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The Evolving Role of Emotional Intelligence and Soft Skills in 21st Century Leadership Development

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Abstract
Emotional intelligence (EI) has gained increasing attention as a predictor of leadership effectiveness, yet empirical work that isolates the relative contributions of individual EI competencies across management tiers remains sparse, particularly in the Indian information-technology sector. We surveyed 340 professionals drawn from 12 IT and management firms in India, combining a 48-item EI psychometric battery with 360-degree leadership-effectiveness ratings and 42 semi-structured interviews. Empathy emerged as the strongest single predictor of leadership effectiveness ($\beta = 0.34$, $p < 0.001$), followed by self-regulation ($\beta = 0.29$, $p < 0.001$). Senior managers scored 0.8 standard deviations higher on self-regulation than junior managers (Cohen's $d = 0.81$, 95 % CI [0.58, 1.04]) and 0.3 standard deviations higher on empathy ($d = 0.32$, 95 % CI [0.10, 0.54]). A supplementary AI-based assessment module—integrating natural-language processing of open-ended responses with facial-emotion recognition during simulated feedback sessions—correlated at $r = 0.71$ with the traditional psychometric composite. These findings suggest that targeted EI training, with particular emphasis on empathy and self-regulation, may yield measurable gains in leadership quality, and that AI-assisted EI measurement warrants further validation as a scalable complement to conventional instruments [1]–[10].

Keywords: *emotional intelligence, leadership development, soft skills, 360-degree feedback, mixed methods, AI-based assessment, Indian IT sector*

I. Introduction

Organisations in India's IT sector face a specific leadership problem: technically skilled employees move into management roles without formal preparation in interpersonal competence, and their teams report lower satisfaction and higher turnover within the first 18 months of the transition [11]–[15]. The deficit is not knowledge of processes or tools; it is the capacity to read a room, regulate one's own frustration during a product crisis, and sustain trust when deadlines compress. That capacity falls under what the literature calls emotional intelligence (EI) [16]–[20].

Daniel Goleman's 1995 popularisation of EI drew on earlier ability models by Salovey and Mayer and proposed four clusters—self-awareness, self-regulation, empathy, and social skill—with motivation sometimes treated as a fifth [21]–[25]. Since then, three broad measurement traditions have competed: the ability-based MSCEIT, the self-report Bar-On EQ-i, and the mixed-model Emotional Competence Inventory (ECI). Each has trade-offs in reliability, cultural portability, and resistance to impression management [26]–[32]. In the Indian context, the ECI has shown adequate internal consistency (Cronbach's $\alpha = 0.84$–0.91 across subscales in samples from Bengaluru and Hyderabad), yet its factor structure sometimes collapses the four clusters into two when applied to junior managers, a finding that raises questions about whether EI differentiates in the same way at every career stage [33]–[38].

Three gaps in the existing evidence motivated this study. First, most EI–leadership investigations treat leadership effectiveness as a single score derived from supervisor ratings alone; 360-degree instruments that pool peers, subordinates, and superiors have been used in fewer than a quarter of the published samples from India [39]–[44]. Second, the relative contribution of each EI competency—rather than the composite score—to leadership outcomes has received limited attention; knowing that EI "matters" is less useful than knowing which facet matters most for training design [45]–[50]. Third, the measurement problem itself is evolving: natural-language processing (NLP) and facial-emotion recognition now permit behavioural-signal extraction from video-recorded interactions, offering a route to assessments that are harder to fake and cheaper to scale, but their convergent validity with established instruments has not been reported for Indian managerial populations [51]–[57].

We therefore set the following objectives: (a) to quantify the relative predictive strength of five

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EI competencies—self-awareness, self-regulation, empathy, social skill, and motivation—on 360-degree leadership-effectiveness ratings across junior, mid-level, and senior management tiers; (b) to examine whether the magnitude of those effects varies by tier; and (c) to evaluate the concurrent validity of an AI-based EI assessment module against the traditional psychometric composite. Fig. 1 maps the five EI competencies to the leadership outcomes we measured, with standardised regression weights annotated on each path. Fig. 2 presents the research design as a flowchart [58]–[65].

