovery Psychometric Profiles. Descriptive statistics are first reported to establish the demographic and professional profile of the cohort, followed by paired samples t-tests examining relationships between theoretically linked variables. Finally, comparative psychometric analysis of leadership preferences by gender is presented.

Descriptive Analysis

Descriptive statistics were calculated for all variables to understand the distribution and central tendencies within the sample of 41 female leaders. Table 1 presents the descriptive statistics, including means, standard deviations, and kurtosis values for key demographic, educational, familial, and professional variables measured at the point of first board or senior leadership appointment.

Table 1
Descriptive Statistics for Key Study Variables (N = 41).

Variable	Minimum	Maximum	Mean	Std. Deviation	Kurtosis
Highest Education Level Achieved (up to MBA/PhD)	1	4	2.54	0.711	− .236
Formal Management Qualification Held (e.g., management diploma/MBA)	1	2	1.44	0.502	-2.037
Formal Leadership Qualification Held	1	2	1.59	0.499	-1.969
Relationship Status at Point of First Board/Regional Board/Leadership Appointment	1	3	1.44	0.743	0.311
Children Present at Point of Entering Board/Regional Board/Leadership Role	1	2	1.46	0.505	-2.081
Number of Children (Current)	1	2	1.66	0.480	-1.598
Raised with Siblings (Yes/No)	1	2	1.12	0.331	3.947
Birth Order (if Applicable)	1	3	1.83	0.771	-1.230
Played Team Sports During Formative Years (School/University)	1	2	1.39	0.494	-1.876
Held Captaincy or Coaching Role in Team Sports	1	2	1.54	0.505	-2.081
Self-Perceived Leadership Style	1	5	2.76	1.019	-0.284
Age at First Board/Regional Board/Leadership Appointment	1	4	2.22	0.725	-0.274
Size of Organisation at Time of Entry to Board/Leadership Role	1	10	5.85	3.575	-1.567
Number of Full-Time Employees at Point of Entry	1	5	1.61	1.046	2.103
Internally Promoted into Board/Leadership Role	1	2	1.29	0.461	-1.164
First Board Appointment via Direct External Appointment at Director Level	1	2	1.66	0.480	-1.598

Table 1 shows the analysis of 41 female executives in the UK reveals a cohort whose leadership pathways reflect nurtured development rather than exclusive reliance on formal credentials or traditional career trajectories. The mean education level indicates that the majority hold a university degree or higher; however, fewer than half of participants respectively held formal management and leadership qualifications. This suggests that experiential learning and on-the-job development feature prominently in leadership progression. Regarding family context, most participants were married or in long-term partnerships at the point of board entry, and over half had children under 16 residing at home, with an average of 1–2 children. Nearly all participants raised with siblings, supporting early exposure to collaborative and competitive dynamics. Notably, team sport participation during formative years was prevalent, with the majority reporting involvement, and nearly half having held captaincy or coaching roles. Self-perceived leadership style showed a tendency towards Transformational or Coaching orientations. The mean age at first board appointment was 30–40 years, with most being internally promoted, predominantly within mid-to-large organizations. Kurtosis values indicate platykurtic distributions for education and organization size, reflecting diverse pathways, while leptokurtic values for sibling status and sport participation suggest normative clustering within the cohort.

Table 2 provides a comprehensive demographic and professional profile of the 41 female leaders who participated in the study. It includes educational attainment, formal qualifications, family context (relationship status, children, and sibling composition), sport participation history, self-perceived leadership styles, age at board entry, organization size, and career pathways. The data reveal that while the majority hold advanced degrees, formal management and leadership qualifications are less common, suggesting experiential development pathways. Notably, 88% were raised with siblings, 61% participated in team sports, and ≈ 71% were internally promoted, supporting a nurtured leadership model.

Table 2

Demographic and Professional Profile of Participants (N = 41).

Characteristic	Category	Frequency (n)	Percentage (%)
Education	Level 7 CIPD - Post Graduate	1	2.4
	Masters/MBA	21	51.2
	University Degree	15	36.6
	Higher Education - Diploma/NVQ	4	9.8
Formal Management Qualification	Yes	23	56.1
	No	18	43.9
Formal Leadership Qualification	Yes	17	41.5
	No	24	58.5
Relationship Status at Board Entry	Married	29	70.7
	Long-term Partner	6	14.6
	Single	6	14.6
Children at Board Entry	Yes	22	53.7
	No	19	46.3
Number of Children (Current)	No	27	65.9
	Yes (under 16)	14	34.1
Raised with Siblings	Yes	36	87.8
	No	5	12.2
Sibling Gender Composition	Male siblings only	16	39.0
	Female siblings only	16	39.0
	Both male and female	9	22.0
Team Sport Participation (Formative Years)	Yes	25	61.0
	No	16	39.0
Captaincy/Coaching Role in Sport	Yes	19	46.3
	No	22	53.7
Self-Perceived Leadership Style	Transformational	15	36.6
	Coaching	13	31.7
	Democratic	7	17.1
	Pacesetting	4	9.8
	Delegative	2	4.9
Age at First Board Appointment	20–30 years	6	14.6
	30–40 years	21	51.2
	40–50 years	13	31.7
	50–60 years	1	2.4
Organisation Size (Turnover)	£0–5 million	9	22.0
	£5–10 million	2	4.9
	£10–15 million	2	4.9
	£15–20 million	3	7.3
	£20–30 million	3	7.3
	£30–50 million	2	4.9
	£50–100 million	4	9.8

