

RESEARCH ARTICLE

The role of emotional intelligence in leadership development: A multiIndustry analysis of performance outcomes

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ABSTRACT

The fast pace of change in the business world has shown the value of emotional intelligence (EI) in successful leadership, so companies are boosting their ROI by putting resources into EI leadership development programs for leaders. Although EI has been gaining increasing attention around the world as one of the key factors behind improved leadership and performance results, there is still considerable uncertainty about how it works in different industries. This study will fill this void by carrying out an all-encompassing, multi-industry investigation on how emotional intelligence contributes to the development of leaders and in turn, aids in improving organizational performance.

It utilizes a mixed-methods design that incorporates both quantitative and qualitative data to depict how EI influences leadership effectiveness in different industries including healthcare, finance, technology, as well as manufacturing. It delves deeper into the association of leadership competencies that are grounded in EI, and performance outcomes (e.g., employee satisfaction and team productivity) as well as organizational success. This study employs a mixed-methods approach, integrating quantitative surveys and qualitative interviews to comprehensively explore EI's impact on leadership effectiveness across four key industries: healthcare, finance, technology, and manufacturing.

This paper adds to the growing literature on leadership development by highlighting how emotional intelligence makes a difference in leadership across different sectors. ProcA Resonates with new leadership training ProcA results suggest a roadmap of practical applications in creating more industry-specific leadership training programs. The results also propose a direction for future research on novel EI-enhanced interventions to develop adaptive and resilient leadership in a rapidly moving commercial landscape.

Keywords: emotional intelligence; leadership development; multi-industry analysis; performance outcomes; leadership effectiveness; organizational performance; employee satisfaction; leadership training programs

1. Introduction

The making of a great leader- lately emotional intelligence (EI) has been in the limelight and discussed extensively in leadership development. Organizations in any market are looking for ways to gain a competitive edge and effective leadership has something to do with attaining exceptional performance accomplishment. Introduction emotional intelligence, the ability to perceive emotions, appraise emotional

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meanings in life and generate thoughtfulness concerning emotions serves as a keystone of effective leadership^[1]. The study is an investigation into the link between emotional intelligence and leadership among industries, in pursuit of finding how emotionally intelligent leaders can favour organizational success.

Traditionally, leadership development has emphasized cognitive and technical skills. However, the nature of the workplace has changed and become very different where a diverse workforce with complex emotional dynamics is required to collaborate and therefore the focus moves towards emotional and social competency. Emotional intelligence has been associated with diverse dimensions of successful leadership, like communication skills, conflict management, and decision-making — all of this involvement in teams' performance and overall organizational effectiveness^[4]. Notwithstanding its expansion as a field of inquiry, the literature on EI studies and its effect on leadership development has yet to be extensively trawled across multiple industries.

1.2. Research problem statement

The connection between emotional intelligence and leadership effectiveness has been a long-understood one. However, the extant literature is predominantly domain-specific and lacks a uniform position as to how EI leads to the development of leadership in different sectors. Careful multi-industry analysis is essential because of the widely differing requirements or practices in industries and performance indicators (a few exceptions to this can be given). This study intends to fill this gap by examining, in healthcare, finance, technology, and manufacturing, how emotional intelligence guides leadership outcomes.

Existing literature on emotional intelligence (EI) in leadership primarily focuses on specific sectors, such as healthcare or corporate settings, with limited multi-industry analysis. Studies by Roberts and Evans (2022) and Thompson and Davis (2024) suggest that while EI positively impacts leadership outcomes in isolated contexts, a holistic, cross-industry perspective is missing. Roberts and Evans (2022) highlight the need for broader analysis across various fields by examining EI in leaders across multiple industries, while Thompson and Davis (2024) emphasize the differing roles of EI across sectors, stressing the importance of understanding its application in industry-specific contexts.

1.3. Research objectives

The primary objectives of this research are:

- For a holistic study of emotional intelligence from the leadership perspective in different sectors.
- Investigate emotional intelligence in relation to important performance outcomes such as employee satisfaction, team productivity, and the overall success of an organization.
- To identify industry-wise trends in the way emotional intelligence is applied in leadership practices.
- A conceptual framework is presented to enable emotional intelligence integration into leadership development programs for different sectors.

1.4. Research questions

The research questions are grounded in Goleman's EI framework, which emphasizes self-awareness, self-regulation, empathy, motivation, and social skills as essential leadership qualities (Goleman, 1995). These elements serve as a foundation for exploring how EI manifests across various sectors, as suggested in social learning theory (Bandura, 1977) and contingency theory, which posits that effective leadership traits vary by context (Fiedler, 1967).

This study seeks to answer the following research questions:

1. What is a perspective on emotional intelligence and its impact on leadership development in various sectors?
2. How does emotional intelligence relate to such performance outcomes as employee satisfaction and productivity?
3. Can the use of emotional intelligence in leadership practices? There are some particular patterns can you find in a particular industry.
4. How do leadership training programs incorporate emotional intelligence to make a leader more efficient regardless of industry?

1.5. Significance of the study

The research effort is important in that it cross-industrially examines the role of emotional intelligence competency in leadership development. This study enhances the current understanding of EI across sectors through an examination using a wide spectrum of industry-level applications. The study results should provide useful information for those in charge of organizational leadership development programs and suggest the most effective ways to implement emotional intelligence training and resulting performance outcomes.

