Emotional Intelligence: Historical Development, Theoretical Models, and Assessment Approaches

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Abstract
Emotional Intelligence (EI) has emerged as a critical construct in understanding human behaviour and enhancing personal and professional outcomes. This paper provides a comprehensive review of the historical development, theoretical models, and assessment approaches of EI, exploring its significance and practical applications across various domains. Tracing its evolution from early concepts of social intelligence introduced by Edward Thorndike to contemporary models developed by scholars such as Salovey and Mayer, Goleman, and Bar-On, the paper analyses the strengths and limitations of the ability, mixed, and trait-based frameworks of EI. Furthermore, the study examines the diverse methods used to assess EI, including performance-based tests, self-report measures, and 360-degree evaluations, highlighting their reliability and cross-cultural applicability. The findings underscore that EI is instrumental in fostering leadership effectiveness, improving workplace dynamics, enhancing academic success, and promoting mental well-being. In professional settings, EI contributes to better decision-making, conflict resolution, and team collaboration, while in education, it facilitates resilience, emotional regulation, and academic engagement. Despite its growing importance, challenges remain in standardising EI assessment and integrating a unified theoretical framework. By synthesising theoretical perspectives and measurement approaches, this review contributes to a deeper understanding of EI and provides a framework for its practical implementation in diverse contexts.
Keywords: Emotional Competence, Emotional Intelligence, Evolution of Emotional Intelligence, Emotional Intelligence Models and Theories, Emotional Intelligence Measures

Introduction
Emotional Intelligence (EI) has emerged as a cornerstone concept in understanding human behaviour, transcending traditional measures of intelligence and focusing on the interplay between emotions and cognitive abilities. First introduced in the 1990s by Salovey and Mayer, EI addresses an essential aspect of human functioning: the ability to perceive, regulate, and utilise emotions effectively. Unlike general intelligence, which focuses on problem-solving and logical reasoning, EI captures the emotional dimension that underpins interpersonal relationships, self-awareness, and decision-making.

The importance of EI is huge, especially in today's world, where people face many emotional and social challenges in both their personal and work lives. Modern workplaces demand more than technical expertise, requiring individuals to navigate complex social dynamics, build collaborative teams, and manage stress effectively. EI equips individuals with the skills needed to adapt to these challenges, enabling them to lead with empathy, communicate persuasively, and foster positive relationships. Similarly, in educational settings, EI has been shown to improve student engagement (Zhoc, King, Chung, and Chen, 2020), academic performance (Afifi, Shehata, and Mahrousabdalaziz, 2016), and resilience (Ibrahim and Abdelgafour, 2022), underscoring its critical role in fostering holistic development.

Studying EI is not only necessary but also timely, given the increasing complexity of today's social and organisational environments. The rise of globalisation, diverse workforces, and technological advancements has made interpersonal skills and emotional competencies more relevant than ever. This study seeks to provide a comprehensive understanding of EI by tracing its historical development, exploring its theoretical models, and reviewing its assessment approaches. Such an exploration is essential for identifying gaps in current knowledge and expanding the theoretical framework of EI to encompass its applications in diverse fields.

The utility of EI extends across multiple domains, benefiting a wide range of stakeholders. For organisational leaders, EI serves as a tool for enhancing team dynamics, improving decision-making, and fostering a positive workplace culture (Bahshwan, 2024). Human resource professionals can leverage EI assessments for talent acquisition, leadership development, and conflict resolution. In educational contexts, teachers and administrators can use EI to cultivate emotionally resilient students who are better equipped to manage stress and achieve their academic and personal goals. Additionally, psychologists and mental health professionals can apply EI frameworks to develop interventions that promote emotional regulation and mental well-being. By emphasising the theoretical and practical implications of EI, this study aims to bridge the gap between research and application. It highlights how understanding and measuring EI can address real-world challenges, from improving individual well-being to enhancing organisational effectiveness. This paper also seeks to showcase the potential of EI in creating emotionally intelligent societies that thrive in the face of adversity and change.

Problem Statement
In an era where emotional and social competencies are increasingly valued alongside cognitive intelligence, the study of emotional intelligence (EI) has emerged as a key area of research. While the significance of EI is widely acknowledged, critical challenges remain in its conceptualisation, measurement, and application. The lack of a unified theoretical framework has led to divergent interpretations, resulting in inconsistencies in how EI is defined, assessed, and applied across disciplines. Existing models—such as Mayer and Salovey's ability model, Goleman's mixed model, and Bar-On's emotional-social intelligence model—offer unique perspectives but also contribute to conceptual fragmentation, making it difficult to standardise EI assessments.

Moreover, the utility of EI is often debated due to methodological concerns surrounding its measurement tools. Some EI assessments rely on self-report measures, which are susceptible to social desirability bias, while others employ performance-based evaluations that may not

fully capture the complexities of emotional competence. These inconsistencies raise questions about the validity and reliability of EI as a measurable construct, particularly in cross-cultural contexts where emotional expression and regulation vary significantly.

Beyond theoretical and methodological challenges, there is a growing need to establish the practical significance of EI in different domains. While existing research highlights the benefits of EI in leadership, workplace productivity, education, and healthcare, there remains a gap in translating these findings into actionable strategies for individuals and organisations. Many industries acknowledge the importance of emotional competence, yet structured interventions and policies integrating EI training and assessment are still limited (Akanle, 2024).

Given these challenges, this study aims to address the following research questions:
  I.   How has EI evolved as a theoretical construct over time?
 II.   What are the strengths and limitations of existing EI models and measurement tools?
III.   How can EI be effectively integrated into various professional and academic settings to maximise its impact?

By critically examining the historical development, theoretical underpinnings, and assessment approaches of EI, this paper seeks to bridge the gap between research and application. The findings will provide valuable insights for psychologists, educators, business leaders, and policymakers, enabling them to leverage EI as a tool for fostering emotional resilience, enhancing workplace dynamics, and promoting societal well-being.

Definition of Emotional Intelligence
The term "emotional intelligence" (EI) combines two distinct concepts: emotion and intelligence.

Emotion
The term emotion is defined as
> *"An awareness of four elements that we usually experience at the same time: (a) appraisals of a situation, (b) changes in bodily sensations, (c) the free or inhibited display of expressive gesture, and (d) a cultural label applied to specific constellations of the first three elements".*
>
> (Hochschild, 1990: 118-119).