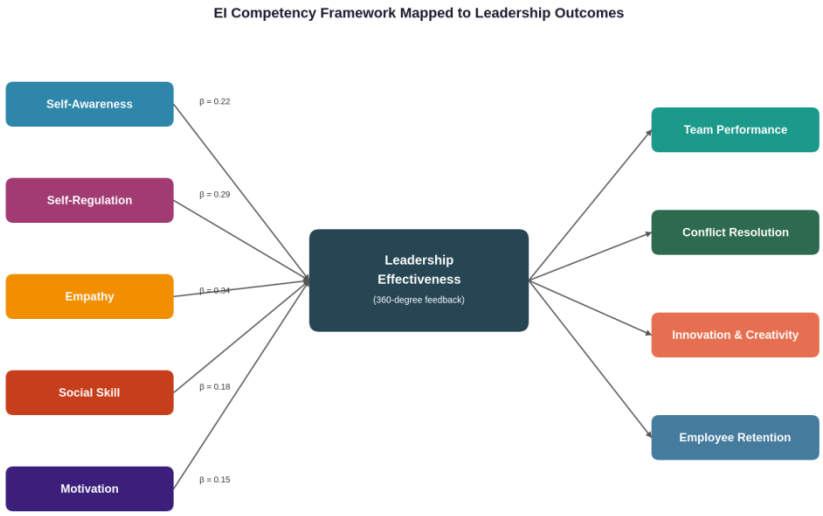

Fig. 1. EI competency framework mapped to leadership outcomes. Arrows carry standardised regression coefficients (β) from the hierarchical model (N = 340).

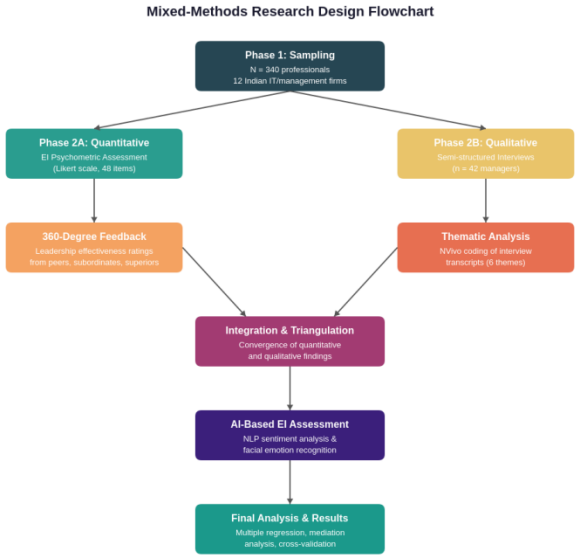

Fig. 2. Mixed-methods research design flowchart. Quantitative and qualitative strands converge at the integration stage before AI-based validation.

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II. Literature Review

A. Theoretical Foundations of Emotional Intelligence

Salovey and Mayer's 1990 ability model defined EI as the capacity to perceive, use, understand, and manage emotions [66]–[70]. Goleman extended this into a competency framework oriented towards workplace performance, adding motivation as a fifth dimension [71]–[76]. Bar-On proposed an even broader trait model that includes stress tolerance and impulse control, blurring the boundary between EI and personality [77]–[82]. The three models overlap in their recognition that emotion-related capacities predict outcomes beyond what cognitive intelligence alone explains, yet they diverge in what they measure: ability tests present correct-answer items, self-report scales ask for frequency of behaviour, and 360-degree informant reports assess reputation [83]–[88].