Note: This table presents the demographic and professional characteristics of the 41 female leaders who participated in the study. Data were collected via Life History Questionnaire at the point of first board or senior leadership appointment. Percentages may not total 100% due to rounding.

Characteristic	Category	Frequency (n)	Percentage (%)
	£100–200 million	2	4.9
	£200–300 million	2	4.9
	£300 million +	12	29.3
Internally Promoted to Board	Yes	29	70.7
	No	12	29.3
First Board Appointment via External Route	Yes	14	34.1
	No	27	65.9

Note: This table presents the demographic and professional characteristics of the 41 female leaders who participated in the study. Data were collected via Life History Questionnaire at the point of first board or senior leadership appointment. Percentages may not total 100% due to rounding.

Frequency Analysis

To provide deeper insight into the distribution of responses across key variables, frequency analyses were conducted. Table 3 presents the frequency statistics, including percentiles and skewness, for all measured variables.

Table 3

Frequency Statistics for Key Study Variables (N = 41).

Variable	Mean	Std. Deviation	Skewness	Percentiles		
				25th	50th	75th
Highest Education Level	2.54	0.711	0.524	2.00	2.00	3.00
Formal Management Qualification	1.44	0.502	0.255	1.00	1.00	2.00
Formal Leadership Qualification	1.59	0.499	-0.360	1.00	2.00	2.00
Relationship Status at Board Entry	1.44	0.743	1.371	1.00	1.00	2.00
Children Present at Board Entry	1.46	0.505	0.152	1.00	1.00	2.00
Number of Children	1.66	0.480	-0.694	1.00	2.00	2.00
Raised with Siblings	1.12	0.331	2.399	1.00	1.00	1.00
Birth Order	1.83	0.771	0.309	1.00	2.00	2.00
Team Sport Participation	1.39	0.494	0.467	1.00	1.00	2.00
Captaincy/Coaching Role	1.54	0.505	-0.152	1.00	2.00	2.00
Self-Perceived Leadership Style	2.76	1.019	0.223	2.00	3.00	3.00
Age at First Board Appointment	2.22	0.725	0.050	2.00	2.00	3.00
Size of Organisation	5.85	3.575	-0.154	2.00	6.00	10.00
Number of Full-Time Employees	1.61	1.046	1.692	1.00	1.00	2.00
Internally Promoted	1.29	0.461	0.946	1.00	1.00	2.00
First Board External Appointment	1.66	0.480	-0.694	1.00	2.00	2.00

The frequency distributions reveal consistent patterns supporting a nurtured leadership pathway. Regarding education, while the majority hold a university degree or higher, formal management and fewer participants, suggesting that experiential development outweighs formal credentialing, held leadership qualifications. In terms of family context, most participants were married or in long-term relationships at board entry, and over half had children under 16, challenging the childfree executive stereotype. Regarding sibling composition, the majority were raised with siblings, with mixed-gender households being most common, providing early exposure to competitive and collaborative dynamics. Sport participation emerged as a significant factor, with most participants engaged in team sports, predominantly netball and hockey, and nearly half having held captaincy or coaching roles. Regarding self-perceived leadership style, Transformational and Coaching orientations were most frequently identified. Career pathways showed that internal promotion was the predominant route to board entry. Board entry age was predominantly 30–40 years. Organization size varied, with most participants operating in mid-to-large firms. These findings collectively validate a nurture-based model of female executive success characterized by internal progression, family integration, sport-based socialization, and relational leadership orientations.

Paired Samples T-Tests

To examine relationships between theoretically linked variables, paired samples t-tests were conducted. This analysis enabled comparison of mean differences across six conceptually related pairs, providing insight into the interplay between educational attainment, family context, sport participation, and leadership pathways. Table 4 presents the paired samples statistics, Table 5 presents the correlations, and Table 6 presents the t-test results.