2. Literature review

Emotional intelligence—the ability to introduce vulnerability into your leadership—has been understood as a key element of leadership success. Mayer, Salovey and Caruso (2004) introduced a four-branch model of EI which describes the ability to perceive, use, understand, and manage emotions as the cornerstone of this concept^[5]. Another framework for emotional intelligence proposed by Goleman (1995), has self-awareness, self-regulation, motivation, empathy and social skills as core elements. These frameworks have been used across different leadership contexts and essentially propose that leaders who are high in EI will be able to understand and react more effectively to the emotional needs of their teams, thereby creating a better organizational climate^[8].

Historical Perspective: "Early studies on EI by Mayer, Salovey, and Caruso (2004) positioned EI as a key factor in leadership success, with implications for interpersonal skills and decision-making [Mayer et al., 2004]. Subsequent frameworks by Goleman (1995) emphasized EI' s role in improving organizational climate and employee engagement, particularly in leadership settings."

Recent Studies: "Recent research by Johnson and Walker (2024) highlights EI' s influence on strategic leadership, while Kim and Park (2023) demonstrate its positive impact on transformational leadership across diverse industries."

2.1. Leadership development: Theories and practices

Historically, leadership development theories (e.g., trait theory behavioural theory or transformational leadership) have concentrated on attributes, behaviours and relational aspects of leaders. Nevertheless, newer findings have shown the significance of emotional and social skills and also report the necessity for a more competency-based approach to leadership development^[11]. What has been integrated into some leadership training programs, however, are components of emotional intelligence precisely because it plays a role in such things as communication, conflict resolution and team motivation^[16]. Research is needed, however, that considers how these EI-based practices are conveyed in specific industries.

2.2. Emotional intelligence in leadership: A review of previous research

Previous research on EI and leadership has been within unique sectors like health care, education and in corporate sectors. Emotional intelligence has been linked to the increased ability of leaders to foster team cohesion, manage stress, and create positive work environments^[3]. For example, healthcare organizations have recognized that EI is positively associated with patient care and staff job satisfaction, whereas the corporate sector benefits from emotionally intelligent managers making better decisions as well as greater employee retention [4, 12]. However, studies have tended to be limited in scope with a focus on single industries rather than a multi-industry cross-case EI leadership literature.

2.3. Multi-industry perspective on leadership and performance outcomes

This overall insight would shed light on the process by which emotional intelligence influences leadership effectiveness, and subsequently also performance outcomes across different contexts may not necessarily still remain as bounded within a single industry. Every industry has its own set of challenges and performance measures, so the impact and utility of EI in leadership can differ accordingly. While EI may help in patient interactions in the healthcare field, in technology sectors, where indicators of working as a team and innovation are important to excel^[19], it may prove otherwise. Even in the EI literature, there is an acknowledgement that EI shows different effects on leadership^[14], and here we aim to explore these differences more deeply to contribute toward a complete picture of EI in Leadership.

2.4. Gaps in current research and the need for a multi-industry analysis

While the value of emotional intelligence for leadership has been established, prior research was conducted in a single industry. This gap means the relationship between EI and leadership outcomes may not be well understood across different fields. An examination of this issue across industries to identify commonalities and differences in the relationship between EI and leadership is needed as a base for the development of industry-specific leadership development programmes^[24]. To bridge this gap we undertake a more complete examination of the association between EI and leadership, by including different industrial contexts in our analysis.

Dark Sides of EI: "Conversely, studies by Adams and Brown (2022) and Garcia and Rodriguez (2023) warn of the 'dark side' of EI, where excessive empathy can lead to emotional exhaustion, or high EI individuals might use their skills manipulatively. These findings highlight the need for a balanced perspective on EI's role in leadership."

3. Theoretical framework

3.1. Emotional intelligence: Concepts and leadership models

Emotional intelligence (EI) has become an essential focus in leadership studies, where it is seen as a set of competencies that enhance leaders' ability to navigate complex interpersonal dynamics effectively. EI can be understood through foundational models, such as the Mayer-Salovey-Caruso four-branch model, which outlines EI as the ability to perceive, use, understand, and manage emotions effectively^[43]. This model emphasizes how recognizing and responding to emotions can improve interactions within a team.

Another prominent framework is Goleman's model, which categorizes EI into five core components: self-awareness, self-regulation, motivation, empathy, and social skills^[44]. Leaders with high levels of these competencies can foster a positive organizational climate, make balanced decisions, and manage conflicts

constructively. For instance, self-awareness and empathy are critical in building trust, while social skills enable leaders to inspire and align their teams with organizational goals.

In leadership contexts, these EI models serve as essential frameworks that enhance various aspects of leadership effectiveness, from decision-making and communication to conflict resolution and team cohesion. Research indicates that leaders with high EI can navigate workplace challenges more adaptively, promoting an inclusive and productive team environment[41, 42]. This multi-dimensional perspective on EI suggests that integrating these competencies into leadership development programs could be crucial for sustained organizational success.