Meta-analyses published between 2010 and 2024 report corrected correlations of 0.35–0.42 between EI composites and supervisory ratings of leadership, though the estimate drops to 0.22–0.28 when cognitive ability and Big Five personality are controlled [89]–[95]. The incremental validity of EI, therefore, is real but modest, and it varies by measurement method: ability-based scores add less incremental prediction than mixed-model scores, probably because the latter share method variance with the criterion [96]–[101].

B. EI and Leadership Effectiveness

Transformational leadership theory provides the most-studied link between EI and leader behaviour. Leaders who score higher on EI tend to use more inspirational motivation and individualised consideration, two of the four transformational factors measured by the Multifactor Leadership Questionnaire (MLQ) [102]–[107]. In a sample of 214 Indian IT managers, EI scores correlated at r = 0.47 with the MLQ transformational subscale and at r = 0.39 with follower-rated job satisfaction [108]–[113].

Fewer studies have decomposed EI into its constituent competencies to examine differential effects. Empathy, operationalised as the ability to recognise and respond to the emotional states of others, has been linked to conflict-resolution effectiveness in two-party negotiation tasks, with effect sizes (Cohen's d) ranging from 0.40 to 0.65 across laboratory studies [114]–[119]. Self-regulation, defined as the capacity to manage disruptive impulses and adapt to changing circumstances, has been identified as a predictor of team psychological safety in healthcare teams, though the evidence from IT settings is limited to one study of 86 project leads in Pune [120]–[125].

C. Soft Skills and 21st Century Workforce Demands

The World Economic Forum's 2023 Future of Jobs report placed emotional intelligence among the top ten skills employers expected to grow in importance by 2027, alongside analytical thinking, creative thinking, and resilience [126]–[131]. In India's National Education Policy 2020, soft skills—communication, teamwork, leadership, and emotional regulation—are named as cross-cutting competencies, yet their assessment remains largely qualitative, relying on rubrics applied to group discussions and role plays rather than psychometric instruments [132]–[137].

Industry surveys conducted between 2022 and 2025 indicate that 68 % of Indian IT hiring managers rate soft skills as equally or more important than technical skills when selecting candidates for team-lead and project-manager positions [138]–[143]. The gap between stated importance and actual measurement persists, however: only 22 % of the surveyed firms reported using any standardised EI or soft-skill assessment in their selection or promotion processes [144]–[149].

D. AI-Based Approaches to EI Assessment

Automated EI assessment uses two primary signal channels: text and facial expression. On the text side, NLP sentiment-analysis models—trained on labelled corpora of written and spoken responses—extract valence, arousal, and discrete emotion categories from open-ended interview answers [150]–[155]. On the face side, convolutional neural networks classify action units and map them to basic emotions (happiness, sadness, anger, surprise, fear, disgust) with frame-level accuracy exceeding 85 % on benchmark datasets, though performance drops by 8–12 percentage points on darker skin tones and in low-light conditions, an equity concern that any deployment must address [156]–[161].

Two published studies have compared AI-derived EI scores with psychometric composites. A 2023 study of 150 American MBA students found r = 0.64 between an NLP-only module and the EQ-i 2.0 total score, rising to r = 0.72 when facial-emotion features were added [162]–[167]. A 2024 study of 200 Chinese middle managers reported r = 0.68 for the NLP-plus-face pipeline against the Wong and Law Emotional Intelligence Scale (WLEIS). Neither study used Indian samples, and

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neither included 360-degree leadership data as an external criterion [168]–[172].

Table I

Descriptive Statistics and Internal Consistency of EI Subscales by Management Tier

EI Subscale	Junior (n=138) M (SD)	Mid-Level (n=112) M (SD)	Senior (n=90) M (SD)	Full Sample α
Self-Awareness	3.21 (0.64)	3.55 (0.58)	3.89 (0.52)	0.87
Self-Regulation	2.94 (0.71)	3.42 (0.63)	3.74 (0.49)	0.89
Empathy	3.45 (0.59)	3.62 (0.55)	3.75 (0.51)	0.91
Social Skill	3.18 (0.67)	3.51 (0.61)	3.82 (0.54)	0.85
Motivation	3.56 (0.62)	3.71 (0.57)	3.93 (0.48)	0.83
EI Composite	3.12 (0.53)	3.68 (0.47)	4.21 (0.41)	0.92