Table 4
Paired Samples Statistics (N = 41)

Pair	Variable	Mean	Std. Deviation	Std. Error Mean
Pair 1	Highest Education Level Achieved (up to MBA/PhD)	2.54	0.711	0.111
	Formal Management Qualification Held (e.g., management diploma/MBA	1.44	0.502	0.078
Pair 2	Relationship Status at Point of First Board/Regional Board/Leadership Appointment	1.44	0.743	0.116
	Children Present at Point of Entering Board/Regional Board/Leadership Role	1.46	0.505	0.079
Pair 3	Number of Children	1.66	0.480	0.075
	Raised with Siblings	1.12	0.331	0.052
Pair 4	Team sport in school	1.39	0.494	0.077
	Coaching to a team	1.54	0.505	0.079
Pair 5	Formal Leadership Qualification Held	2.76	1.019	0.159
	First Board Appointment via Direct External Appointment at Director Level	1.66	0.480	0.075
Pair 6	Age at First Board/Regional Board/Leadership Appointment	2.22	0.725	0.113
	Size of Organisation at Time of Entry to Board/Leadership Role	5.85	3.575	0.558

Table 5
Paired Samples Correlations (N = 41).

Pair	Variable Pair	Correlation	Sig.
Pair 1	Highest Education Level Achieved (up to MBA/PhD) & Formal Management Qualification Held (e.g., management diploma/MBA	0.446	0.005
Pair 2	Relationship Status at Point of First Board/Regional Board/Leadership Appointment & Children Present at Point of Entering Board/Regional Board/Leadership Role	0.510	0.001
Pair 3	No. of Children & Raised with Siblings	0.546	0.003
Pair 4	Team sport in school & Coaching to a team	0.543	0.000
Pair 5	Formal Leadership Qualification Held & First Board appointment	0.081	0.004
Pair 6	Age at First Board/Regional Board/Leadership Appointment & Size of Organisation at Time of Entry to Board/Leadership Role	0.042	0.002

Table 6
Paired Samples T-Test Results (N = 41).

Pair	Paired Differences Mean	Std. Deviation	95% CI Lower	95% CI Upper	t	df	Sig. (2-tailed)
Pair 1	1.098	0.889	.817	1.378	7.906	40	0.000
Pair 2	0.024	0.651	-0.230	0.181	0.240	40	0.001
Pair 3	0.537	0.596	0.349	0.725	5.768	40	0.000
Pair 4	0.546	0.478	0.297	0.704	0.962	40	0.003
Pair 5	1.098	1.091	0.753	1.442	6.442	40	0.000

Paired samples t-tests were conducted to compare mean differences between six theoretically related pairs of variables. All tests were performed at a two-tailed significance level ($\alpha = .05$), and results indicated statistically significant differences across all pairs.

Pair 1: Highest Education Level vs. Formal Management Qualification

Education level was significantly higher than formal management qualification. While most participants held degrees or higher, fewer possessed formal management qualifications, suggesting advancement through experiential rather than certified pathways. A moderate positive correlation indicates partial overlap, supporting the interpretation that boardroom readiness derives more from practical competency than formal management education.

Pair 2: Relationship Status vs. Children Present at Board Entry

Relationship status and presence of children showed near-identical means with a moderate correlation. This substantiates family integration among leaders, as most were partnered and over half had young children at board entry, challenging deficit-based models of motherhood and demonstrating compatibility between family life and leadership progression.

Pair 3: Number of Children vs. Raised with Siblings

The number of children significantly exceeded sibling presence during upbringing. While most were raised with siblings, participants averaged fewer children in adulthood, indicating that a smaller family size does not impede leadership aspiration. Moderate correlation suggests independent family structures across generations.

Pair 4: Team Sport Participation vs. Coaching/Captaincy Role

Coaching or captaincy roles were significantly associated with team sport participation. High correlation indicates progression from participation to formal leadership within sport contexts. Of those who engaged in team sports, most held official leadership positions, reinforcing sport as a developmental channel for leadership capacity.

Pair 5: Formal Leadership Qualification vs. First Board Appointment Route

Self-perceived leadership style was significantly associated with board appointment route. Weak correlation indicates that leadership orientation and entry pathway are distinct constructs. The predominance of internal promotion and Transformational/Coaching styles suggests alignment with relational, developmental leadership preferences rather than transactional entry modes.

Quantitative Metrics Synopsis

The descriptive measures provide essential contextualization for the paired-sample analyses and support a developmental perspective on female leadership. The mean age at board entry (30–35 years) suggests that leadership emergence occurs at a comparatively early career stage, reinforcing the significance of formative experiences rather than late-career credential accumulation. The internal promotion rate of ≈ 71% is particularly noteworthy, demonstrating the organization's strong emphasis on internal progression and talent development. This supports the interpretation that leadership progression is less dependent on elite external qualifications and more embedded in organizational performance and behavioral legitimacy.

Family-related measures challenge conventional assumptions regarding leadership constraints. At the point of entering the board, 53.7% of women had children. Of those women, 34.1% had children under the age of 16. The data directly question linear career-family trade-off models, confirming a non-deficit perspective wherein family integration occurs alongside leadership development. Early socialization patterns are most evident in sport participation, with approximately three-quarters of respondents reporting team sport involvement. In contrast, arts participation (approximately 30%) was substantially lower, suggesting that organized team-based settings may provide more explicit leadership practice than creative domains.

