Assessing Emotional Intelligence among Employees in the Private Hospitality Sector: An Analytical Hierarchy Process (AHP) approach

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Abstract

The hospitality industry is rapidly evolving, with intense competition among organizations striving to attract and retain customers. One of the key factors influencing customer satisfaction and loyalty is the emotional intelligence of employees. Higher emotional intelligence fosters positive behavior, which enhances customer experience and engagement. This study aims to identify and prioritize the most critical factors and sub-factors of emotional intelligence in the private hospitality sector. Data for this research has been collected from hospitality businesses in the Lucknow region. The prioritization process is carried out using the Analytical Hierarchy Process (AHP), a widely used multi-criteria decision-making (MCDM) technique. The rankings derived from AHP provide valuable insights into the key attributes of emotional intelligence that employees should focus on for professional growth. By understanding these priorities, hospitality employees can enhance their emotional intelligence, leading to improved customer interactions, better teamwork, and overall organizational success.

Keywords: Emotional intelligence; Emotional intelligence attributes; Multi-criteria decision-making; Analytic Hierarchy Process (AHP); AHP for Emotional Intelligence; Sustainable Development Goals (SDGs); Prioritization of Emotional Intelligence Factors

1. Introduction

For Emotional, intelligence (EI) plays a crucial role in employee performance and customer satisfaction, particularly in the hospitality industry. According to Goleman (2013), EI is defined as the ability to understand and manage one's own emotions while also recognizing and influencing the emotions of others [1]. Studies have shown that emotions significantly affect human behavior due to physiological and psychological changes [2] Emotional intelligence enables individuals to control their emotions and understand those of others, thereby enhancing interpersonal interactions. Previous research indicates that EI positively influences employee performance [3]. It enhances creative problem-solving abilities and is closely associated with general intelligence. EI encompasses four key dimensions: identifying emotions, using emotions, understanding emotions, and regulating emotions [4]. These attributes play a vital role in personality development, conflict resolution, leadership, and understanding customer needs. This study aims to determine the weightages and prioritize the attributes of EI using the Analytical Hierarchy Process (AHP). Section II discusses the necessity and scope of prioritizing EI attributes, while Section III explains the use of AHP in assigning weightages.

1.1 Review of Literature and Hypothesis Development

Emotional intelligence is a multidimensional construct encompassing various attributes related to an individual's personality, qualities, and ability to comprehend others' emotions. Literature suggests that these attributes require classification based on their nature to enhance decision-making in the hospitality industry [2]. Experts in the private hospitality sector can rank these attributes using multi-criteria decision-making (MCDM) techniques, such as

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AHP, to improve EI and increase customer satisfaction [5].This study classifies the key attributes of EI into factors and sub-factors for prioritization. By ranking these attributes, the study aims to identify the most critical factors contributing to superior emotional intelligence and customer satisfaction.

1.2 Analytical Hierarchy Process (AHP)

AHP is a widely used MCDM technique that facilitates the comparison of multiple attributes to generate priorities and identify the most significant attributes [6] AHP, introduced by Saaty (1980), structures decision-making into a hierarchical framework that incorporates tangible and intangible criteria. The process relies on pairwise comparisons to establish a priority ranking of different attributes [7-8].Decisions in AHP are derived from a numerical ranking system or a vector of priorities that orders potential outcomes. The methodology allows for the aggregation of expert judgments to produce a single, coherent result. One advantage of AHP is its pairwise comparison matrix, which ensures consistency in decision-making. This approach simplifies the evaluation of complex attribute relationships [9-10].

1.3 AHP for Factors & Sub-Factors of Emotional Intelligence in the Private Sector

AHP calculates attribute priorities by structuring them into hierarchical levels. The process involves two key steps: hierarchy design and estimation. The design phase requires domain knowledge and experience, while the estimation phase involves pairwise comparisons for evaluation. AHP uses pairwise comparisons to derive weightages for EI attributes [11-12]. Based on the literature review, EI attributes are categorized into four factors, as presented in Table I. The geometric mean of these factors and their corresponding attributes is calculated to generate the final weightages. An online AHP solver was used to conduct pairwise comparisons and estimate priorities [13-15].