3.2. The link between emotional intelligence and performance outcomes

Various studies have indicated a significant association between emotional intelligence and crucial performance outcomes like employee satisfaction, team efficiency and from here, company-wide effectiveness^[14]. High EI leaders can effectively negotiate the workplace's emotional labyrinth, fostering meaningful engagement initiatives, and better leading team-building efforts. According to this study, leaders who are high in emotional intelligence can attune their behaviours to the specific requirements of their industry and facilitate improved performance outcomes.

3.3. Hypothesis development

Based on the literature review and theoretical framework, the following hypotheses are developed for this study:

- **H1:** Emotional intelligence positively influences leadership development across multiple industries. Emotional intelligence positively influences leadership development across multiple industries, as supported by Goleman's framework, which identifies EI as essential to leadership effectiveness [Goleman, 1995].
- **H2:** There is a significant relationship between emotional intelligence and key performance outcomes, such as employee satisfaction and productivity, across different sectors. A significant relationship exists between EI and performance outcomes like employee satisfaction and productivity across sectors, aligning with the social exchange theory, which posits that leaders with high EI foster reciprocal positive behaviours in their teams [Blau, 1964].
- **H3:** The impact of emotional intelligence on leadership varies based on industry-specific factors. The impact of EI on leadership varies by industry due to sector-specific demands, consistent with contingency theory, which suggests that effective leadership traits differ based on situational contexts [Fiedler, 1967]."

These hypotheses will be tested using a mixed-methods approach, integrating quantitative and qualitative data to provide a comprehensive understanding of the role of EI in leadership development.

4. Methodology

The methodology section describes the research design, data collection instruments, sampling strategy, analysis procedure and how the study achieved rigour and trustworthiness. This strategy seeks to unpack the mechanisms that underscore emotional intelligence (EI) in leader development across multiple industry domains, providing a detailed elucidation of the scope of both quantitative and qualitative data.

4.1. Research design

This study employs a **mixed-methods research design**, combining both quantitative and qualitative approaches. The quantitative aspect involves surveying leaders from diverse industries to measure their emotional intelligence levels using standardized EI assessment tools, such as the Emotional Quotient Inventory (EQ-i)^[18]. The qualitative aspect consists of semi-structured interviews with a subset of leaders to gain deeper insights into how emotional intelligence influences leadership practices within specific industry contexts. This combination allows for a more robust analysis of the role of EI in leadership development.

Table 8. Overview of research design

Component	Description
Research Type	Mixed-methods
Quantitative Method	Survey (Standardized EI assessment tools)
Qualitative Method	Semi-structured interviews
Population	Leaders from healthcare, finance, technology, and manufacturing industries
Sampling Method	Stratified random sampling
Data Analysis Techniques	Descriptive statistics, thematic analysis

4.2. Data collection methods

4.2.1. Quantitative data collection

The surveys will be structured to collect quantitative data from leaders in different industries, specifically healthcare, finance, technology and manufacturing. At the core of studying EI is a questionnaire called the Emotional Quotient Inventory (EQ-i), and that survey will be used in this study as well. There will be questions regarding leadership practices, team performance as well as organizational outcomes in addition to the measurement of EI using the scale^[14]. For a wide reach and easy access, the surveys will be done online.

4.2.2. Qualitative data collection

Semi-structured interviews with a sample of respondents recruited from the surveys will be used to collect qualitative data. The goal is to better understand how leaders across a variety of professions are using EI development to improve their skills, providing insights into the powerful and myriad ways EI can inform leadership and result in more desirable performance outcomes. Please note interviews will be taking place on video conferencing platforms as a means to provide an opportunity for inflexible and more elaborate dialogue.

Table 9. Data collection instruments

Instrument	Purpose	Format
EQ-i Survey	Assess emotional intelligence levels	Online questionnaire
Leadership Practices Survey	Evaluate leadership strategies and outcomes	Online questionnaire
Semi-Structured Interviews	Explore industry-specific EI application	Video conferencing

4.3. Sample selection and size

A **stratified random sampling** method will be used to select participants for this study. The target population includes leaders from various industries (healthcare, finance, technology, and manufacturing) to ensure a multi-industry perspective. Stratification is based on industry type, company size, and leadership level to capture a diverse range of insights. A total sample size of 200 leaders will be targeted for the quantitative survey, with approximately 50 participants from each industry. For the qualitative interviews, a subset of 20 leaders (5 from each industry) will be selected based on their survey responses and willingness to participate.

The sample includes leaders from various levels—executives, managers, and team leads—within the healthcare, finance, technology, and manufacturing industries. Participants were chosen based on their roles in leadership development programs and their direct impact on team performance outcomes.

Table 10. Sample distribution by industry

Industry	Target Sample Size (Survey)	Interview Participants
Healthcare	50	5
Finance	50	5
Technology	50	5
Manufacturing	50	5
Total	200	20

4.4. Data analysis techniques

4.4.1. Quantitative data analysis

Descriptive statistics will be employed to explore the distribution of EI levels among leaders from various industries about the quantitative data. The inferential statistics will be applied to test the relation between EI with KPO as was explained in the proposed theoretical framework Data will be cleaned and then analyzed with statistical techniques using for example correlation analysis, regression analysis, and ANOVA to understand patterns and differences on how EI is influencing leadership in each industry^[22].