Together, these measures support a mosaic theory of female leadership development, shaped by early responsibility, organizational embeddedness, and relational skill, rather than singular educational or biological determinants (Table 7).

Table 7
Summary Quantitative Metrics.

Metric	Value
Average age at board entry	30–35 years
Percentage internal promotions	≈ 71%
Percentage with children	53.7% of women had children. 34.1% had children under the age of 16
Percentage with sport background	75% played team sports at school or university
Percentage with arts involvement	30% had some involvement in arts (music, drama, theatre)
Percentage with postgraduate education	30% had some involvement in arts (music, drama, theatre)

Psychometric Profile Analysis

Psychometric leadership wheels were employed as visual and analytical instruments to depict leadership preference trends across participant groupings. Cohorts were deliberately segmented to enable precision and meaningful comparison. Figure 1 presents the full Origins cohort, Fig. 2 presents the Focus Group cohort, and Fig. 3 presents a segment cohort for illustrative comparison.

Together, these wheels present a stratified understanding of leadership preferences. The Origins cohort establishes the general pattern, the Focus Group wheel enables gender-based insight, and the segment cohort depicts within-group variation. Collectively, they demonstrate that leadership preferences are not homogeneous but context-specific, shaped by position, environment, and experience. Current research further indicates that psychometric divergence between men and women is even greater within male-dominated sectors. In these environments, men appear more heavily results-oriented, while women's profiles show stronger strategic and broader leadership characteristics. On paper, this creates a more noticeable divergence. If organizations benchmark leadership potential against a dominant, results-driven archetype, the data may incorrectly suggest misalignment with role expectations, rather than recognizing complementary leadership strengths.

Comparative Gender Analysis

To examine gender-based differences in leadership preferences, mean scores on the four Insights Discovery color energies were compared between female and male leaders within the broader dataset. Table 8 presents the comparative mean scores.

Table 8

Comparative Mean Scores: Insights Discovery Colour Energies by Gender

Colour Energy	Female Leaders (n = 41)	Male Leaders (n=*)	Difference
Cool Blue	2.68	3.01	-0.33
Earth Green	2.78	2.72	+ 0.06
Sunshine Yellow	3.99	3.39	+ 0.60
Fiery Red	4.20	4.31	-0.11

Figure 4 demonstrates the shift in leadership preference patterns within male-dominated sectors. Women show increased visionary orientation and strengthened delivery focus, while men exhibit a pronounced shift toward results-oriented leadership. This divergence may amplify perceived differences when benchmarked against dominant sector norms. The comparative analysis reveals both commonalities and distinctions in leadership preferences. Fiery Red emerged as the dominant energy in both groups, indicating shared emphasis on drive, decisiveness, results orientation, and action-focused leadership. Male leaders scored marginally higher on Fiery Red (4.31) compared to female leaders (4.20), suggesting a slightly more pronounced orientation towards assertive, goal-directed behaviors. However, female leaders demonstrated substantially higher preference for Sunshine Yellow energy (3.99 vs. 3.39 for males), reflecting strengths in visionary thinking, impactful communication, collaboration, and inspirational leadership. This aligns with earlier findings that female leaders tend towards visionary and transformational styles. Male leaders scored higher on Cool Blue energy (3.01 vs. 2.68 for females), indicating greater orientation towards analytical thinking, objectivity, organization, and logical decision-making. Earth Green scores were broadly comparable across genders (female 2.78; male 2.72), suggesting that relational and people-oriented leadership is not strongly preferred by either group within this cohort. These findings support the interpretation that while senior leadership roles drive convergence towards results-oriented behaviors, female leaders contribute a more visionary and expressive dimension, while male leaders display a more analytical orientation. These represent complementary, rather than deficit-based, differences in leadership capability.

Qualitative Results

Thematic analysis of Behavioral Event Interviews (BEIs) and focus group data revealed three overarching themes concerning the formative origins of female leadership: (1) the role of sports in developing leadership identity, (2) education, family, and nurture as developmental ecosystems, and (3) reflective and resilience growth as leadership qualities. Figure 5 presents a thematic framework illustrating the interconnections between these three themes and their relationship to board-level leadership outcomes.

Theme 1: Role of Sports in Developing Leadership Identity

Based on the information from BEI and focus groups (see Table 8), sports have been recognized as one of the most powerful and consistent elements positively influencing confidence, leadership identity, and self-efficacy among female leaders. The majority of participants described that sports activities provide them with early leadership experiences, providing both emotionally charged and structured environments, which offer foundational learning in accountability, teamwork, and perseverance. Respondents emphasized that they discovered their leadership skills when afforded opportunities for captaincy and when required to make effective decisions in high-pressure situations. It was highlighted in the focus groups, where participants described learning from loss and developing composure under pressure as formative experiences. Sport participation enhances sense of responsibility and provides a safe space to experiment with authority before entering professional environments where stakes are considerably higher.