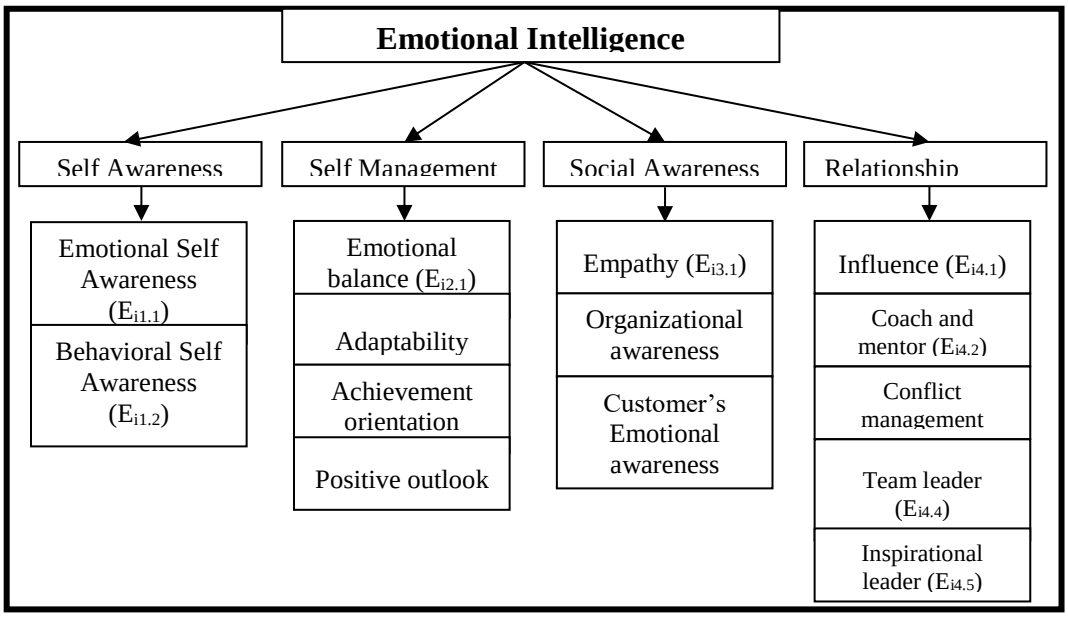

Figure 1. Emotional Intelligence Model (Source: Primary data)

Based on the extensive literature the following hypotheses have been framed which are as follows:

H1: The weightages of emotional intelligence factors and sub-factors significantly influence the overall emotional intelligence of employees in the private hospitality sector.

H2: Among the four emotional intelligence factors, self-awareness has the highest impact on overall emotional intelligence.

H3: Emotional balance is the most significant sub-factor influencing self-management in emotional intelligence.

H4: Empathy is the most crucial sub-factor affecting social awareness in emotional intelligence.

H5: Influence is the most dominant sub-factor in the relationship management dimension of emotional intelligence.

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2. Methodology

2.1 Procedure and Sampling

The data has been collected by the employees of the various private hotels in Lucknow using the standard questionnaire of analytical hierarchy process (AHP). By averaging the data as per satty's scale of 1 to 9, it is found that Self-awareness (Ei1) is between equal and moderately important on Self-management (Ei2) vale found is 2. On comparing Self-awareness (Ei1) with social awareness (Ei3) the value found is 4. By comparing Self-awareness (Ei1) with Relationship, management (Ei4) the value found is 3. In comparing the Self-management (Ei2) with social awareness (Ei3), the value found is 3. On comparison of Self-management (Ei2) with Relationship, management (Ei4) the value found is 3 and on comparing social awareness (Ei3) with Relationship management (Ei4) the value found is 2. These values have been put in the online AHP solver to find the comparison matrix and weightages of each factor. In a section, the four factors of Emotional Intelligence are calculated, and the output of the pair-wise comparisons is formed as shown in table 2. The weightages of all the factors were concluded after the formation of pair-wise matrix as present in table 3.

Table 1: Pair-Wise Comparison of Factors (E_i) For Private Sector

EI Factors (E_i)	**E_{i1}**	**E_{i2}**	**E_{i3}**	**E_{i4}**
Self-awareness (E_{i1})	1	2.00	4.00	3.00
Self-management (E_{i2})	0.50	1	3.00	3.00
Social awareness (E_{i3})	0.25	0.33	1	0.50
Relationship management (E_{i4})	0.33	0.33	2.00	1

Source: Primary data

H_1: The weightages of emotional intelligence factors and sub-factors significantly influence the overall emotional intelligence of employees in the private hospitality sector seen to significant [16]. The below given figure 2 shows the Weightages of the factors of Emotional Intelligence (E_i) in Graphical Form.