Intelligence
The term intelligence is defined as
> *"The aggregate or global capacity of the individual to act purposely, to think rationally, and to deal effectively with his environment".*
>
> (Wechsler, 1939: 3; cited in Zachary, 1990).

Emotional Intelligence
According to Figure 1, EI is closely related to the concepts of emotion and intelligence. For example, intelligence involves the ability to understand information, whereas emotion is a coordinated response to the environment. EI is the ability to reason about emotions, as well as the capacity to use feelings, emotions, and emotional information to assist reasoning (Mayer et al., 2008).
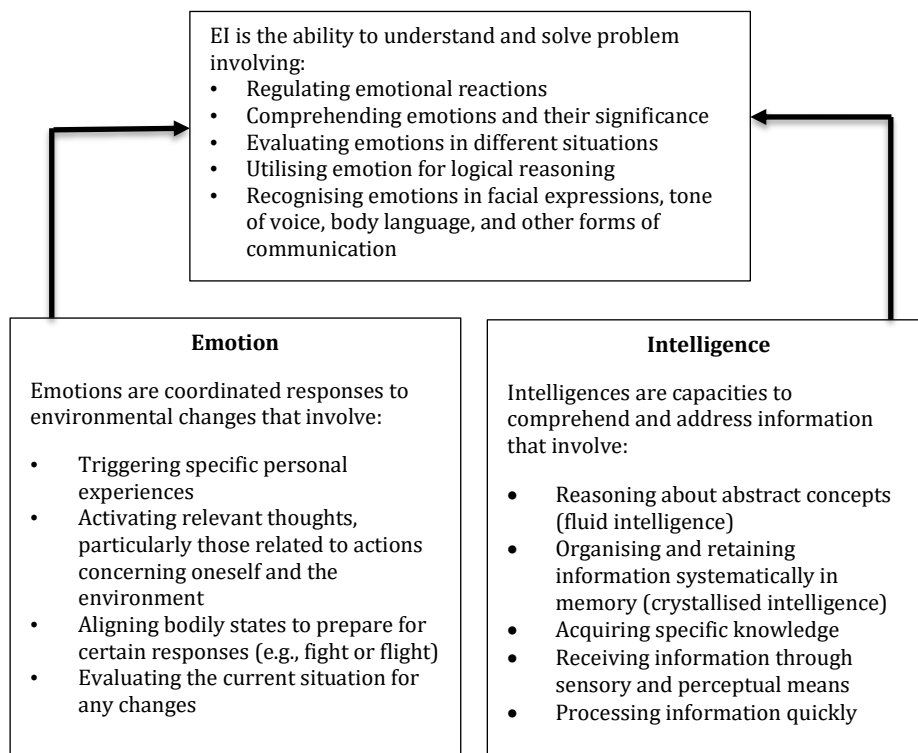
Figure 1: The scope of emotional intelligence (Adopted from Mayer et al., 2008)

The Growth of Emotional Intelligence

The concept of emotional intelligence (EI) has roots that go back nearly a century. In 1920, Edward Thorndike laid some of the groundwork by introducing the idea of "social intelligence" (Bar-On, 2006; Gardner, 1983). He defined it as the ability to understand and manage people in a way that fosters effective human relations (Thorndike, 1920). Despite its significance, Thorndike's model did not gain much traction initially, and research on the topic waned for several decades (Landy, 2005).

In the 1940s, David Wechsler expanded on the idea by acknowledging the role of non-cognitive factors in intelligent behaviour, suggesting that these elements needed further exploration to fully understand intelligence (Bar-On, 2006). Fast forward to 1983, Howard Gardner proposed his theory of multiple intelligences, identifying seven types, including interpersonal and intrapersonal intelligence (Gardner, 1983). He argued that these forms of intelligence, crucial for understanding and managing emotions in oneself and others, are as vital as the cognitive abilities measured by traditional IQ tests (Petrides, 2011).

The term "emotional intelligence" was first formally introduced in a 1985 PhD thesis by Wayne Leon Payne, who described it as an ability involving a creative relationship with emotions such as fear, pain, and desire (Payne, 1985, cited in Petrides and Furnham, 2001). Around the same time, Reuven Bar-On developed the Emotional Quotient Inventory (EQ-i) as part of his doctoral work in 1987, emphasizing the multidimensional nature of EI (Bar-On, 1997; Bar-On, 2006).

In the early 1990s, Peter Salovey and John Mayer published a series of articles further defining and expanding the concept of EI. They sought to distinguish social intelligence from general intelligence and described EI as the ability to accurately perceive, appraise, and express emotions; access and generate feelings that facilitate thought; understand emotions and emotional knowledge; and regulate emotions to promote emotional and intellectual growth (Mayer and Salovey, 1997).

Daniel Goleman brought EI into the mainstream with his 1995 book, "Emotional Intelligence: Why It Can Matter More Than IQ." He highlighted the importance of recognizing and managing our own emotions and those of others, arguing that EI plays a crucial role in personal and professional success (Goleman, 1995).

Finally, Petrides and Furnham developed the trait EI model in 2000. They distinguished between trait EI (or trait emotional self-efficacy), which involves self-perceived emotional abilities, and ability EI (or cognitive-emotional ability), which involves actual emotional skills assessed through performance tests. These constructs, they argued, should be examined within the frameworks of personality and cognitive ability hierarchies, respectively (Petrides and Furnham, 2000, 2001).
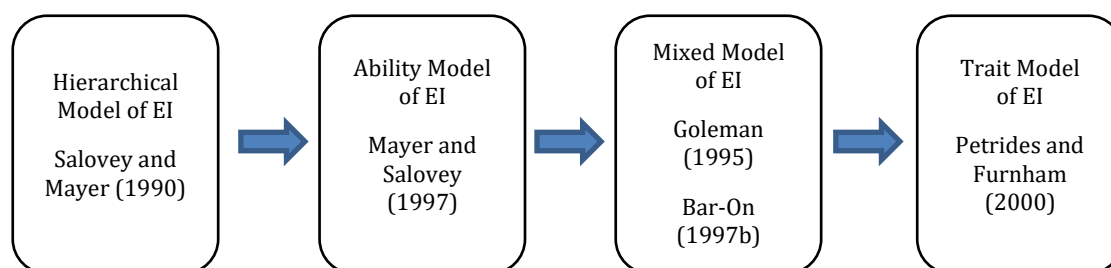