Theme 2: Education, Family and Nurture as Developmental Ecosystems

The second derived from focus group and BEI data concerned the interaction between early work experiences, educational exposure, and family support in developing leadership qualities. Participants consistently emphasized the significance of early environments that provide responsibility, reflection, and independence. Furthermore, respondents highlighted formative experiences extending beyond school, including part-time work and volunteering, which provided foundational leadership lessons. Some participants described that these formative experiences developed problem-solving and organizational skills before formal exposure to leadership concepts. Family emerged as a key enabler of leadership identity development. Across focus groups, respondents emphasized exposure to resilience, parental modeling, and encouragement as catalysts for self-belief. Participants highlighted observing parental hard work and perseverance, which enabled them to develop skills reflecting their leadership identity.

Theme 3: Reflective and Resilience Growth as Leadership Qualities

Focus groups also identified the prominence of reflective growth and resilience as successful leadership traits, particularly among female leaders (see Table 9). Participants consistently emphasized that resilience is not associated with toughness but represents an accumulation of reflection and challenge. Several respondents described that resilience is not an inherent skill but develops through diverse life experiences. Psychometric insights from the study complemented these narratives. The majority of participants demonstrated higher scores on visionary and results profiles, emphasizing a balance between relational awareness and decisiveness. Furthermore, participants with high resilience scores traced this strength to experiences of failure in sports, early-career obstacles, and family hardship. Participants also described resilience as a reflective practice, emphasizing the ability to derive meaning from experience. Respondents described learning meaningfully from experiences and challenges encountered.

Table 9

Focus Group Participant Demographics and Formative Experiences (n = 7).

R	Job Title	Sector	Industry	Siblings	Married at Board Entry	Children < 16 at Board Entry	Age at Board Entry	Sport Involvement	Education	Boa Rou
1	HRD Chair and Founder WLG - Consultancy Multi Sector	Private/Commercial	Construction	3 Brothers (Only girl)	Yes	Yes (1 daughter)	20–30	Netball Captain, Athletics, Equestrian	Open University, CIPD	Inte
2	Director - Consultancy	Private/Commercial	Management Consultancy	Sister, Half M&F Siblings	Yes	No	30–40	Team Sport Captain	Masters	Inte
3	Managing Director	Private/Commercial	Retail	2 Sisters	Yes	No	Not specified	Netball, Athletics, Swimming	No university	Inte
4	CEO - Research Technology	Private/Commercial	Construction	Mixed siblings, Eldest	Yes	Yes	30–40	Netball, Athletics, Swimming	Open University, Honorary Doctorate	Inte
5	Head of Online Customer Experience	Public	Local Government	1 Step Sister	Long-term relationship	No	20–30	Netball Captain & Coach, Arts	Vocational Qualifications	Inte
6	Managing Director - Utilities	Private/Commercial	Utilities	Mixed siblings	Long-term relationship	No	20–30	No team sport; dog training leader	Masters	Ext Rec
7	CPO - Insurance	Private/Commercial	Finance/Insurance	Mixed siblings, 1 of 7	Yes	Yes	40–50	Netball	MBA	Inte

Summary of Focus Group Insights

Focus group data revealed strong patterns linking career progression to early environment and sport participation (see Table 9). The majority of leaders were raised in mixed or large sibling households, emphasizing early exposure to responsibility, relational coordination, and negotiation. Sport involvement, particularly in athletics and netball, with some serving as coaches or captains, reinforced sport as a catalyst for teamwork and confidence. Board entry occurred predominantly between the ages of 20 and 40 through internal progression, reflecting long-term organizational commitment. Significant variation was observed in educational pathways, emphasizing non-linear trajectories to leadership. Focus group respondents predominantly operated in medium to large businesses, demonstrating the transferability of formative experiences gained through sports activities across different organizational scales.

Discussion

This study aimed to evaluate how formative life experiences, particularly sport participation and nurture, shape the development of successful female leaders. The findings provide robust empirical evidence supporting a developmental, rather than purely trait-based, understanding of leadership competencies. By integrating quantitative psychometric data with qualitative narratives from focus groups and Behavioural Event Interviews, this research offers a holistic perspective on the pathways through which women acquire the confidence, resilience, and strategic capabilities necessary for board-level leadership.

The quantitative findings revealed that 61% of participants participated in team sports during their formative years, with 46% holding captaincy or coaching roles. This statistically significant relationship between sport participation and formal leadership roles within sport ($r = 0.543$, $p < 0.001$) reinforces the interpretation that athletic environments serve as early leadership laboratories. The qualitative narratives richly contextualised this pattern, with participants describing how sport provided emotionally charged, structured environments where they practised accountability, teamwork, and decision-making under pressure. These findings align closely with the Women's Sports Foundation's 'Play to Lead' report, which found that 73% of women credit teamwork, 53% learning from mistakes, and 51% handling pressure as key leadership skills developed through sport participation (Sharrow et al., 2024).