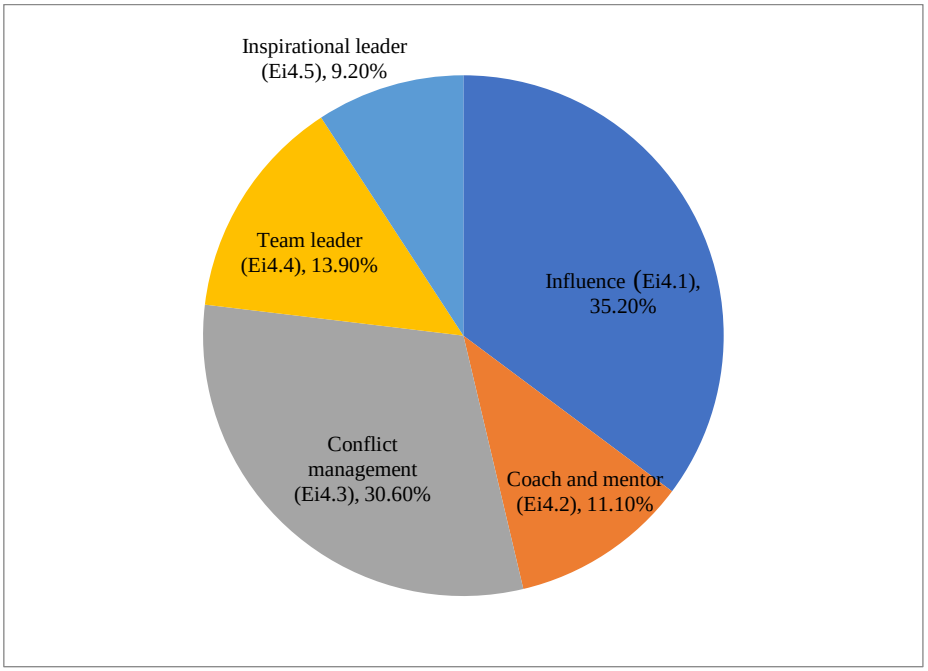

Figure 2. Weightages of the factors of emotional intelligence (E_i)

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Table 2 shows that, the factor of emotional intelligence, Self-awareness is ranked 1 with 45.90% weightage, among the four factors.

Table2: Priorities of the Factors of Emotional Intelligence (E_i)

EI Factors (E_i)	**Weightage**	**Percentage (%)**	**Rank**
Self-awareness (E_{i1})	0.4590	45.90%	1
Self-management (E_{i2})	0.3050	30.50%	2
Social awareness (E_{i3})	0.0930	9.30%	4
Relationship management (E_{i4})	0.1430	14.30%	3

Source: Primary data

H2: Among the four emotional intelligence factors, self-awareness has the highest impact on overall emotional intelligence seen to significant.

Similar method that was used for factor has been used here and found that comparing Behavioral Self-awareness (Ei1.2) with Emotional Self-awareness (Ei1.1) value found is 2. This value has been put in the online AHP solver to find the comparison matrix and waightages of each sub factor Ei_1.In this section the factor of emotional intelligence (E_{i1}) was calculated, and the output of the pair-wise comparisons is formed as shown in table IV. The weightages of all the factors were concluded after the formation of pair-wise matrix as present in table V.

Table 3: Pair-Wise Comparison of the Sub Factors of Emotional Intelligence (Attributes) (E_{i1})

EI Sub-Factors (E_{i1})	**$E_{i1.1}$**	**$E_{i1.2}$**
Emotional Self-awareness($E_{i1.1}$)	1	0.50
Behavioral Self-awareness($E_{i1.2}$)	2.00	1

Source: Primary data

Table V shows that, the sub factor of emotional intelligence Behavioural Self-awareness ($E_{i1.2}$) is ranked 1 with 66.70% weightage among all the sub factors. The below given figure 3 shows the Weightages of the sub factors (E_{i1}) in graphical form.