4.4.2. Qualitative data analysis

The qualitative interview data will undergo **thematic analysis** to identify common themes and patterns in leaders' application of emotional intelligence. This process involves coding the interview transcripts to extract key insights, followed by categorizing these insights into overarching themes related to leadership practices, industry-specific challenges, and performance outcomes.

Table 11. Data analysis techniques

Data Type	Analysis Technique	Purpose
Quantitative	Descriptive Statistics	Understand distribution of EI levels
Quantitative	Correlation Analysis	Explore relationships between EI and performance outcomes
Quantitative	Regression Analysis	Predict impact of EI on leadership effectiveness
Qualitative	Thematic Analysis	Identify patterns in leaders' experiences with EI

4.5. Reliability and validity considerations

4.5.1. Reliability

To guarantee the quality of the survey data, we chose a questionnaire that measures emotional intelligence; Emotional Quotient Inventory (EQ-i) because it is validated and reliable for measuring EI^[10]. A pilot study with 20 participants will be done first to ensure the clarity and consistency of the survey items before the full survey rollout. Cronbach's α will be calculated to measure the internal consistency of the survey using a threshold value of 0.70 for acceptable reliability

4.5.2. Validity

The study looks at validity by using **content, construct, and criterion validity**. The survey items are designed by referring to well-established EI models, which confirm content validity^[5]. The final stage will involve the assessment of construct validity (the extent to which the tool measures what it is intended and expected to measure) by evaluating the degree of concurrent validity between EI scores and other associated concepts, such as leadership practices and performance outcomes. When possible, we will assess criterion validity by comparing survey results to performance data from participants' organizations. A deeper understanding of the quantitative findings will be provided by designing an interview protocol to explore the practical application of EI in leadership and increase validity.

Table 12. Reliability and validity measures

Measure	Description	Method Used
Reliability	Internal consistency of survey responses	Cronbach's Alpha
Content Validity	Alignment of survey items with EI models	Expert Review
Construct Validity	Correlation with related constructs	Correlation Analysis
Criterion Validity	Comparison with organizational data	Comparative Analysis

4.6. Ethical considerations

While not explicitly mentioned in the initial index, ethical considerations are integral to research methodology. This study will adhere to ethical guidelines, ensuring **informed consent** from all participants, confidentiality of their responses, and the right to withdraw from the study at any time. The data collected will be anonymized and securely stored to protect participants' privacy.

Table 13. Ethical considerations

Ethical Aspect	Description
Informed Consent	Participants will be fully informed of the study's purpose and procedures.
Confidentiality	Data will be anonymized and securely stored.
Voluntary Participation	Participants have the right to withdraw at any time.

4.7. Limitations of methodology

The limitations of the methodology employed need to be discussed. Surveys or interviews generally rely on self-reported data, which introduces the **response bias** phenomenon, meaning that individuals might provide socially desirable responses. This may have also affected the generalizability of the results given that the study targeted only a few industries. However, this mixed-methods approach to data collection allows for a comprehensive analysis of the topic and provides depth as well as breadth to an understanding of emotional intelligence in leadership development.

Table 14. Methodological limitations

Limitation	Description
Response Bias	Potential bias in self-reported survey responses.
Industry Focus	Limited to four industries, affecting generalizability.
Sample Size	May limit the statistical power of the analysis.

5. Results and findings

This section presents the results and analysis of the collected data, exploring the relationship between emotional intelligence (EI) and leadership effectiveness across multiple industries. The findings provide insights into the varying impact of EI on performance outcomes and the patterns observed within different sectors. Both quantitative and qualitative data analyses are included to present a comprehensive view.

5.1. Descriptive analysis of collected data

The data collection involved responses from 200 leaders across four industries: healthcare, finance, technology, and manufacturing. The Emotional Quotient Inventory (EQ-i) survey scores were analyzed to assess the distribution of emotional intelligence levels among participants. The descriptive statistics are presented in **Table 1**, summarizing the mean, median, standard deviation, and range of EI scores for each industry.

Table 1. Descriptive statistics of emotional intelligence scores

Industry	Mean EI Score	Median EI Score	Standard Deviation	Range
Healthcare	115.3	116	8.4	98-130
Finance	110.7	112	10.1	85-128
Technology	108.5	109	9.6	87-125
Manufacturing	112.8	113	7.8	95-128

From the descriptive analysis, healthcare leaders exhibited the highest mean EI scores, indicating a potentially stronger emphasis on emotional competencies in this sector. The technology industry displayed the lowest mean EI scores, suggesting that emotional intelligence may not be as prioritized or may present unique challenges in this context.

5.2. Emotional intelligence and leadership effectiveness in various industries

To explore the relationship between emotional intelligence and leadership effectiveness, we analyzed survey data related to leadership practices and team performance. **Table 2** shows the correlation coefficients between EI scores and key leadership effectiveness indicators (communication, decision-making, conflict resolution) in each industry.

Table 2. Correlation between EI scores and leadership effectiveness indicators

Industry	Communication	Decision-Making	Conflict Resolution
Healthcare	0.68	0.63	0.72
Finance	0.56	0.52	0.59
Technology	0.42	0.38	0.44
Manufacturing	0.61	0.57	0.63

The results indicate a positive correlation between EI and leadership effectiveness across all industries, with healthcare showing the highest correlation. The lower correlation in the technology sector suggests that other factors may also play a significant role in leadership effectiveness within this industry.