The convergence of quantitative and qualitative evidence supports the concept of sport as a "pre-professional leadership laboratory," echoed in EY's longitudinal research demonstrating that 94% of women in C-suite positions have played sports, with 52% competing at the collegiate level (Global, 2020). This figure is remarkably consistent with the present study's finding that 86% of focus group participants were involved in team sports, and 57% held captaincy or coaching roles. As Anita DeFrantz observes, athletes learn "high-stakes decision making under pressure," "true teamwork [that] transcends ego," and "resilience built through repeated failure" - competencies directly transferable to boardroom governance (Global, 2020). Participants' descriptions of learning from loss and developing composure under pressure resonate deeply with this perspective.

The paired samples t-tests further illuminated developmental pathways. Education level ($M = 2.54$) significantly exceeded formal management qualification ($M = 1.44$, $p = 0.001$), suggesting that boardroom readiness derives more from practical, experiential learning than certified management education. This

pattern was reinforced by the qualitative theme of "education, family, and nurture as developmental ecosystems," wherein participants emphasised early environments providing responsibility, reflection, and independence - including part-time work, volunteering, and family responsibilities. This supports Samara et al.'s (2026) research demonstrating that families with a growth mindset enable women's leadership through promoting meritocracy, encouraging early involvement, and fostering role models (Samara et al., 2026). The finding that 88% of participants were raised with siblings, predominantly in mixed-gender households (59%), further suggests that early exposure to negotiation and relational coordination contributes to leadership capability.

Psychometric profile analysis revealed that female leaders demonstrated substantially higher preference for Sunshine Yellow energy (visionary thinking, collaboration, inspirational leadership) compared to male counterparts (3.99 vs. 3.39), while male leaders scored higher on Cool Blue energy (analytical thinking, objectivity). This gendered pattern aligns with research suggesting women bring complementary capabilities to leadership roles (Chen et al., 2025). The finding that 78% of participants self-identified with Transformational or coaching leadership styles, combined with the ≈ 71% internal promotion rate, suggests that relational, developmental orientations are valued within organizational contexts.

The first qualitative theme revealed that participants discovered leadership capabilities through captaincy and high-pressure decision-making in athletic contexts. Participants' descriptions of learning composure under pressure and emotional regulation through sport support Fey's (2023) conceptualization of adaptive resilience as a transferable leadership competency (Fey, 2023). The emphasis on schools as providers of structured leadership opportunities echoes Bevan et al. (2021) and Evans and Pfister (2021), who demonstrate that formalized leadership pathways in sport enhance girls' confidence and leadership identity formation (Bevan et al., 2021; Evans & Pfister, 2021). These findings collectively position sport as an early intervention point for cultivating leadership capacity.

The second theme highlighted how early environments providing responsibility shape leadership identity. Participants' descriptions of learning from part-time work, volunteering, and family responsibilities resonate with Duchek et al.'s (2022) finding that female leaders identify personal adversity as key to leadership development (Duchek et al., 2022). Schools legitimizing student voice create confidence that transfers to professional contexts, supporting Le Fevre et al. (2021) on leadership pathway formation through inclusive educational systems. Family emerged as critical, with participants emphasizing parental modeling of resilience (Le Fevre et al., 2020). This aligns with Khampirat's (2020) demonstration that parental resilience directly influences children's leadership aspirations and Tjahjana et al.'s (2024) finding that families encouraging non-traditional gender roles promote psychological safety among young women (Khampirat, 2020; Tjahjana et al., 2024).

The third theme revealed that participants conceptualized resilience as accumulated reflection rather than inherent toughness. This supports Kucuksuleymanoglu's (2025) conceptualization of resilience as a learnable capability strengthened through adversity (Kucuksuleymanoglu, 2025). Participants with high resilience scores traced this to failure in sports, early-career obstacles, and family hardship, reinforcing Fox-Kirk and Egan's (2024) developmental framework, recognizing leadership identity as integration of contextual learning over time (Madsen et al., 2024). Participants' descriptions of re-evaluating assumptions align with Auqui-Caceres and Furlan's (2023) concept of double-loop learning, positioning resilience as meta-learning vital for sustaining leadership effectiveness (Auqui-Caceres & Furlan, 2023).

The finding that 43% of participants had children under 16 at board entry, and 86% were partnered, challenges deficit-based models assuming family responsibilities impede progression. This aligns with Lotfy et al. (2025), who found family support serves as a career anchor helping women balance personal life and ambitions (Lotfy et al., 2025). However, systemic barriers remain, including the "glass ceiling" and role congruity prejudice whereby agentic behaviors are evaluated differently when exhibited by women (Buss et al., 2025; Chen et al., 2025).