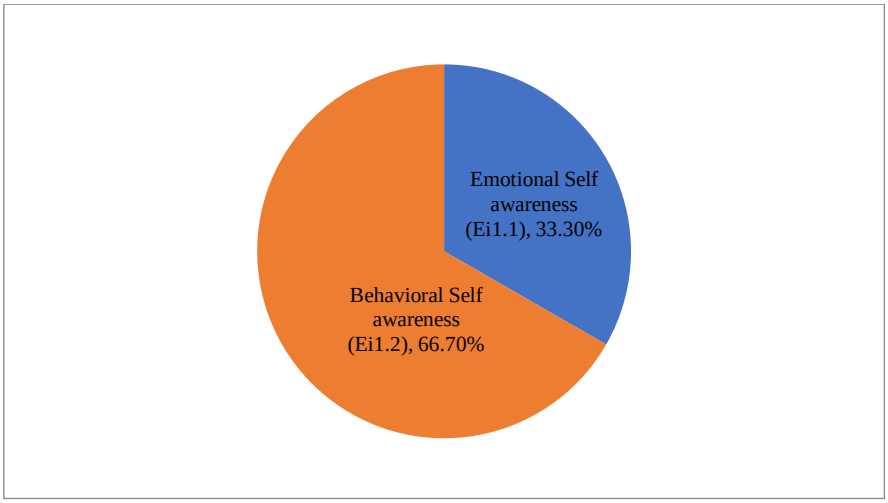

Figure 3. Representing the weightages of the sub factors of emotional intelligence (E_{i1}), for private sector in graphical form

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Table 4: Priorities of the sub factors (attributes) of emotional intelligence (e_{i1}),

EI Sub-Factors (E_{i1})	**Weightage**	**Percentage (%)**	**Rank**
Emotional Self-awareness ($E_{i1.1}$)	0.3330	33.30%	2
Behavioral Self-awareness ($E_{i1.2}$)	0.6670	66.70%	1

H2: Among the four emotional intelligence factors, self-awareness has the highest impact on overall emotional intelligence seen to significant.

2.2. AHP for sub factors Self-management (E_{i2}), for private sector Data Collection for sub factors Ei_2 of Emotional Intelligence for private sector

Similar method which was used for factor has been used here and found that comparing Emotional balance (Ei2.1) with Adaptability (Ei2.2) value found is 2. Comparing Emotional balance (Ei2.1) with Achievement orientation (Ei2.3) value found is 3. Comparing Emotional balance (Ei2.1) with Positive outlook (Ei2.4) value found is 2. Comparing Adaptability (Ei2.2) with Achievement orientation (Ei2.3) value found is 4. Comparing Adaptability (Ei2.2) with Positive outlook (Ei2.4) value found is 1 and on comparing Achievement orientation (Ei2.3) with Positive outlook (Ei2.4) value found is 1. These values has been put in the online AHP solver to find the comparison matrix and weightages of each sub factor Ei_2.In this section the factor of emotional intelligence (E_{i2}) was calculated, and the output of the pair-wise comparisons is formed as shown in table VI.

Table 5: Pair-wise comparison of the sub factors (attributes) of emotional intelligence (e_{i2}), for private sector.

EI Sub-Factors (E_{i2})	**$E_{i2.1}$**	**$E_{i2.2}$**	**$E_{i2.3}$**	**$E_{i2.4}$**
Emotional balance ($E_{i2.1}$)	1	2.00	3.00	2.00
Adaptability ($E_{i2.2}$)	0.50	1	4.00	1.00
Achievement orientation ($E_{i2.3}$)	0.33	0.25	1	1.00
Positive outlook ($E_{i2.4}$)	0.50	1.00	1.00	1

Table 5 shows that, the sub factor of emotional intelligence Emotional balance ($E_{i2.1}$) is ranked 1 with 40.90% weightage among all the sub factors. The below given figure 4 shows the Weightages of the sub factors (E_{i2}) in graphical form.

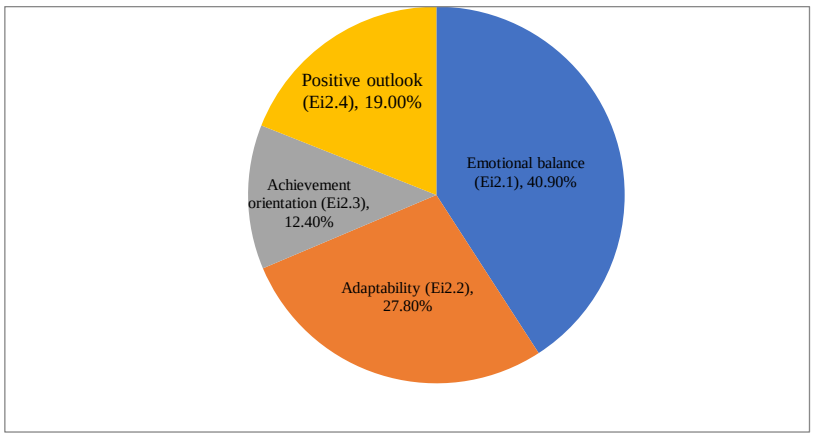

Figure 4. Representing the weightages of the sub factors of emotional intelligence (E_{i3}), for private sector in graphical form