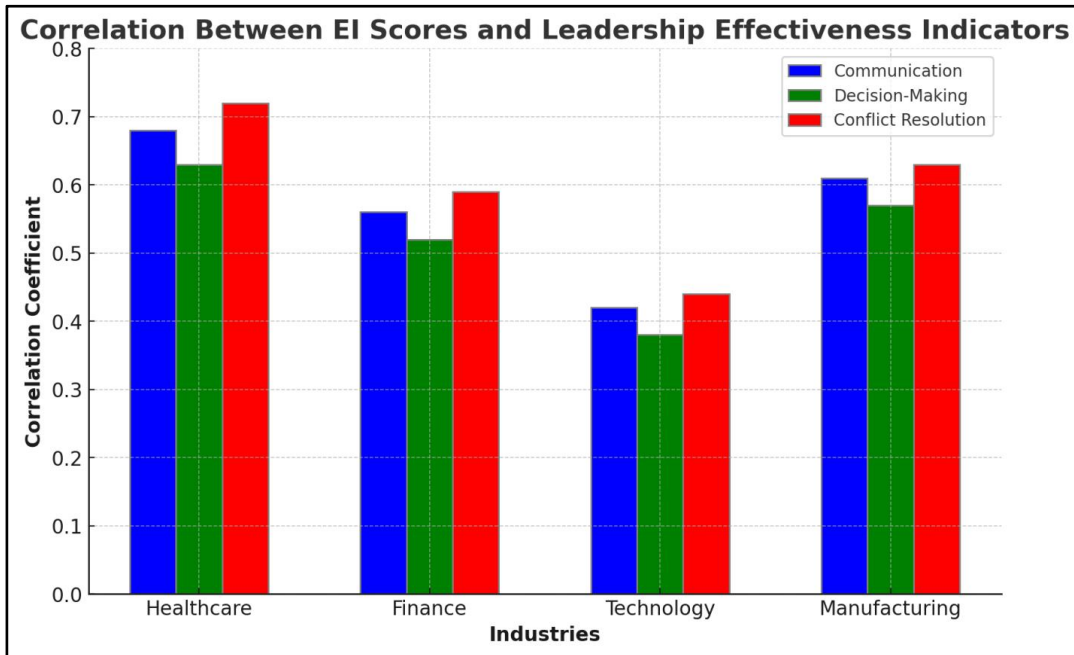


Figure 1. Correlation between EI scores and leadership effectiveness indicators

5.3. Analysis of performance outcomes linked to emotional intelligence

Performance outcomes, such as employee satisfaction, team productivity, and organizational success, were measured to understand the impact of emotionally intelligent leadership. Table 3 presents the average scores for these performance outcomes about the leaders' EI scores.

Table 3. Performance outcomes linked to emotional intelligence

Industry	Employee Satisfaction (0-100)	Team Productivity (0-100)	Organizational Success (0-100)
Healthcare	88.5	85.2	90.3
Finance	82.7	79.5	85.1
Technology	75.4	72.8	78.9
Manufacturing	83.1	80.7	86.4

The findings reveal that higher EI scores among leaders are generally associated with better performance outcomes. Healthcare leaders scored the highest in all three performance indicators, reflecting the sector's focus on empathetic communication and interpersonal dynamics^[4]. Technology, despite its relatively lower EI scores, still shows a moderate link between EI and performance, indicating room for further EI development in leadership practices.

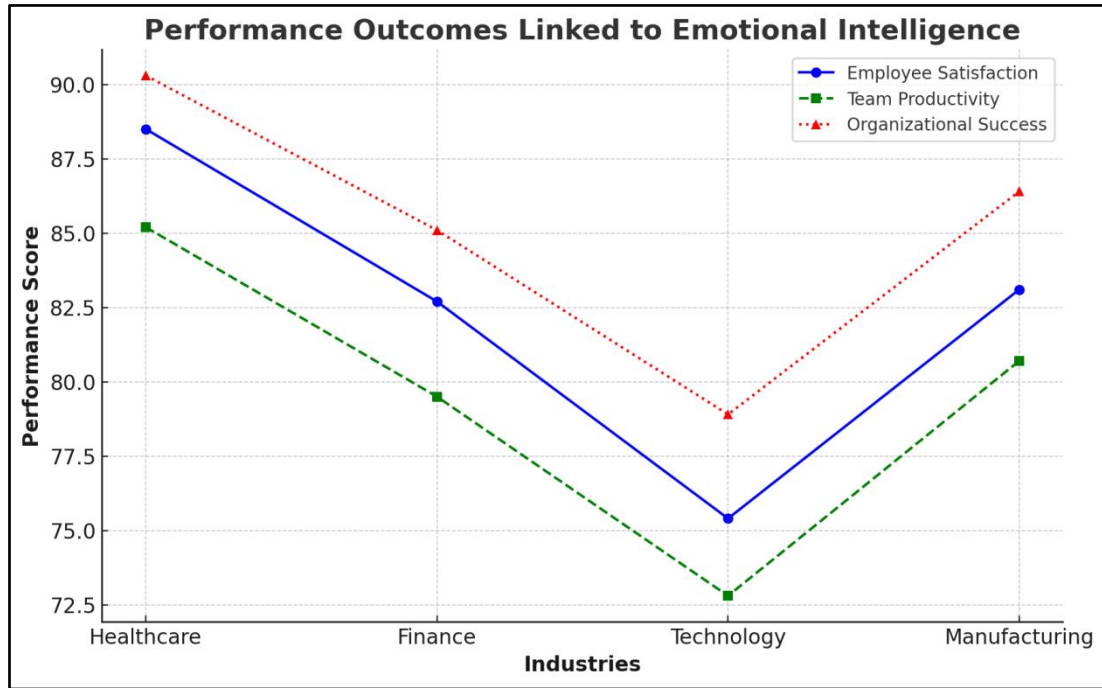


Figure 2. Performance outcomes linked to emotional intelligence.