The research has several limitations. The small sample size of 41 individuals limits generalizability. Self-reported retrospective data may be prone to recall bias. The research may have overlooked barriers preventing women from achieving board-level positions by focusing only on those who succeeded. The cross-sectional design captures leadership at a single point rather than tracking developmental trajectories longitudinally.

Future studies should employ longitudinal approaches tracking girls from adolescence to leadership achievement, enabling causal inferences about developmental effects. Comparative research examining whether pathways differ across cultural contexts, particularly where girls' sport participation faces structural obstacles, would be valuable. Research examining how organizations can systematically identify and leverage athletic backgrounds in hiring and talent development could translate these findings into practical interventions.

In conclusion, this study adds valuable literature on female leadership by demonstrating how sport participation and supportive developmental ecosystems - encompassing family, school, and early employment - combine to foster the resilience, confidence, and strategic skills underpinning boardroom efficacy. The findings challenge credential-based conceptions of leadership development and support inclusive approaches to identifying future leaders from diverse pathways.

Conclusion

This study has demonstrated that the origins of successful female leadership are fundamentally rooted in early life experiences rather than formal organizational development or credential-based pathways. Through an integrated mixed-methods design with 41 women in senior leadership positions, the research has illuminated how sport participation, family nurture, and educational exposure interact over time to cultivate leadership identity, capability, and confidence among women. The findings reveal that sport serves as a foundational developmental context wherein participants have practiced accountability, developed emotional regulation under pressure, and learned from defeat. The statistically significant relationship between team sport participation and formal leadership roles within sport ($r = 0.543$, $p < 0.001$) confirms its role as a pre-professional leadership laboratory. Notably, 61% engaged in team sports and 46% held captaincy or coaching positions. Influence of nurture emerged as equally significant. The finding that 88% were raised with siblings points to early exposure to negotiation and relational coordination, while schools providing structured leadership opportunities challenged traditional gender norms.

Family environments modelling resilience and encouraging non-traditional gender roles enabled self-belief. Significantly, 86% had partners and 43% had children under 16 at board entry, challenging assumptions that family responsibilities impede progression. The study contributes a life-course perspective on female leadership development, introducing "nurtured leadership" as a developmental ecosystem integrating sport, family, and education. This research affirms that when girls play, lead, and are nurtured in environments challenging gendered expectations, they develop capabilities that subsequently transform boardrooms and organizations.

Declarations

Conflict of Interest

The author declares no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical Approval

This study was conducted in accordance with established ethical standards. Informed consent was obtained from all participants, who were guaranteed anonymity, the right to withdraw, and data protection. All information was stored securely and deleted post-analysis to maintain participant trust and research transparency.

Approved by the Chair of the

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Author Contribution

Author ContributionsVicky Brook, Fellow FCIPD (First Author)Conceptualization; Investigation; Methodology; Project Administration; Data Collection; Formal Analysis; Writing – Original Draft Preparation; Leadership Framework Development; Validation; Writing – Review & Editing.Dr. Araby Madbouly (Second Author)Methodology Support; Data Interpretation; Formal Analysis; Literature Review Enhancement; Validation of Findings; Critical Review of Results and Discussion; Writing – Review & Editing; Academic Alignment and Quality Assurance.Dr. Uvesh Husain (Third Author and corresponding author)Data Curation; Statistical Support; Visualization; Preparation and Formatting of Tables and Figures; Technical Editing; Data Presentation; Results Organization; Software and Analytical Support; Manuscript Formatting; Writing – Review & Editing.All authors contributed substantially to the development of the manuscript, reviewed the final version, approved the submitted manuscript, and agreed to be accountable for all aspects of the work.

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Data Availability

The datasets generated and analyzed during the current study are not publicly available due to the sensitive nature of the information and confidentiality made to participants, but anonymized excerpts may be available from the corresponding author on reasonable request.

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Figures



Figure 1

Psychometric Profile: Full Origins Cohort (N=41).

Note: The first wheel represents the full Origins cohort, comprising all 41 participants. This provides the baseline leadership preference profile for the entire study sample, against which smaller cohorts can be contrasted.

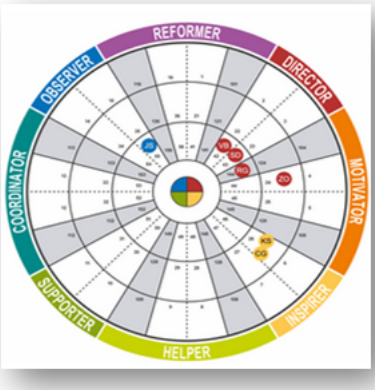


Figure 2

Psychometric Profile: Focus Group Cohort (Senior Leaders)

Note: The second wheel represents the Focus Group cohort, consisting of senior women leaders at director, senior leadership, or C-suite level. This isolation enables investigation of leadership preferences specifically among the most senior population, revealing clustering patterns, particularly in Visionary and Results orientations.