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Table 6: Priorities of the sub factors (attributes) of emotional intelligence (e_{i2}),

EI Sub-Factors (E_{i2})	**Weightage**	**Percentage (%)**	**Rank**
Emotional balance ($E_{i2.1}$)	0.4090	40.90%	1
Adaptability ($E_{i2.2}$)	0.2780	27.80%	2
Achievement orientation ($E_{i2.3}$)	0.1240	12.40%	4
Positive outlook ($E_{i2.4}$)	0.1900	19.00%	3

H_3: Emotional balance is the most significant sub-factor influencing self-management in emotional intelligence seen to be significant.

2.3. AHP for sub factors Social awareness (E_{i3}), for private sectorData Collection for sub factors Ei_3 of Emotional Intelligence for private sector

Similar method, which was used, for factor has been used here and found that comparing Empathy (Ei3.1) with Organizational awareness (Ei3.2) the value found is 3. Comparing Empathy (Ei3.1) with Customer's Emotional awareness (Ei3.3) the value found is 1 and on comparing Organizational awareness (Ei3.2) with Customer's Emotional awareness (Ei3.3) the value found is 3. These values have been put in the online AHP solver to find the comparison matrix and weightages of each sub factor Ei_3.In this section the factor of emotional intelligence (E_{i3}) wascalculated, and the output of the pair-wise comparisons is formed as shown in table 7.

Table 7: Pair-wise comparison of the sub factors (attributes) of emotional intelligence (e_{i3})

EI Sub-Factors (E_{i3})	**$E_{i3.1}$**	**$E_{i3.2}$**	**$E_{i3.3}$**
Empathy ($E_{i3.1}$)	1	1.00	3.00
Organizational awareness ($E_{i3.2}$)	0.33	1	0.50
Customer's Emotional awareness ($E_{i3.3}$)	1.00	2.00	1

Table 7 shows that, the sub factor of emotional intelligence Empathy ($E_{i3.1}$) is ranked 1 with 44.30% weightage among all the sub factors. The below given figure 5 shows the Weightages of the sub factors (E_{i3}) in graphical form.

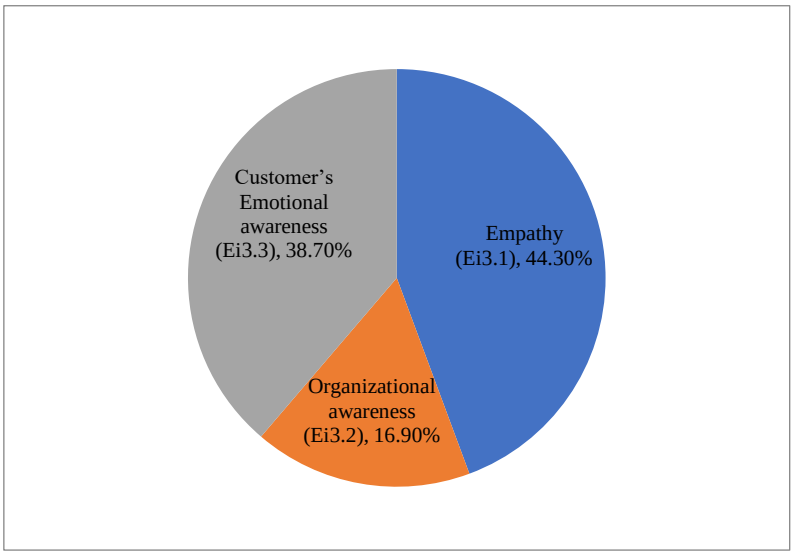

Figure 5. Representing the weightages of the sub factors of emotional intelligence (E_{i3}), for private sector in graphical form

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Table 8: Priorities of the sub factors (attributes) of emotional intelligence (e_{i3})

EI Sub-Factors (E_{i3})	**Weightage**	**Percentage (%)**	**Rank**
Empathy ($E_{i3.1}$)	0.4430	44.30%	1
Organizational awareness ($E_{i3.2}$)	0.1690	16.90%	3
Customer's Emotional awareness ($E_{i3.3}$)	0.3870	38.70%	2

H_4: Empathy is the most crucial sub-factor affecting social awareness in emotional intelligence seen to be significant.

