

Emotional intelligence: A catalyst for inspirational leadership and management excellence

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Although a centuries-old phenomenon, emotional intelligence has received an enormous amount of attention and popularity in various academic and non-academic circles during the last two decades. Emotionally intelligent abilities, capacities and skills are increasingly becoming significant and inevitable almost in all works of life ranging from effective leadership, building teams, to the globe-spanning network of communication, development of human potential and performance, social skills and economic and political life. In this dynamic and complexly integrated international economic system, tomorrow's leaders will have to facilitate others to develop their own leadership, skills and potential with the help of emotional intelligence. Be that as it may, there still exists continuing debate among researchers pertaining to the best method for measuring this construct of emotional intelligence. Keeping this in view, the present paper aims to introduce a new measure, based on a holistic and system modelling approach, to conceptualise and measure the phenomenon of emotional intelligence. It develops, constructs and validates a model that conceptualises and measures the phenomenon of emotional intelligence by constructing and using a latent variable structural equation model within the certain boundaries of the psychosocial system. It will provide us with a measurement or index of emotional intelligence at individual level. An emotional intelligence index will indicate the extent to which a particular individual or a group of people is emotionally intelligent and which areas lack this intelligence, if any. Strengths and weaknesses of various components of the model will also indicate characteristics at a certain level in order to pinpoint what exactly an individual or group of individuals requires to improve its emotionally intelligent capabilities.

Keywords: emotional intelligence; psychosocial system; self-emotional skills; intrapersonal development; social capital; management excellence; socio-economic factors; systems approach; human contestability

Introduction: back to the beginning

Humans are unique in the way that they are at the top of a spectrum of existing intelligence¹ and are better in thinking and able to articulate their feelings effectively. The human brain has a remarkable set of cognitive skills to process complex information. Human intelligence developed over the years was previously regarded as one single unitary factor. However, it was Howard Gardner (1983) who by coining a theory of multiple intelligences discovered that human intelligence encompasses a set of several interconnected and interwoven capabilities, such as the capacities to reason, to plan, to solve problems, to think abstractly, to comprehend ideas, to use language, to learn and

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so on. As a result individuals have multiple intelligences situated within different parts of their brain. Gardner grouped these intelligences into seven different components: logical, linguistic, spatial, musical, kinaesthetic, interpersonal and intrapersonal intelligences. He later added naturalistic as well as spiritual/existential intelligences in multiple intelligences and all these can broadly be grouped into one of three categories, i.e. abstract,² concrete³ and social intelligence.⁴ Researchers believe that emotional intelligence has its roots in social intelligence (Bar-On, 2006; Young, 1943, 1967). The recognition of social intelligence received a major boost by the publication of Gardner's highly regarded theory of multiple intelligences in 1983. Both interpersonal and intrapersonal intelligences are closely related with the phenomenon of emotional intelligence (Bradberry & Su, 2006).

Basically emotional intelligence is an interconnection between feelings and thinking process, i.e., 'feeling about thinking' and 'thinking about feeling'. The human brain's physiology and anatomy not only enable us to understand its process and structure but also reveal the fact that humans have a triune brain. The theory of 'triune brain' was devised by Paul Donald MacLean (1990), US neuroscientist and emotional intelligence pioneer, to explain the evolution of the human brain and to try to reconcile rational human behaviour with its more primal and violent side. Our triune brain consists of not one brain but three brains, namely, a primate neocortex or thinking brain, a midbrain or emotional brain and a reptilian brain stem (Figure 1). The neocortex, also known as the cerebral cortex, is found in the brain of higher mammals, and is responsible for higher-order thinking skills, reason, speech and sapience. MacLean termed the brain's centre of emotions as the limbic system⁵ that is comprised of the hippocampus, hypothalamus and amygdala. The limbic system is the source of emotions and instincts (e.g. feeding, fighting, fleeing and sexual behaviour – also known as 'the 4 Fs'). Emotions are produced when this part of the brain is stimulated, such as by mild electric current. The 'reptilian brain', which includes the brain stem and cerebellum, is primarily reactive to direct stimuli and controls the muscles, balance and autonomic functions (e.g. breathing and heartbeat). MacLean proposed that the limbic system had evolved in early mammals to control fight-or-flight responses and react to both emotionally pleasurable and painful sensations.

Recent developments in brain science reveal the fact that both emotional (feeling) and thinking (logical) brains, although separately located, are completely intertwined and interwoven in the sense that a decision or action cannot be taken without engaging the emotional brain (Sparrow & Knight, 2006). The limbic system cannot function entirely on its own.

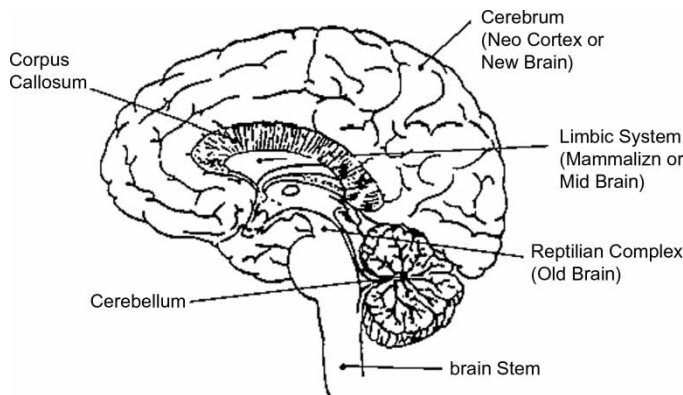


Figure 1. Human brain and triune brain theory.