Figure 2: Emotional intelligence theory development

Despite some researchers critiquing the theory of EI (Daus and Ashkanasy, 2003; Locke, 2005; Matthews et al., 2006; O'Connor et al., 2019), there are numerous reasons explaining the widespread adoption of EI in the business realm. Many scholars back and confirm the significance of EI in achieving individual and workplace success (Joseph and Newman, 2010; Urquijo, Extremera, and Azanza, 2019). Furthermore, EI is crucial for fostering increased morale, cooperation, teamwork, motivation, and a positive work environment (Arfara and Samanta, 2016; Makkar and Basu, 2017; Perry and Clough, 2017; Rezvani, Barrett, and Khosravi, 2019; Trigueros et al., 2019). Therefore, the capacity to effectively collaborate with colleagues and manage one's own emotions has become vital not only for personal life but also for organizational success. Therefore, EI turns into an acceptable and appropriate theory in organization and education Table 1 provides a summary of the historical development of EI.

Table 1
History of Emotional Intelligence

Date	Author	Description
1930s	Edward Thorndike	Social intelligence - the ability to get along with other people.
1940s	David Wechsler	Described the influence of non-intellective factors on intelligent behaviour which was yet another reference to this construct.
1983	Howard Gardner	Introduces the concept of multiple intelligences in his book *Frames of Mind.*
1985	Wayne Payne	Introduces the term 'emotional intelligence' in his doctoral dissertation entitled *A Study of Emotion: Developing Emotional Intelligence, Self-integration, Relating to Fear, Pain, and Desire.*
1987	Reuven Bar-On	Use the term 'emotional quotient' (EQ) in the unpublished version of his graduate thesis.
1990	Peter Salovey and John Mayer	Publish their landmark article, 'Emotional Intelligence', in the *Journal of Imagination, Cognition, and Personality.*
1995	Daniel Goleman	Popularizes the concept of emotional intelligence in his book *Emotional Intelligence: Why It Matters More Than IQ.*
2000	K.V. Petrides and Adrian Furnham	The trait model of EI was introduced to address the differentiation between ability EI and trait EI.

Emotional Intelligence Models
EI is a research area that has seen some arguments. The psychological construct of EI is associated with competing concepts. There is no unified theory of EI. There are many models and theories of EI. However, only the four most prominent and commonly used theories have been described in the following sections.
1. Ability model of EI (Mayer and Salovey, 1997)
2. Emotional competencies model (Goleman, 1995)
3. Bar-On's emotional-social intelligence model (Bar-On, 1997b)
4. Trait model of EI (Petrides and Furnham, 2000)

These four genres can be categorized into three established scientific concepts of EI: (a) the ability model, (b) the mixed model, and (c) the trait model. Mayer and Salovey's model is classified under ability EI, Goleman's and Bar-On's models fall under mixed EI, and Petrides and Furnham's model is classified as trait EI. Each framework represents a distinct conceptual approach to understanding EI, rather than differing methods of measuring the same concept.

The ability model views EI as a type of traditional intelligence composed of a set of skills that merge emotions with cognition (Mayer, Salovey, and Caruso, 2008). Mayer and Salovey (1990) clearly differentiate ability EI from personality traits. Petrides (2009) conceptualizes the ability EI perspective as a constellation of cognitive-emotional abilities within the frameworks of human intelligence. This model describes EI as a broad intelligence involving capabilities to process emotion-related information (Mayer, Caruso, and Salovey, 2016; Salovey and Mayer, 1990). Essentially, ability EI is seen as a mental capability that aids in reasoning about and using emotions to enhance thinking, without considering other personal dispositions beyond intelligence and emotions.

Mixed models of EI, proposed by other scholars, incorporate non-cognitive components such as motivations, socio-affective competencies, and empathy (Bar-On, 2006). The ability model places EI within the taxonomy of general intelligence applied to emotions, whereas mixed-model approaches broaden the definition of EI to include various emotion-relevant dimensions (Mayer, Caruso, and Salovey, 2016). Generally, these measurements are self-reported, although some utilize 360-degree assessments that combine self-reports with multiple peer reports from supervisors, colleagues, and subordinates (Bar-On, 1997b).

The trait model of EI recognizes the inherent subjectivity of emotional experiences. It is not tied to specific proprietary tests, but instead offers a platform for interpreting data from any questionnaire of EI or related constructs. Trait EI theory can be extended to related areas such as social intelligence and is not confined to a single, unique model (Petrides, 2010).

The Ability Model of Emotional Intelligence (Mayer and Salovey, 1997)
Salovey and Mayer first introduced the EI ability model. They define EI as "the ability to monitor one's own and others' feelings and emotions, to discriminate among them, and to use this information to guide one's thinking and actions" (Salovey and Mayer, 1990, p. 189). They further stated that mental processes related to EI are "appraising and expressing emotions in the self and others, regulating emotion in the self and others, and utilization of emotions in adaptive ways" (p. 190). The conceptualization of their EI ability model is shown in Figure 3.
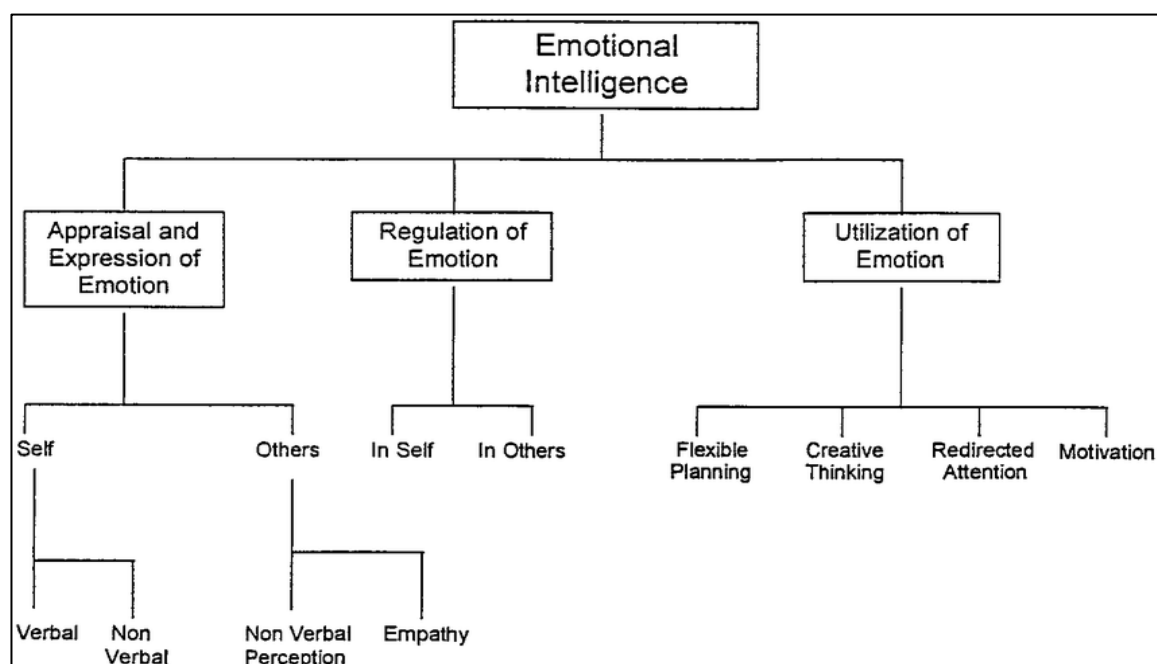