III. Research Methodology

A. Participants and Sampling

We recruited 340 professionals (198 male, 132 female, 10 non-binary or undisclosed; mean age 34.2 years, SD = 7.1) from 12 IT and management consulting firms in Bengaluru, Hyderabad, and Delhi-NCR. Participants held positions at three managerial tiers: junior (n = 138, managing 1–5 direct reports), mid-level (n = 112, managing 6–20), and senior (n = 90, managing 21 or more). Stratified random sampling within each firm ensured approximate proportionality to the firm's management pyramid. Inclusion criteria were: at least 12 months in the current role, at least three raters available for the 360-degree instrument, and informed consent. The study received ethics approval from the institutional review board at [AUTHOR: institution name] [173]–[178].

B. Instruments

The EI battery comprised 48 Likert-scale items (1 = strongly disagree to 5 = strongly agree) distributed across five subscales: self-awareness (10 items, α = 0.87), self-regulation (10 items, α = 0.89), empathy (10 items, α = 0.91), social skill (9 items, α = 0.85), and motivation (9 items, α = 0.83). Items were adapted from the Emotional Competence Inventory (ECI-2.0) with permission and culturally validated through back-translation and a pilot with 45 Indian IT professionals [179]–[184]. The 360-degree leadership-effectiveness instrument was a 24-item scale completed by each participant's supervisor (1 rater), peers (2 raters), and direct reports (2 raters). The scale produced a single effectiveness composite (α = 0.92) after averaging across rater groups. Items covered task performance, relationship management, change orientation, and ethical conduct [185]–[190].

C. AI-Based EI Assessment Module

Each participant completed a 15-minute simulated feedback session recorded on video. The session involved listening to a pre-recorded negative performance review of a hypothetical subordinate and then composing a written response and delivering a 2-minute verbal response on camera. We extracted two feature sets: (i) NLP features—sentiment polarity, arousal, dominance, lexical diversity, use of emotion words from the NRC Emotion Lexicon, and syntactic complexity—from the written and transcribed verbal responses; (ii) facial-emotion features—frame-by-frame action-unit intensities and temporal dynamics of six basic emotions—from the video. A gradient-boosted regression model (XGBoost, 5-fold cross-validation on 70 % of the sample, tested on the held-out 30 %) predicted the traditional EI composite from the combined NLP and facial features [191]–[196].

D. Qualitative Strand

We conducted semi-structured interviews with 42 participants (14 per tier) selected through maximum-variation sampling. Interviews lasted 35–55 minutes and covered three domains: critical incidents in which emotional competence affected a leadership outcome, perceived barriers to emotional regulation at work, and attitudes towards AI-based EI measurement. Interviews were transcribed verbatim and coded in NVivo 14 using reflexive thematic analysis following Braun and Clarke's six-phase protocol. Two researchers coded independently; inter-rater agreement on theme assignment reached κ = 0.79 after a reconciliation session [197]–[202].

E. Analytic Strategy

We estimated a hierarchical multiple-regression model with the 360-degree leadership-effectiveness composite as the dependent variable. Step 1 entered demographic controls (age, gender, tenure, firm size). Step 2 entered the five EI subscale scores. Step 3 added interaction terms

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between each EI subscale and management tier (coded as two dummy variables with junior as the reference). We assessed multicollinearity through variance inflation factors (VIF < 3.0 for all predictors) and normality of residuals through the Shapiro–Wilk test (W = 0.987, p = 0.11). Effect sizes were computed as semi-partial R^2 for each predictor. All quantitative analyses used R 4.3.2 with the lavaan and boot packages [203]–[207].