2.4. AHP for sub factors Relationship management (E_{i4}) , for private sectorData Collection for sub factors Ei_4 of Emotional Intelligence for private sector

Similar method that was used for factor has been used here and found that comparing Influence (Ei4.1) with Coach and mentor (Ei4.2) the value found is 2. By comparing Influence (Ei4.1) with Conflict, management (Ei4.3) the value found is 1. By comparing Influence (Ei4.1) with Team leader (Ei4.4) the value found is 3. By comparing Influence (Ei4.1) with Inspirational leader (Ei4.5) the value found is 4. By comparing Coach and mentor (Ei4.2) with Conflict, management (Ei4.3) the value found is 3. By comparing Coach and mentor (Ei4.2) with Team leader (Ei4.4) the value found is 1. By comparing Coach and mentor (Ei4.2) with Inspirational leader (Ei4.5) the value found is 1. By comparing Conflict, management (Ei4.3) with Team leader (Ei4.4) the value found is 2. By comparing Conflict, management (Ei4.3) with Inspirational leader (Ei4.5) the value found is 3. By comparing Team leader (Ei4.4) with Inspirational leader (Ei4.5) the value found is 2. These values have been put in the online AHP solver to find the comparison matrix and weightages of each sub factor Ei_4.In this section the factor of emotional intelligence (E_{i4}) was calculated, and the output of the pair-wise comparisons is formed as shown in table 9.

Table 9: Pair-wise comparison of the sub factors (attributes) of emotional intelligence (e_{i4})

EI Sub-Factors (E_{i4})	**$E_{i4.1}$**	**$E_{i4.2}$**	**$E_{i4.3}$**	**$E_{i4.4}$**	**$E_{i4.5}$**
Influence ($E_{i4.1}$)	1	3.00	1.00	3.00	4.00
Coach and mentor ($E_{i4.2}$)	0.33	1	0.33	1.00	1.00
Conflict management ($E_{i4.3}$)	1.00	3.00	1	2.00	3.00
Team leader ($E_{i4.4}$)	0.33	1.00	0.50	1	2.00
Inspirational leader ($E_{i4.5}$)	0.25	1.00	0.33	0.50	1

Table 9 shows that, the sub factor of emotional intelligence Influence ($E_{i4.1}$) is ranked 1 with 35.20% weightage among all the sub factors. The below given figure 6 shows the Weightages of the sub factors (E_{i4}) in graphical form.

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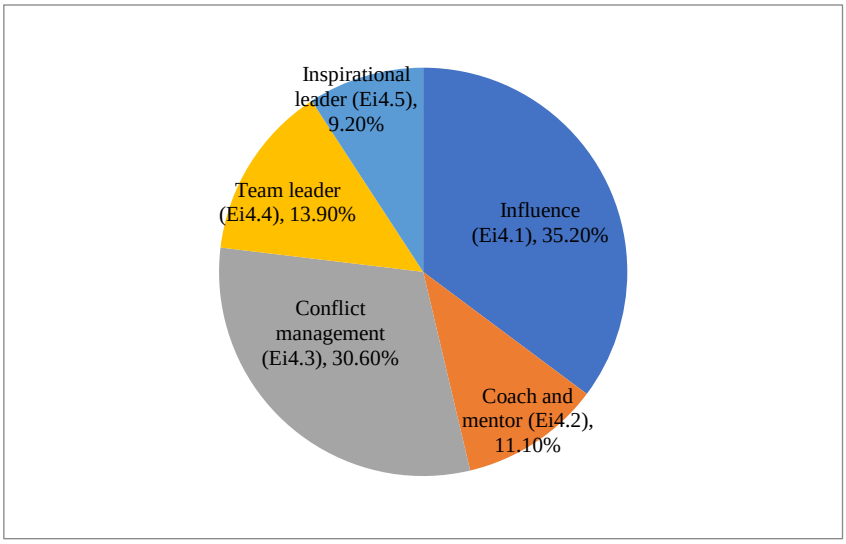