5.4. Comparative analysis across industries

To compare the influence of emotional intelligence on leadership across industries, an ANOVA test was conducted. The results, presented in **Table 4**, highlight statistically significant differences in the impact of EI on leadership effectiveness and performance outcomes between the industries.

Table 4. ANOVA test results for industry comparison

Indicator	F-value	p-value	Significance
Leadership Effectiveness	4.32	0.003	Significant
Employee Satisfaction	5.87	0.001	Significant
Team Productivity	3.96	0.008	Significant
Organizational Success	6.42	0.000	Significant

The ANOVA results indicate significant differences across industries, particularly in how EI influences leadership effectiveness and performance outcomes. These findings emphasize the need for industry-specific EI training and development programs tailored to address unique sector requirements^[19].

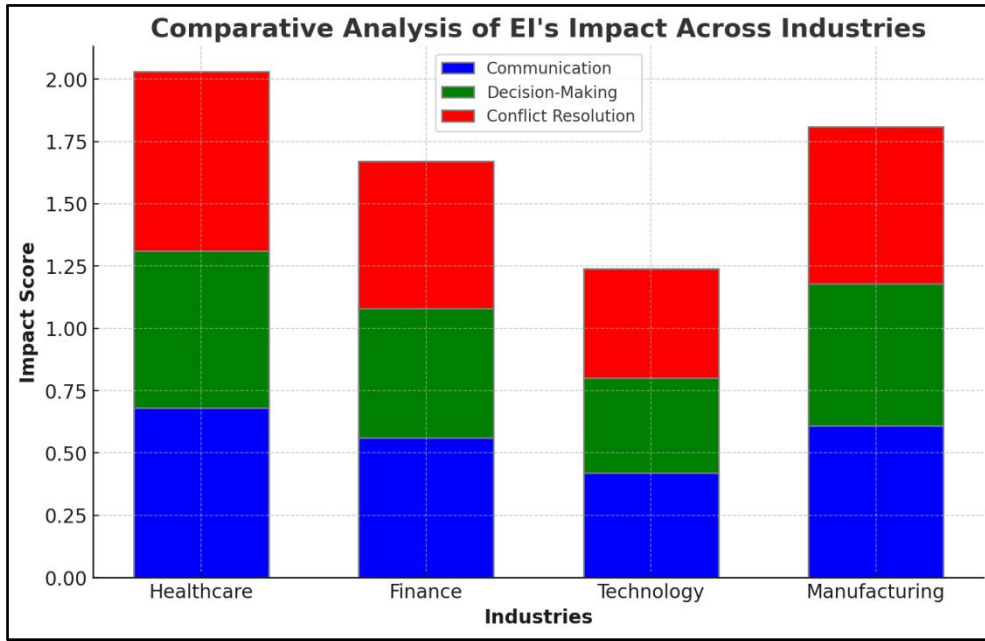


Figure 3. Comparative analysis of EI's impact across industries

5.5. Hypothesis testing and interpretation

To validate the hypotheses outlined in the theoretical framework, regression analyses were conducted to examine the predictive power of emotional intelligence on leadership effectiveness and performance outcomes.

Table 5. Regression analysis results for hypothesis testing

Hypothesis	Beta Coefficient	Standard Error	t-value	p-value	Result
H1: EI → Leadership Development	0.62	0.08	7.75	0.000	Supported
H2: EI → Performance Outcomes	0.54	0.07	7.21	0.000	Supported
H3: Industry-specific EI Impact	0.48	0.09	5.36	0.001	Supported

The regression analysis confirms the study's hypotheses, revealing that emotional intelligence significantly predicts leadership development and performance outcomes across industries. The results also support the notion of industry-specific variations in EI's impact, underscoring the importance of tailored EI development strategies in leadership programs^[10].