Figure 3: Conceptualization of EI ability model (Adopted from Salovey and Mayer, 1990)

As stated by Salovey and Mayer (1990), the drawback of this model was that it had overlooked thinking about emotion. Therefore, the model was revised, and Mayer and Salovey (1997) presented a Four-Branch Model of EI, which is conceptually arranged from more basic psychological processes to higher psychologically integrated processes. Mayer and Salovey (1997) developed a model that described EI as the ability to (1) perceive emotions (mood

attention), (2) use emotions to facilitate thought (emotional facilitation), (3) understand emotions (emotional clarity), and (4) regulate emotions (mood repair).

The first branch of the model measures the ability to perceive or identify emotions accurately. The p*erceiving emotions* branch comprises items that require the respondent to identify how much of a particular emotion (happiness, sadness, fear, anger, surprise, disgust, excitement) is expressed in a picture of a face, a natural landscape, or a colour pattern (Papadogiannis, Logan and Sitarenios, 2009). These capabilities might lead to the competency to recognize and notice even the slightest changes in a person's facial expression (Mayer and Salovey, 1997). The second branch is *using emotions to facilitate thinking*. This branch requires the ability to mobilize the appropriate emotions and feelings to assist in certain cognitive activities such as reasoning, problem-solving, and decision-making (Mayer and Salovey, 1997). An individual with a high level of skill in using emotions may easily connect with others because of insight gathered from analyzing emotional and mood content (Papadogiannis, Logan and Sitarenios, 2009). This insight may increase the effectiveness in areas such as creative thinking, problem-solving, and group leadership.

The third branch, to *understand and reason emotions*, is the ability to understand complex emotions and the ability to identify transitions from one emotion to another such as the transition from anger to satisfaction or from anger to shame (Mayer and Salovey, 1997). The ability to understand the subtle differences of the vast array of emotions that are ever-present in one's daily communications can facilitate not only one's interpersonal relationships but also the level of their personal and professional performance. Lastly, the fourth branch is the capability to *manage and regulate one's emotions*. It is the ability to understand and use his or her own emotions effectively. This branch is examined through items addressing the individual's ability to maintain emotions (preserving a good mood), repair emotions (calming down after feeling angry), and generate emotions appropriate for a given situation (motivating and supporting a coworker before an important oral presentation) (Papadogiannis, Logan and Sitarenios, 2009). Such ability would entail the capacity to maintain, shift, and cater to emotional responses, either positive or negative, to a given situation (Rivers et al., 2007).

These four branches are in a chain of command, in which, every level integrates and constructs the competence of the earlier competence. To understand how the branches integrate, Figure 4 below shows the four branches of EI as proposed by Mayer and Salovey (1997). These skills are arranged hierarchically so that perceptual emotion has a key role in facilitating thinking, understanding emotions, and managing emotions. These branches arise from higher-order basic skills, which evolve as a person matures (Drigas and Papoutsi, 2018).
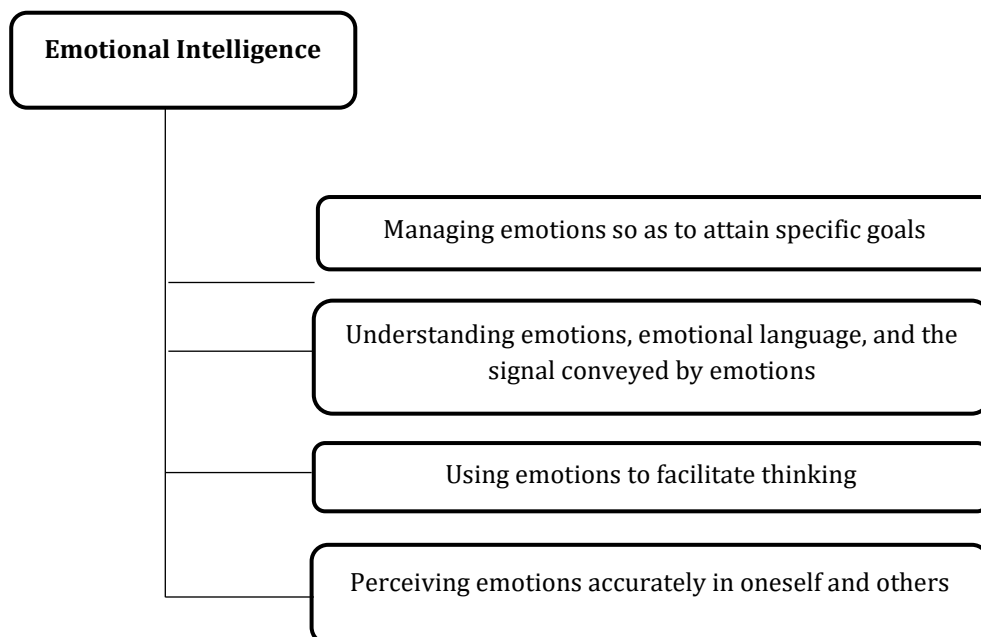
Figure 4: The four-branch model of emotional intelligence (Adopted from Mayer and Salover, 1997)

Compared to the two theoretical approaches by these two researchers in 1990 and 1997, the theoretical approach proposed in 1997 is the most accepted proposal (Geher, 2004). Salovey and Mayer's (1990) ability model was based on the belief that EI is a cognitive ability, that combines both mental abilities and personality traits. However, in their updated model, they removed personality traits and focused solely on mental abilities. Their improved definition of EI is as below:

> "The ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth".