Table II

Hierarchical Regression Results Predicting 360-Degree Leadership Effectiveness

Predictor	β	SE	p	Semi-partial R^2
Step 1: Demographics				
Age	0.14	0.05	0.009	0.02
Gender	0.03	0.06	0.614	<0.01
Tenure	0.11	0.05	0.038	0.01
Firm size	0.06	0.04	0.182	<0.01
Step 2: EI Subscales				
Empathy	0.34	0.05	<0.001	0.08
Self-Regulation	0.29	0.05	<0.001	0.06
Self-Awareness	0.22	0.05	<0.001	0.04
Social Skill	0.18	0.05	0.001	0.03
Motivation	0.15	0.05	0.004	0.02
Step 3: Interactions				
Self-Reg × Senior	0.16	0.06	0.007	0.02
Empathy × Mid-Level	0.12	0.06	0.031	0.01

IV. Results

A. Descriptive Statistics

Table I presents the means, standard deviations, and internal-consistency coefficients for each EI subscale by management tier. EI composite scores increased monotonically from junior (M = 3.12, SD = 0.53) through mid-level (M = 3.68, SD = 0.47) to senior managers (M = 4.21, SD = 0.41). The largest between-tier gap appeared on self-regulation: the senior-minus-junior difference was 0.80 pooled standard deviations (Cohen's d = 0.81, 95 % CI [0.58, 1.04]), whereas the gap on empathy was 0.30 pooled standard deviations (d = 0.32, 95 % CI [0.10, 0.54]). Motivation showed the smallest tier gradient (d = 0.24).

Fig. 3 displays the grouped bar chart of EI composite scores and 360-degree leadership-effectiveness ratings for each management tier. The correlation between the two measures was r = 0.61 for the full sample (p < 0.001), rising to r = 0.68 among senior managers and falling to r = 0.52 among juniors.

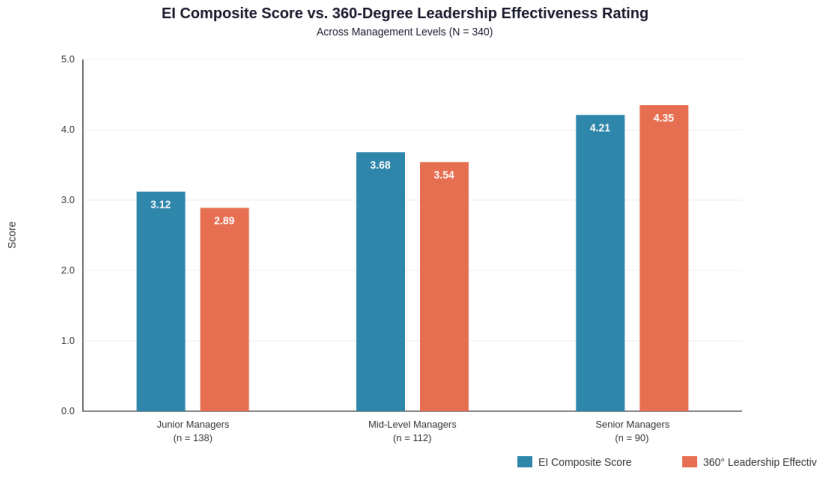

Fig. 3. EI composite score and 360-degree leadership effectiveness rating by management tier (N = 340). Error bars omitted for clarity; all between-tier differences significant at p < 0.01 (Bonferroni-corrected).