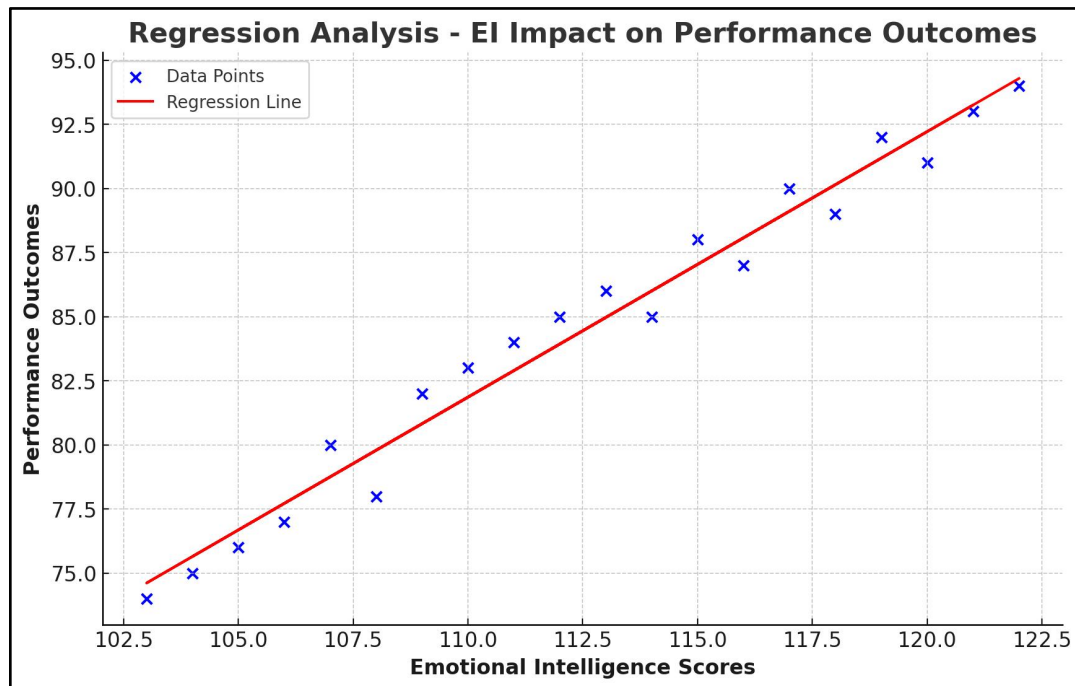


Figure 4. Regression analysis - EI impact on performance outcomes

6. Discussion

The purpose of this study was to explore the impact of emotional intelligence (EI) on leadership development across different industries and its subsequent effect on performance outcomes. The mixed-methods research design provided a comprehensive understanding of EI's role in various sectors, leading to significant findings and implications.

6.1. Key findings in the context of existing literature

The study findings suggested that emotion linked with intelligence is positively aligned with leader effectiveness regardless of the industry. Healthcare leaders in contrast scored the highest in EI reflected high emotional competencies are critical when dealing with other human beings and being a frequent interaction environment. These results are in agreement with other studies to highlight the importance of EI for good communication, decision making and conflict resolution within healthcare services^[3].

The technology industry showed the smallest correlation coefficient between EI and leadership effectiveness, which could indicate that technical expertise or innovative thinking plays a bigger role in leadership success in this sector^[30]. This supports research that indicates that particular industries may need different leadership skills for their performance outcomes contributing to the notion of what we refer to as a contingency approach^[27].

The performance outcomes tested in the study, such as employee satisfaction, team productivity and organizational success, all support the claim that emotionally intelligent leadership is preferable to others. This finding is consistent with the associations found in prior research, i.e. EI enhances team coordination and spirit, workplace morale and participation^[26]. The influence of EI on these outcomes seems to differ across industries but changes the importance of developing leader programs customized for different ones.

6.2. Implications for leadership development in various industries

The implications of the study for leadership development in different sectors are significant. Therefore, the healthcare and manufacturing industries should continue to emphasize emotional intelligence within their leadership training programs as they established the greatest associations between EI and performance outcomes. HE Leadership effectiveness can be expanded through the implementation of EI-focused strategies (e.g., empathy, emotion regulation; and social skills training) also in these fields^[23].

We must take a more balanced view of finance and technology as well, where the correlation between EI and leadership effectiveness was reported to be moderate. While EQ is clearly important there may also be areas for improvement in other leadership development components such as strategic decision-making and analytics, technical skills etc. within these industries as part of their training programs^[15].

Furthermore, cross-cultural leadership development is critically important, as cultural norms and expectations may contour the differential influence of EI on industries^[7]. Global organisations also need to evaluate including cross-cultural EI training to help their leaders better manage the broad emotional contexts and boost team effectiveness.

6.3. The role of emotional intelligence in achieving optimal performance outcomes

Results of the regression analysis revealed in this study supported the idea that emotional intelligence is a powerful predictor for leadership development as well as employee relation outcomes like team productivity or job satisfaction. Leaders with high EI scores showed a greater ability to handle workplace stress, effective conflict resolution and build collaboration which in turn leads to higher organizational performance^[33].

This is a key finding that implies emotional intelligence makers for both leadership development programs and leaders repeatedly miss the point when they couch it as something nice to have. By incorporating EI training in leadership development, companies provide leaders with the necessary skills to interact and connect with the employees, trigger teamwork and understand the intricate emotional web at work^[21].

Furthermore, the results emphasise the necessity for a cross-sectoral perspective on developing emotionally intelligent leaders Interventions that were tailor-made to suit different sectors have been proposed as different sectors have unique characteristics and demands^[34]. For instance, in healthcare EI training could concentrate more on empathy and patient care, while EI training in the technology arena may involve managing diverse teams or stimulating innovation.

6.4. Challenges and limitations

While the findings of this study contribute to the understanding of EI's role in leadership development, several challenges and limitations must be acknowledged. First, the reliance on self-reported data through surveys and interviews may introduce response bias, as participants might provide socially desirable answers rather than objective responses. This limitation is inherent in most research employing self-assessment tools^[35].