> (Mayer and Salovey, 1997: 10)

Moreover, Mayer and Salovey (1997) categorize EI as a set of skills and abilities that can be learned and developed over time. Mayer and Salovey's mental ability model is the theoretical approach that has generated the most significant number of research published in peer-reviewed journals (Geher, 2004; Matthews, Zeidner and Roberts, 2002). The interest of the scientific community in this model is based on several reasons:
1. The solid and justified theoretical base,
2. The novelty of the measurement compared to other approaches, and
3. Its systematic evaluation and support by empirical data obtained from basic and applied fields.

Moreover, the ability theory proposed by Mayer and Salovey is regarded as a genuine approach to the study of intelligence that could add interesting contributions to the emotional individual differences field (Matthews, Zeidner and Roberts, 2002).

The Emotional Competencies Mixed Model (Goleman, 1995)
Goleman considered that EI is based on both cognitive ability and personality traits. He defined EI as a universal ability that every normal person has and a quantifiable dimension that embodies individual differences (Goleman, 1995). In his first book, Goleman stated that EI comprises five dimensions with twenty-five EI competencies: (1) knowing one's emotions; (2) managing emotions; (3) motivating oneself; (4) recognizing emotions in others, and (5) handling relationships. In 1998, Goleman improved his model and proposed the concept of emotional competencies, which he defines as "an ability to recognize, understand and use emotional information about oneself or others that leads to or causes effective or superior performance" (Goleman, 1998). Goleman introduced the Emotional Competence Framework, which grouped EI competencies into two major categories: Personal Competencies and Social Competencies. The framework contains four essential dimensions, which are subdivided into 20 competencies, as shown in Table 2 Goleman (1998) defines his four dimensions as follows:

1. *Self-awareness* is the ability to read one's emotions and recognize their impact while using gut feelings to guide decisions.
2. *Self-management* involves controlling one's emotions and impulses and adapting to changing circumstances.
3. *Social awareness* includes the ability to sense, understand, and react to other's emotions while comprehending social networks.
4. *Relationship management* is the ability to inspire, influence, and develop others while managing conflict.

Following Goleman, emotional competencies are not innate talents but rather learned capabilities that must be worked on and developed to achieve outstanding performance (Goleman, 1995). The organization of the competencies under the various constructs is not random; they appear in synergistic clusters or groupings that support and facilitate each other (Boyatzis, Goleman and Rhee, 2000).

Table 2
Goleman's (1998) competencies model of EI (Adopted from Cherniss and Goleman, 2001)

Category	Personal Competencies (Self)	Social Competencies (Others)
Recognition	Self-Awareness (It includes three sub-competencies) • Emotional self-awareness • Accurate self-assessment • Self-confidence	Social Awareness (It includes three sub-competencies) • Empathy • Service orientation • Organisational Awareness
Regulation	Self-Management (It includes six sub-competencies • Emotional self-control • Trustworthiness • Conscientiousness • Adaptability • Achievement drive • Initiative	Relationship Management (It includes eight sub-competencies) • Developing others • Influence • Communication • Conflict management • Visionary leadership • Catalysing change • Building bonds • Teamwork and collaboration

The competencies are very similar to and partially derived from the abilities presented by Mayer and Salovey (1997), which shows that there is an overlap between the two models. Goleman's (1995) self-awareness, social awareness, and empathy mimic Mayer and Salovey's (1997) ability to perceive and understand emotions. Similarly, Goleman's (1995) self-management competency is quite similar to Mayer and Salovey's (1997) ability to manage emotions.

The Emotional-Social Intelligence Mixed Model (Bar-On, 1997)
The EI model proposed by Bar-On is a mixed model of EI. In 1997, Bar-On published the first peer-reviewed self-report measure of emotionally and socially intelligent behavior, the Emotional Quotient Inventory (EQ-i) (Bar-On, 1997b). Based on the EQ-i, Bar-On then developed his version of the mixed model of EI, which he named Emotional Social Intelligence (Bar-On, 2006). Influenced by Darwin's early work on the importance of emotional expression for survival and adaptation, Bar-On (2006) defines EI as

"A cross-section of interrelated emotional and social competencies, skills and facilitators that determine how effectively we understand and express ourselves, understand others and relate with them, and cope with daily demands".
(Bar-On, 2006: 14).

According to Bar-On (2006), EI is composed of several intrapersonal and interpersonal competencies, skills, and facilitators that jointly determine effective human behavior. The emotional and social competencies in this conceptualization are grouped into five key components, each with several other closely related sub-competencies and skills, as shown in Table 3. Bar-On's five key components are explained below:

1. *Intrapersonal* skills refer to the ability to be aware and understand emotions, feelings, and ideas in the self.
2. *Interpersonal* skills refer to the ability to be aware and understand emotions, feelings, and ideas in others.
3. *Stress Management* refers to the ability to cope with emotional disturbance and manage feelings.
4. *Adaptability* refers to the ability to be open to change our feelings depending on the situation.
5. *General Mood* refers to the ability to feel and express positive emotions, besides being able to look at the bright side in difficult situations.

Table 3

Bar-On's (1997) model of emotional-social intelligence (Adopted from Bharwaney et al., 2011)

Factors	Sub-factor
INTRAPERSONAL *(Self-awareness and self-expression)*	**Self-Regard** • To accurately perceive, understand, and accept oneself. **Emotional self-awareness** • To be aware of and understand one's emotions. **Assertiveness** • To effectively and constructively express one's feelings and oneself. **Independence** • To be self-reliant and free of emotional dependency on others. **Self-actualization** • To strive to achieve personal goals and actualize one's potential.
INTERPERSONAL *(Social awareness and interpersonal relationship)*	**Empathy** • To be aware of and understand how others feel. **Social Responsibility** • To identify with one's social group and cooperate with others. **Interpersonal Relationship** • To establish mutually satisfying relationships and relate well with others.
STRESS MANAGEMENT *(Emotional management and control)*	**Stress Tolerance** • To effectively and constructively manage emotions. **Impulse Control** • To effectively and constructively control emotions.
ADAPTABILITY *(Change Management)*	**Reality-Testing** • To objectively validate one's feelings and thinking with external reality. **Flexibility** • To adapt and adjust one's feelings and thinking to new situations. **Problem-Solving** • To effectively solve problems of a personal and interpersonal nature.
GENERAL MOOD *(Self-motivation)*	**Optimism** • To be positive and look at the brighter side of life. **Happiness** • To feel content with oneself, others, and life in general.