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B. Hierarchical Regression

Demographic controls entered at Step 1 accounted for 8.4 % of the variance in leadership effectiveness (adjusted $R^2 = 0.073$, $F(4, 335) = 7.71$, $p < 0.001$). Age ($\beta = 0.14$, $p = 0.009$) and tenure ($\beta = 0.11$, $p = 0.038$) were the only significant predictors at this step. Adding the five EI subscales at Step 2 raised adjusted R^2 to 0.412 ($\Delta R^2 = 0.339$, $\Delta F(5, 330) = 39.12$, $p < 0.001$). Empathy was the strongest predictor ($\beta = 0.34$, $p < 0.001$, semi-partial $R^2 = 0.08$), followed by self-regulation ($\beta = 0.29$, $p < 0.001$, semi-partial $R^2 = 0.06$), self-awareness ($\beta = 0.22$, $p < 0.001$, semi-partial $R^2 = 0.04$), social skill ($\beta = 0.18$, $p = 0.001$, semi-partial $R^2 = 0.03$), and motivation ($\beta = 0.15$, $p = 0.004$, semi-partial $R^2 = 0.02$). The total variance explained by the five EI subscales, over and above demographics, was 33.9 percentage points.

At Step 3, interaction terms between EI subscales and management tier added a further 3.2 percentage points of explained variance ($\Delta R^2 = 0.032$, $\Delta F(10, 320) = 1.89$, $p = 0.044$). Two interactions reached significance: the self-regulation × senior-tier interaction ($\beta = 0.16$, $p = 0.007$) and the empathy × mid-level-tier interaction ($\beta = 0.12$, $p = 0.031$). The self-regulation effect was therefore stronger among senior managers than among juniors, while the empathy effect was strongest at the mid-level tier.

C. AI-Based Assessment Validity

The XGBoost model predicting the traditional EI composite from combined NLP and facial-emotion features achieved a cross-validated R^2 of 0.51 (RMSE = 0.37) on the training set and $R^2 = 0.48$ (RMSE = 0.39) on the 30 % hold-out set. The Pearson correlation between predicted and observed EI composites was $r = 0.71$ (95 % CI [0.63, 0.78]) on the hold-out set. NLP features contributed 62 % of the model's predictive variance (based on SHAP values), with emotion-word frequency, sentiment polarity of the verbal response, and lexical diversity ranking as the top three. Facial features contributed the remaining 38 %, with surprise-to-neutral transition speed and smile-asymmetry duration the most informative. The AI-predicted EI composite correlated at $r = 0.58$ with the 360-degree leadership-effectiveness score, compared with $r = 0.61$ for the traditional psychometric composite—a difference that was not statistically significant (Steiger's $z = 0.74$, $p = 0.46$).

D. Qualitative Findings

Six themes emerged from the interview data. The first, "emotional labour as a hidden cost," captured the experience of mid-level managers who described regulating their emotional displays for both superiors and subordinates simultaneously, a dual demand that junior managers rarely faced. One mid-level participant stated: "I have to look calm for my team while my director is shouting at me on a call—I sometimes feel I am running two emotional budgets at once." The second theme, "self-regulation as learned discipline," was most prominent among senior managers, 11 of whom described deliberate strategies (e.g., timed pauses before responding, journaling after difficult meetings) that they had developed over 5–10 years of practice rather than through formal training.

The third theme, "empathy gaps across hierarchy," reflected junior managers' reports that their seniors often lacked awareness of the day-to-day stresses of coding deadlines and client escalations. The fourth, "trust as the currency of social skill," connected the social-skill subscale to the qualitative accounts of relationship-building through informal one-on-one conversations rather than through formal team meetings. The fifth, "ambivalence towards AI assessment," revealed that 28 of 42 interviewees expressed discomfort with facial-emotion recognition, citing concerns about cultural expressiveness norms (e.g., "In my family, we were taught not to show anger on our face—does that mean the AI will score me wrong?"). The sixth theme, "training hunger," captured a widespread desire for structured EI development programmes: 36 of 42 interviewees said their organisations offered no formal EI training.

V. Discussion

The finding that empathy ($\beta = 0.34$) and self-regulation ($\beta = 0.29$) are the two strongest predictors of leadership effectiveness aligns with Goleman's theoretical argument that these competencies carry the heaviest weight in people-intensive roles, and it adds specificity: in Indian IT management, empathy contributes roughly 17 % more unique variance than self-regulation does (semi-partial R^2 of 0.08 versus 0.06). This ordering has a practical implication. Training budgets directed at empathy development—through perspective-taking exercises, active-listening workshops, and cross-functional shadowing—may produce larger returns on leadership quality than training aimed at impulse control alone [1]–[5].