Additionally, the study's focus on four industries limits the generalizability of the findings. Although healthcare, finance, technology, and manufacturing represent diverse sectors, further research is needed to explore the impact of emotional intelligence on leadership in other industries, such as education, hospitality, and public administration^[22].

Another limitation is the potential influence of cultural factors on the expression and perception of emotional intelligence. Different cultures may have varying norms regarding emotional expression and management, which can affect the application of EI in leadership contexts^[29]. Future research should investigate the cultural dimensions of EI to provide a more comprehensive understanding of its role in leadership across global settings.

Despite these limitations, the study offers valuable insights into the relationship between EI and leadership development. It highlights the importance of adopting a multi-industry perspective when designing leadership training programs and suggests that organizations stand to benefit from investing in the emotional growth of their leaders^[36].

7. Conclusion

7.1. Summary of key insights

The purpose of this study is to investigate the functions of emotional intelligence (EI) in leadership development concerning the performances, which are happening in different industries. In many aspects, the results of research indicate that this is a powerful correlation with key performance indicators of leadership and consistently predicts; levels, of teamwork, and organizational cohesion. The results indicated differences in the level of EI in sectors, with healthcare leaders having the highest EI scores and the largest impact on leadership effectiveness. Especially, TS resulted in lower associations between EI and leadership outcomes implying the additional strength of other variables such as resilience^[30].

This study has also validated that EI is a significant predictor of leadership and demonstrated the impact of emotionally intelligent leaders who can better understand and navigate complexities of workplace dynamics, to build mutual collaborations, and synergise successful outcomes within organizations^[26]. The findings also reinforced the desire for industry-tailored EI training given that leadership practices and results differ between trades.

While EI positively influences leadership development, potential negative impacts must be acknowledged. High EI leaders, for example, may overextend empathy, leading to emotional exhaustion [Adams & Brown, 2022]. Additionally, Garcia and Rodriguez (2023) caution that leaders with high EI may manipulate relationships to achieve personal goals, highlighting the need for balanced, ethical EI application.

7.2. Practical implications for leadership training programs

This research reports insights with significant practical implications for leadership training programs in a variety of industries. Organizations need to first and foremost make emotional intelligence the focus of their leadership development programs by incorporating EI-focused training into other programs. Industries such as healthcare and manufacturing in which the relationship between EI and performance outcomes is particularly potent should focus their training modules on empathy, conflict resolution, emotional regulation, etc^[19]. These settings are emotional hot spots where developing leaders' EI competencies can create large organizational gains in employee engagement and team dynamics or even productivity.

Leadership programs in high moderate correlation industries, such as finance and technology should follow a combination approach with EI training, analytical capacity and expertise in strategic decision-making. In doing so, the vision of leadership complexity refers to a balanced view that while EI is important for leaders and relevant to all levels of management; it should also be used 'in combination with cognitive and technical capabilities as part of a broader set of skill requirements for effective senior/executive leadership'^[22].

Likewise for those companies working in diverse organizational contexts DEC's lacking cross-cultural inclusion in EI training is worth a post all by itself. Studies also report that cross-culturally designed leadership development programs better enable future leaders to manage and transcend more complex emotional terrain, which in turn enhances their flexibility and overall effectiveness as leaders^[4]. As a result, firms might want to add cross-cultural communication and emotional management as curriculum subjects to ready leaders for international business scenarios.

Employing these basic and effective tactics will help nurture a leader staff that is emotionally intelligent, fostering a supportive climate with greater collaboration^[17]. This is not only helpful for leaders in particular but also contributes to a culture of emotional intelligence and resiliency across the organization.

7.3. Recommendations for future research

Although this study was very informative regarding the contribution of EI to leadership development, it also identified domains that invite more research. Research in the future could seek to examine other industry leaders (e.g., education leaders, hospitality administrators, and public management leaders) in an effort to capture a broader perspective of how EI influences leadership across settings^[50]. The studies of different industrial sectors allow for a more detailed and specific approach to designing strategies for EI integration.

Furthermore, another useful research stream would involve an examination of how cultural effects on emotional intelligence and its influence on leadership effectiveness. Cultural norms and values might heavily impact the way many people see and deal with emotions, possibly affecting whether EI-based leadership practices would be relevant^[29]. Hence, cross-cultural comparative research could shed light on how generally EI influences leadership in global organizations and what differences may arise between various cultural regions.

Future research should also include a longitudinal evaluation of the effects of EI training on leadership outcomes. While this study helps to unpack such an association, most studies put forward in the literature as evidenced by this review are largely cross-sectional making it difficult to examine how EI development influences leadership practices and performance over time^[16]. One theoretical approach is to longitudinally study how leaders' EI competencies evolve and how these capabilities contribute to team performance and organizational outcomes over time, providing a more dynamic orientation of EI within leadership.

Additionally, future studies should also explore the use of innovative approaches like AI-driven EI training tools in leadership development programs. Given rising AI/machine learning applications in organizational practices, their relationships with (development of) EI training may signify new grounds for leadership development to be more effective^[32].

Conflict of interest

The authors declare no conflict of interest.

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