The Bar-On (2006) model is in line with Goleman's (1995), as it emphasizes the importance of emotional and social competencies. However, unlike Goleman's (1995) model which focuses on performance at work, Bar-On's (2006) focuses on the individual's psychological well-being in all areas of their life. Bar-On attributes a lack of success among people with low emotional-social intelligence to the fact that they do not adapt easily to their environment. In sum, Bar-On and Goleman argue that an individual's potential for success is determined by both their cognitive abilities and their emotional and social competence (Bar-On, 2006).

Bar-On's (2006) and Goleman's (1995) models also share similar components; for example, *intrapersonal* being related to *self-awareness, stress management* to *self-management,* and *interpersonal* to *social awareness* and *relationship management.* These components can also be tied back to Mayer and Salovey's (1997) model. By interpreting *intrapersonal skills* as being similar to *perceiving and understanding emotions, stress management as* being comparable to *managing emotions,* and *general mood as* being identical to *using emotions* (Bar-On, 2006; Salovey and Grewal, 2005).

Trait Model of Emotional Intelligence (Petrides and Furnham, 2001)
Trait EI (or emotional self-efficacy) refers to a constellation of behavioral dispositions and self-perceptions, measured via self-report, concerning one's ability to recognize, process, and utilize emotion-laden information. It includes various dispositions from the personality domain (empathy, impulsivity, and assertiveness), the element of social (Thorndike, 1920), and personal intelligence (Gardner, 1983). Global trait EI consists of four factors: self-control, well-being, emotionality, and sociability, which are explained below:

1. *Self-control* refers to emotion control, stress management, and impulse control.
2. *Well-being* refers to self-esteem, trait happiness, and trait optimism.
3. *Emotionality* has to do with emotion perception (self and others), emotion expression, relationships, and trait empathy.
4. *Sociability* refers to social awareness, emotion management, assertiveness, adaptability, and self-motivation

Table 4 provides a brief definition of each facet (Petrides et al., 2016). Trait EI, which is assessed through self-report instruments, is a personality trait rather than a cognitive ability, and as such, it should not be expected to show strong associations either with psychometric intelligence (McCrae, 1994; Zeidner, 1995). Indeed, all the available empirical evidence suggests that trait EI is virtually independent of cognitive ability (Derksen, Kramer and Katzko, 2002; Newsome, Day and Catano, 2000; Saklofske, Austin and Minski, 2003). Trait EI theory does not assume that there is one "correct" or "best" way to be; instead, certain trait EI profiles will be advantageous in some contexts, but not in others (Petrides, 2010). The trait Emotional Intelligence Scale (TeiQue) (Petrides and Furnham, 2000, 2001) is among the most common measurements of trait EI.

Trait EI also correlates with organizational variables of broader significance, such as entrepreneurial behaviors (Ahmetoglu, Leutner and Chamorro-Premuzic, 2011), WE (Akhtar et al., 2015), and counterproductive work behaviors (Jung and Yoon, 2012). The primary differences between these three theories are; (a) Mayer and Salovey's model fits within the emotion and cognitive interactions area, while (b) Goleman's and Bar-On's mixed models treat mental abilities and a variety of other characteristics such as motivation, personal independence, self-regards, states of consciousness and social activity as a single entity, (c) Petrides's trait EI model integrates the affective aspects of personality. The different measures of EI used by researchers are shown in the next section.

Table 4
The sampling domain of trait emotional intelligence in adults

Facets	Definition
Adaptability	Being flexible and willing to adapt to new conditions
Assertiveness	Being frank, straightforward, and prepared to stand up for one's rights
Emotion perception (self and others)	Being clear about their own and other people's feelings
Emotion expression	Being capable of communicating their feelings to others
Emotion management (others)	Being capable of affecting other people's feelings
Emotion regulation	Being capable of controlling one's own emotions
Impulse control	Being reflective and less likely to surrender to one's drives
Relationships	Being capable of having satisfying personal relationships
Self-esteem	Being successful and self-confident
Self-motivation	Being driven and unlikely to surrender in front of difficulty
Social awareness	Being talented in networking with good social skills
Stress management	Being capable of coping with pressure and regulating stress
Trait empathy	Being capable of taking someone else's perspective
Trait happiness	Being cheerful and satisfied with one's own life
Trait optimism	Being confident and positive

Measures of Emotional Intelligence
Since the mid-1990s, EI has been studied extensively, and today there are a variety of measurement instruments available for assessing EI. The popular method of classifying EI measures refers to the three EI "streams" (Ashkanasy and Daus, 2005). According to them, most of the research on the application of EI is grounded in one of the three streams. Stream 1 is based on the ability model of EI, which views EI as "a set of interrelated abilities at the interface of emotion and cognition, including perceiving, understanding, using, and managing emotions" (Lopes, 2016, p. 316); stream 2 involves individuals' subjective evaluations of emotional abilities; and finally, stream 3 is called the mixed model of EI, and encompasses perceived skills, facets relating to personality, motivation, and other aspects of adaptive functioning related to emotions (Lopes, 2016). Ashkanasy and Daus (2005) suggested in their discussion of the ''three streams of research'' on EI that a distinction should be made between theoretical models and measurement strategies.

Although the first two streams embrace the ability model of EI, there are slight differences between the approaches of stream 1 and stream 2. One of the main distinctions is that for stream 1, researchers measure EI using a maximum performance test. In contrast, for stream 2 it is measured using a self-report ability test for EI. The former is similar to an intelligence quotient test applied to the domain of emotions, whereas the latter examines self-perceived abilities. The EI measurement tools that are based on the four previously discussed models of EI are listed below.