Figure 6. Representing the weightages of the sub factors of emotional intelligence (E_{i4}), for private sector in graphical form

Table 10: Priorities of the sub factors (attributes) of emotional intelligence (e_{i4})

EI Sub-Factors (E_{i4})	**Weightage**	**Percentage (%)**	**Rank**
Influence ($E_{i4.1}$)	0.3520	35.20%	1
Coach and mentor ($E_{i4.2}$)	0.1110	11.10%	4
Conflict management ($E_{i4.3}$)	0.3060	30.60%	2
Team leader ($E_{i4.4}$)	0.1390	13.90%	3
Inspirational leader ($E_{i4.5}$)	0.0920	9.20%	5

H5: Influence is the most dominant sub-factor in the relationship management dimension of emotional intelligence seen to be significant.

3. Findings

The weightages of factors and sub-factors (attributes) of emotional intelligence, shown in the results provide an opportunity to evolve and establish answers to achieve different objectives for the improvement of emotional intelligence of the employees of hospitality industry in private sector [17-19]. The present work provides the weights and priorities of identified factors and sub-factors of emotional intelligence that are present in table 1. The priorities established in this work would be helpful in the process of identification of most suitable and important factors and sub-factors (attributes) for the improvement of emotional intelligence. The value of their comparison is used as input for analytic hierarchy process and the established priorities are present in Table III, IV, VII, IX and XI, they are graphically represented in Figure 1, 2, 3, 4 & 5. The final priorities of identified factors and sub-factors (attributes) of emotional intelligence were calculated in the last phase of the suggested method. The outcome of the process shows that, among the four factors of emotional intelligence, self-awareness has the highest priority that is 45.90% (Fig. 1). This shows that self-awareness has a immense effect on emotional intelligence. Among the emotional intelligence factor (Ei1) the sub-factor (attribute) Behavioral Self-awareness has the highest priority with 66.70% (Fig. 2). This demonstrates that in the emotional intelligence-factor self-awareness, the most important emotional intelligence attribute is Behavioral Self-awareness. In the emotional intelligence (Ei2) the sub-factor (attribute) the emotional balance has the highest priority with 40.90% (Fig. 3). This demonstrates that in the emotional intelligence -factor self-management, the most important emotional intelligence attribute is emotional balance. In the emotional intelligence (Ei3) the sub-factor (attribute) the empathy has the highest priority with 44.30% (Fig. 4). This demonstrates that in the emotional intelligence -factor social awareness, the most important emotional intelligence attribute is empathy. At the last, among the emotional intelligence factor (Ei4) the sub-factor (attribute) the influence has the highest priority with 35.20%. This demonstrates that in the emotional intelligence -factor relationship management, the most important emotional intelligence attribute is influence (Fig. 5).

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4. Discussion and conclusion

To achieve new heights and improved service quality, the enhancement in the emotional intelligence level of employees in the private sector is required for the continuous progress in this field. Among the others, this study reveals some of the very important attributes of emotional intelligence that can provide accurate and better results to improve the level of emotional intelligence. In the present work, AHP technique is used which very famous among the MCDM techniques present, for allocating priorities for different factors and sub-factors (attributes) of emotional intelligence. To see the probable results and influences, the organizations may determine the priorities of the factors and sub-factors (attributes) of emotional intelligence and can use this technique as per their work environment.

5. Limitations and Future Research Directions

The AHP method relies on expert judgment for assigning weightages to emotional intelligence (EI) factors and sub-factors. This subjectivity may introduce bias in prioritization. The findings are specific to the private hospitality sector and may not be directly applicable to other industries or public-sector hospitality organizations. Emotional intelligence is dynamic and can change over time with training and experience. The study provides a snapshot of EI at a given time but does not account for its evolution. Future research should examine how emotional intelligence evolves over time and how interventions like training programs can enhance specific EI attributes. Expanding the research to other industries, such as healthcare, retail, or IT, could provide a broader understanding of how EI factors differ across sectors. AI-driven models could be explored to reduce subjectivity in AHP weight assignments and enhance the accuracy of EI assessments. Future studies can explore the direct relationship between prioritized EI factors and key performance indicators such as customer satisfaction, employee retention, and profitability. Combining AHP with other multi-criteria decision-making (MCDM) methods, such as the Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) or fuzzy AHP could improve robustness in EI factor prioritization.

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