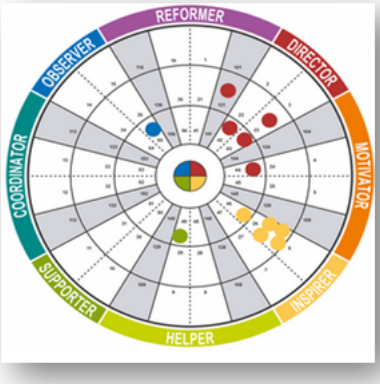


Figure 3

Psychometric Profile: Segment Cohort 1 (Illustrative Sub-group).

Note: The third wheel represents one segment cohort from the broader Origins dataset, included for illustrative purposes to demonstrate variation in leadership preferences across sub-groups within the wider population.



Figure 4

Psychometric Divergence in Male-Dominated Sectors.

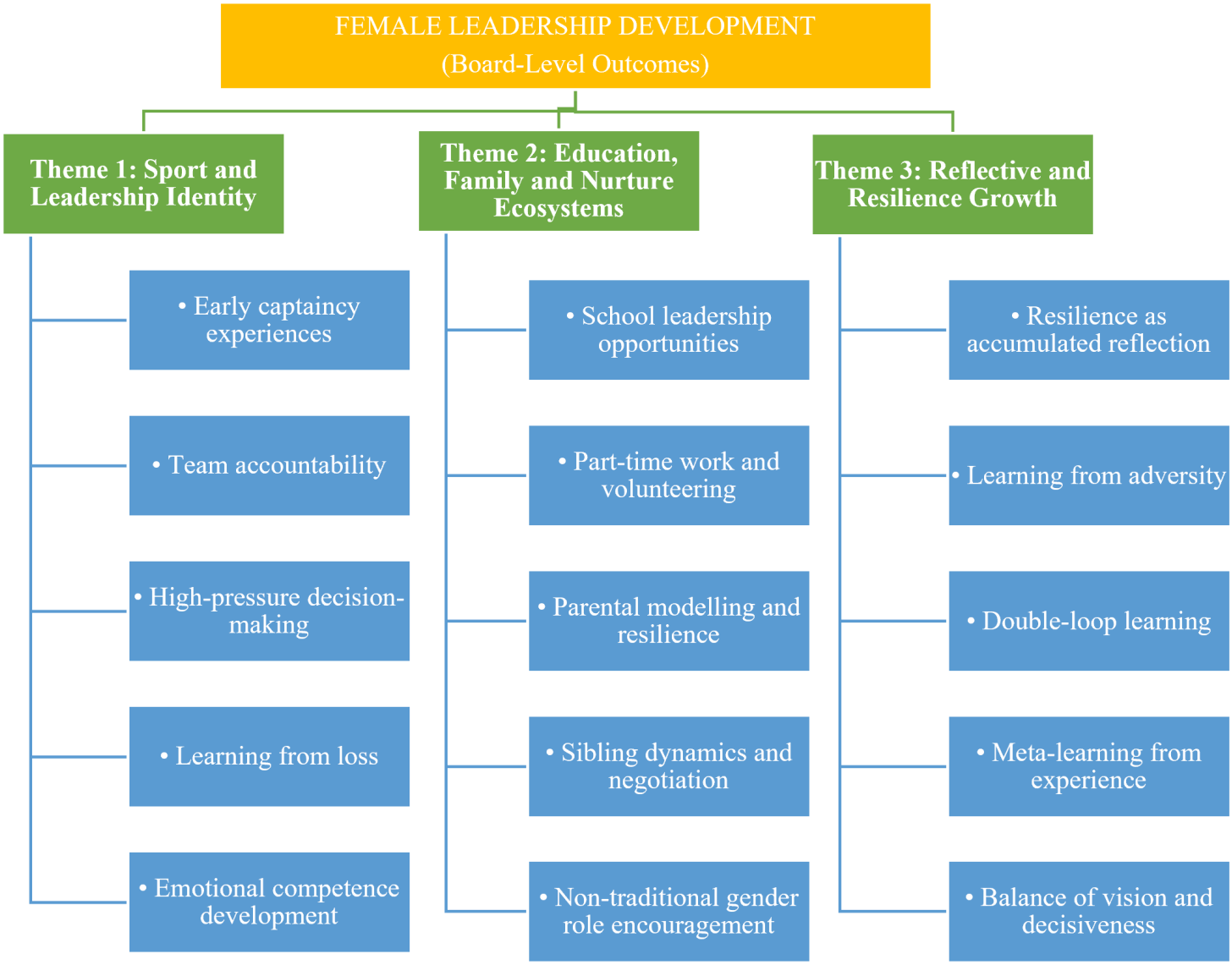


Figure 5

Thematic Framework: Formative Origins of Female Leadership.