Mayer Salovey Caruso Emotional Intelligence Test (MSCEIT)
The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey and Caruso, 2002) is the direct operationalization of Mayer and Salovey's (1997) ability EI model. MSCEIT is a performance-based (or ability-based) questionnaire. In line with ability EI conceptualization, the MSCEIT measures one's capacity to reason with emotional content and

to use the emotional content to enhance thought. The MSCEIT differs from the mixed model measures of EI or self-reporting EI measures as a result of the nature and style of the assessment. Respondents are asked to solve emotional problems rather than being asked to self-perceive and rate the extent to which their emotional skills are being used (rating oneself on a 7-point Likert-type scale). The MSCEIT is the most well-known and most frequently employed test for the measurement of EI (Eack et al., 2009; Mayer et al., 2003) which belongs to stream one according to (Ashkanasy and Daus, 2005) methods of classifying EI measures.

This test consists of 141 questions and has four sub-scales: (1) perceiving emotions, (2) using emotions, (3) understanding emotions, and (4) managing emotions (Mayer, Roberts and Barsade, 2008). Consistent with the Mayer and Salovey (1997) model's claim of EI as a type of intelligence, the test is modeled on ability-based IQ tests and generates scores for each of the four branches. The MSCEIT measures the subject's ability by using not only a self-report test but also comparing the results with the professional scores and consensus judgment. The scoring technique assesses whether the participants' choices match the consensus opinion (Mayer, Salovey and Caruso, 2002). Mayer et al. (2003) reported acceptable reliabilities for the MSCEIT. The MSCEIT full-test split-half reliability was 0.93 for general and 0.91 for expert consensus scoring. The reliability for the four branch scores of perceiving, facilitating, understanding, and managing ranged between 0.76 and 0.91.

Although MSCEIT is a well-known EI inventory, there are many criticisms of the MSCEIT's capacity to measure an individual's EI due to a few factors. This test has been criticized for reflecting a cultural bias, so it may not be well effective in some regions, such as Africa and Asia (Law et al., 2008). Moreover, MSCEIT is time-consuming and expensive, which may cause difficulties for practical application.

Wong and Law Emotional Intelligence Scale (WLEIS)
Wong and Law Emotional Intelligence Scale (WLEIS; Wong and Law, 2002), is a self-report ability EI scale based on the theoretical framework of Mayer and Salovey (1997). WLEIS was first published in 2002. Wong and Law (2002) presented four sub-dimensions of EI: (a) Self-Emotion Appraisal (SEA), (b) Other-Emotion Appraisal (OEA), (c) Regulation of Emotion (ROE), and (d) Use of Emotion (UOE). SEA refers to one's "ability to understand their deep emotions and be able to express these emotions naturally" (p. 246); OEA indicates "peoples' ability to perceive and understand the emotions of those people around them" (p. 246); ROE refers to the "ability of people to regulate their emotions, which enables a more rapid recovery from psychological distress" (p. 246); and UOE means the ability of individuals to make use of their emotions by directing them towards constructive activities and personal performance" (p. 246). The MSCEIT and WLEIS, based on the ability model, were used with relatively similar corresponding dimensions. However, the WLEIS belongs to stream 2 (self-report EI ability tests) according to (Ashkanasy and Daus, 2005) methods of classifying EI measures. The WLEIS consists of 16 items, with each sub-dimension measured with four items. This scale is short, easy to operationalize, designed to be administered to the working population, free to operate, and is described as relatively independent of personality traits (Wong and Law, 2002).

However, as a self-report measure, it may be prone to social desirability bias, limiting its ability to capture actual EI. Additionally, it lacks the depth of performance-based EI measures like

the MSCEIT, which assess EI through objective problem-solving rather than subjective self-assessments.

Bar-On Emotional Quotient Inventory (EQ-i)
Bar-On (1997) developed the first measure of EI that used the term "Emotional Quotient" (EQ). According to Ashkanasy and Daus (2005) methods of classifying EI measures, the EQ-i belongs to stream three (mixed self-report EI instrument). The psychometric test developed by Bar-On (the Emotion Quotient Inventory: EQ-i) is a self-report questionnaire that consists of 133 short questions based on a 5-point Likert scale. It has five dimensions and fifteen sub-dimensions (Bar-On, 2006). Bar-On (2006) listed the factors as (a) intrapersonal intelligence, (b) interpersonal, (c) adaptability, (d) stress management, and (e) general mood. The internal reliability of the EQ-i was examined using Cronbach's alpha (Bar-On, 1997a). The internal consistency coefficients for the EQ-i sub-scales, based on seven different samples ranged from 0.70 to 0.89 and thus demonstrated good reliability.

Bar-On (1997a) proposed that the EQ-i measures non-cognitive aspects of personal functioning, such as a student's ability to cope with environmental pressures and demands. Based on unpublished studies cited in the EQ-i Technical Manual, (Bar-On, 1997a) concluded that EI is an important predictor of academic success. Besides, Goleman (1995) proposed that EI could predict success both at work and in school as well as better than traditional intelligence measures.

However, despite its strengths, the EQ-i has several limitations. As a self-report measure, it is prone to social desirability bias and subjective self-perception, potentially compromising its objectivity compared to ability-based EI measures. Additionally, some researchers contend that the EQ-i overlaps with personality traits such as extraversion and conscientiousness, making it less distinct from traditional personality assessments. Furthermore, the mixed-model approach of the EQ-i has been criticised for incorporating non-cognitive traits like stress management and adaptability, which may not strictly measure emotional intelligence in the way that ability-based models (e.g., Mayer and Salovey's framework) do.

Emotional Competence Inventory (ECI)
One of the most widely recognized and used self-report instruments is the Emotional Competency Inventory (ECI) developed by (Boyatzis, Goleman and Rhee, 2000). The ECI is based on a mixed model of EI and regards EI as consisting of both cognitive ability and personality aspects. The model focuses heavily on predicting workplace success. This scale includes a set of emotional competencies within each construct of EI. Emotional competencies are not regarded as innate talents but rather learned capabilities that must be worked on and can be developed to achieve outstanding performance. Goleman posits that individuals are born with a general EI potential that determines their potential for learning emotional competencies (Boyatzis, Goleman and Rhee, 2000).