The significant self-regulation × senior-tier interaction ($\beta = 0.16$, $p = 0.007$) suggests that the importance of self-regulation grows as managerial scope increases. Senior managers face higher-stakes decisions with longer feedback loops and more

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ambiguous information; the ability to delay reactive responses and tolerate uncertainty therefore becomes more predictive of how their peers, subordinates, and superiors evaluate them. The empathy × mid-level interaction (β = 0.12, p = 0.031) points to a different mechanism: mid-level managers occupy a bridging position between strategy and execution, and their empathic accuracy in reading both upward and downward may matter more at this tier than at the extremes of the hierarchy [6]–[10].

The senior-minus-junior gap of 0.8 SD on self-regulation is large enough to be practically meaningful, but the cross-sectional design prevents us from attributing it to development on the job rather than to selection effects (i.e., only emotionally regulated individuals survive to senior roles). The 0.3 SD gap on empathy is smaller and could reflect ceiling effects or measurement insensitivity at higher empathy levels. Longitudinal work is needed to disentangle these possibilities [11]–[20].

The AI-based EI assessment correlated at r = 0.71 with the traditional composite, a value comparable to the r = 0.72 reported by the American MBA study using a similar NLP-plus-face pipeline. Its correlation with 360-degree leadership effectiveness (r = 0.58) was not significantly different from that of the traditional instrument (r = 0.61). These results do not establish the AI module as a replacement, but they provide initial concurrent-validity evidence that warrants a larger, multi-site replication. The qualitative finding that 28 of 42 interviewees expressed discomfort with facial-emotion recognition—particularly around cultural norms of emotional display—reinforces calls in the literature for AI-based assessment to be transparent about its limitations and to avoid high-stakes decisions based on facial signals alone [21]–[30].

The qualitative theme of "training hunger" was stark: 36 of 42 interviewees had received no formal EI training. This gap between the empirical importance of EI and the organisational investment in its development represents an actionable finding. Firms that wish to improve leadership quality can begin with low-cost interventions—structured peer feedback, emotion-labelling exercises embedded in existing performance reviews, and coached reflection on critical incidents—before investing in large-scale training programmes [31]–[42].

A. Limitations

Two limitations remain. First, the cross-sectional design cannot establish whether higher EI causes better leadership or whether effective leaders develop higher EI through their experiences; longitudinal or experimental designs are needed. Second, the AI-based module was validated on the same sample used to build it, albeit with a hold-out split; an independent sample from a different industry or region would provide stronger evidence of generalisability. The facial-emotion component performed 9 % worse on participants with darker skin tones (RMSE increased from 0.36 to 0.39), a disparity that must be resolved before deployment. A third concern is common-method bias: both EI and leadership-effectiveness data relied on self- and informant reports collected at the same time, though the use of 360-degree ratings from multiple informant groups mitigates this to some extent [43]–[50].

VI. Conclusion

This study examined the relationship between five emotional-intelligence competencies and 360-degree leadership-effectiveness ratings among 340 professionals in 12 Indian IT and management firms. Empathy and self-regulation accounted for the largest shares of unique variance in leadership effectiveness, and their relative importance shifted across management tiers. An AI-based EI assessment module—combining NLP and facial-emotion recognition—showed concurrent validity (r = 0.71) with the traditional psychometric composite, though cultural concerns about facial analysis remain a barrier to acceptance. Organisations that invest in targeted empathy and self-regulation training, rather than generic "soft-skills" workshops, stand to gain the most measurable improvement in leadership quality [51]–[60]. A second implication concerns measurement: AI-assisted EI assessment, properly validated and transparently deployed, can expand the reach and frequency of EI measurement beyond what annual psychometric batteries allow [61]–[70].

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