The scale consists of 110 items that assessed 20 competencies. These competencies are organized into four factors: (i) Self-awareness, (ii) Social awareness, (iii) Self-management, and (iv) Social skills (Boyatzis and Sala, 2004). Unlike the MSCEIT and EQ-i, the ECI utilizes 360-degree assessments that can include self-ratings, peer ratings, and supervisor ratings (Boyatzis and Sala, 2004). The ECI self-rating shows poor to adequate internal consistency

reliability which ranges from 0.61 to 0.85. The internal consistency reliability for the peer and supervisor evaluation scale is between 0.80 to 0.95. Although it appears that it has high internal consistency reliability for its peer and supervisor evaluation scale, there are yet very few researches have been done on the reliability and validity of this ECI peer-evaluation segment (Conte, 2005). Researchers who have examined the content of the ECI competencies have concluded that they overlap with four of the Big Five personality dimensions (Conscientiousness, Emotional Stability, Extraversion, and Openness) (Matthews, Zeidner and Roberts, 2002).

Trait Emotional Intelligence Questionnaire (TEIQue)
The TEIQue is very frequently used in EI peer-reviewed research. TEIQue scores show very high correlations with the five major domains of personality (Matthews, Zeidner and Roberts, 2002; Mayer, Roberts, and Barsade, 2008). Some researchers have argued that this is a problem for the discriminant validity of trait EI - that trait EI is, in fact, indistinguishable from personality. The TEIQue (Petrides, 2009b) items were created to represent the 15 facets of trait EI, yielding roughly ten items per facet for the full form of 153 items.

The TEIQue generates four broad scales, each of which is comprised of several more specific "factor" scales: (i) well-being, (ii) self-control, (iii) emotionality, and (iv) sociability. In addition to the 13 factors that comprise the four broad scales, two additional factors, namely self-motivation and adaptability, contribute directly to the global trait EI score, without going through any specific factor. In contrast to many self-report measures of EI (Siegling, Nielsen and Petrides, 2014), which leaves much to be desired theoretically as well as psychometrically (Conte, 2005; Matthews, Zeidner, and Roberts, 2002), the TEIQue is characterized by a strong theoretical and psychometric basis. The TEIQue has been shown to have good validity (Freudenthaler et al., 2008; Mikolajczak, Leroy and Roy, 2007).

Methodology
This study adopts a conceptual and integrative review approach to examine the historical evolution, theoretical models, and assessment methodologies of EI. Secondary data were gathered from peer-reviewed journal articles, books, and technical reports sourced from Scopus, Web of Science, and Google Scholar, ensuring a rigorous and comprehensive analysis. The selection criteria focused on relevance, timeliness, credibility, and diversity, incorporating both foundational theories and recent empirical findings. A qualitative content analysis was conducted to identify patterns, contradictions, and theoretical gaps across EI models, including the ability model (Mayer and Salovey, 1997), mixed models (Goleman, 1995; Bar-On, 1997), and the trait model (Petrides and Furnham, 2001). The study further evaluates key EI measurement tools (MSCEIT, WLEIS, EQ-i, ECI, TEIQue) based on their validity, reliability, and applicability across different settings. The analysis integrates and compares different EI models to highlight commonalities and distinctions. By critically examining these models, the study seeks to clarify the theoretical foundations of EI and its implications in various domains, such as psychology, education, and business. This theoretical integration helps to identify gaps in the literature and suggests areas for future research.

Discussion and Conclusion
There are several assessment tools purporting to measure EI that have been developed. These assessment tools differ based on their different conceptual frameworks and their use of

different measurement approaches that include performance tests, self-report inventories, and observer ratings. There has been considerable debate concerning the most appropriate approach for the measurement of the EI construct. Some argue that the measurement approach rather than the theoretical basis should ultimately determine the nature of the EI model being assessed. However, Groves, McEnrue and Shen, (2008) stated that the decision to select an EI model by HRD scholars and practitioners for training purposes should depend on the type of skills being developed, the method and duration of development, and the type of measure employed.

A key decision researchers or practitioners need to make before incorporating EI measures into their work is whether they should utilize an ability, mixed, or trait measure of EI. In general, when researchers or practitioners are interested in emotional abilities and competencies, then they should utilize measures of ability EI. Ability EI is important in situations where a good theoretical understanding of emotions is required. For example, a manager with high ability EI is more likely to make good decisions regarding team composition. Indeed, numerous studies on ability EI and decision-making in professionals indicate that those high in EI tend to be competent decision-makers, problem solvers, and negotiators due primarily to their enhanced abilities at perceiving and understanding emotions (Mayer, Roberts, and Barsade, 2008). As can be seen from the reviews, some EI measuring tools measured a person's trait and not their ability. For example, the ECI includes the measurement of the subject's characteristics such as conscientiousness.

Each EI model contributes distinct perspectives but also has its shortcomings. Mayer and Salovey's Ability Model frames EI as a set of cognitive skills for managing emotions, offering a clear, structured approach but potentially neglecting personality influences. Goleman's Emotional Competencies Model provides practical insights into personal and professional effectiveness through competencies, yet it overlaps with Mayer and Salovey's framework, causing some redundancy and lack of clear boundaries. Bar-On's Emotional-Social Intelligence Model combines emotional and social skills to emphasize overall well-being and adaptability but can suffer from blurred distinctions between components and biases from self-report measures. The Trait Model by Petrides and Furnham integrates EI with personality traits and self-perceptions, offering a broad view but excluding cognitive elements, which may limit its empirical validation and theoretical integration. Each model's unique focus offers valuable insights, but its limitations highlight the need for a comprehensive approach to fully understand EI.

The variety of EI measurement tools reflects different conceptual approaches but also highlights key challenges. The ability-based model, such as the MSCEIT, offers a rigorous, performance-based assessment of emotional reasoning but faces criticism for cultural bias and practical constraints. Self-report measures like the WLEIS are more accessible but may suffer from biases and less robust validation. Mixed models, such as the EQ-i and ECI, combine emotional competencies with personality traits, complicating the distinction between EI and general personality. Tools like the TEIQue also face scrutiny for overlapping with personality dimensions, raising questions about their unique contribution to EI assessment. Choosing the right tool depends on balancing theoretical rigor, practical application, and the specific needs of the assessment.

In conclusion, the selection of an EI measurement tool depends on the specific context and objectives of the assessment. While ability EI measures like MSCEIT offer a theoretically grounded approach for evaluating emotional reasoning, self-report and mixed models provide practical, albeit potentially less precise, alternatives. Researchers and practitioners must carefully consider these factors, including the theoretical basis of the EI model, the nature of the skills being assessed, and the practicalities of measurement, to ensure the chosen tool effectively meets their needs.

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