Source: <http://www.buffalostate.edu/orgs/bcp/brainbasics/brain3.gif>.

It needs to interact with the neocortex to process the emotions. The limbic system must interact with the neocortex in some way. This is the natural reason why emotional intelligence is so important in everyday life for every individual. Emotional intelligence works through different mental processes, namely perception (perceiving and identifying emotions), assimilation (integrating emotions into thought processes), understanding (understanding one's own and others' emotions) and managing (managing emotions).

Ever since the publication of Daniel Goleman's book on emotional intelligence in 1995, the phenomenon of emotional intelligence has become widely known and popular across a wide range of academic and non-academic circles. It is believed to be a better forecaster of excellence than general intelligence and it might predict up to 80% of success in life, based on Daniel Goleman's implication (1995, 1998, 2006). Many other psychologists and researchers seem to agree that emotional intelligence can really have a significant predictive value. Current research on emotional intelligence measured as ability suggests that it may have some use in predicting important outcomes like reduced rates of emotional behavioural problems. Thus emotional intelligence has immense significance and relevance for self-emotional management, development of human potential, relationship management at home and work, teamwork, effective leadership, job performance, organisational development, creativity and innovation, educational development, stress reduction helper and so on.

Genesis and history of emotional intelligence: a literature review

The history of the concept of 'emotional intelligence' is as old as the history of mankind. Its origin, however, can be traced back in ancient Greek philosophy. Socrates (469–399 BCE), a great Saint of Reason and an ancient Greek philosopher, believed that emotions, desires and appetites can influence human motivation and all one's moral actions. He acknowledged the role of emotions in determining why human beings act the way they do (Smith & Sanderman, 2005). He is also famous for stressing the importance of examining one's life and knowing thyself. Plato, a disciple of Socrates, in *The Republic* asserted that there seem to be three basic components of the human mind: the reasoning, the desiring and the emotive parts, and all learning has an emotional base (Scherer, 1994). For Aristotle, the emotions are not represented as constituting a separate agency or module, but they had even greater importance, particularly in the moral life, our capacity for which Aristotle regarded as largely a result of learning to feel the right emotions in the right circumstances. Subsequently, scholars such as Hume, Spinoza, the Stoics, Hobbes, Kant and the like also placed human emotions at the very centre of character and agency.

In 1859 Charles Darwin (1809–1882), in his book entitled, *On the origin of species by means of natural selection*, discussed the importance of emotional expression for survival and second adaptation.

The movements of expression in the face and body are in themselves of much importance for our welfare. They serve as the first means of communication between the mother and her infant; she smiles approval, and thus encourages her child on the right path, or frowns disapproval. We readily perceive sympathy in others by their expression; our sufferings are thus mitigated and our pleasures increased; and mutual good feeling is thus strengthened. (Darwin, 1872, pp. 365–366)

In the year 1911, Edward Lee Thorndike analysed animal intelligence and in 1920 he first identified social intelligence (see Ruisel, 1992) and defined it as 'the ability to understand and manage men and women, boys and girls, to act wisely in human relations' (Thorndike, 1920). Sigmund Freud (1856–1938, p. 227) wrote:

We remain on the surface so long as we treat only memories and ideas. The only valuable things in psychic life are, rather, the emotions. All psychic powers are significant only through their fitness to awaken emotions. Ideas are repressed only because they are connected with the liberation of emotions. (Freud, 1921, p. 159).

In the year 1924, Louis Leon Thurstone's (1887–1955) work in factor analysis led him to formulate a model of multiple intelligences, entitled, *The nature of intelligence*, which were independent group factors of intelligence that different individuals possessed in varying degrees. He opposed the notion of a singular general intelligence that factored into the scores of all psychometric tests and was expressed as a mental age. Thorndike and Stern (1937) reviewed various attempts to measure social intelligence and concluded that it comprised of three components: attitude towards society, social knowledge and degree of social adjustment. They also determined that social intelligence was too complex to be measured and the difficulties inherent in measuring interactions with people were too large an obstacle to overcome. In 1940 David Wex Wechsler, the father of IQ, discussed the non-intellective aspects. Rejecting a concept of global intelligence (as was propagated by Charles Spearman), he divided the concept of intelligence into two main areas: verbal and performance (non-verbal) areas, each further subdivided and tested with a different subtest (see also Kaplan & Saccuzzo, 2005). R.W. Leeper's (1948) study worked on emotions as a source of information.

In 1954, humanistic psychologist, Abraham Maslow in his book, *Motivation and personality* described how people can build emotional strength. However, the term 'emotional intelligence' was first used in a literary criticism book in 1961, which proposed that some of Jane Austin's characters in her novel *Pride and prejudice* displayed an '... intelligence, which informs the emotions ...'. In the year 1966, Leunen published a paper on emotional intelligence and emancipation (cited in Sparrow & Knight, 2006). In 1984, Claude Steiner published his first article on emotional literacy (Steiner, 1984). As already mentioned, Howard Gardner introduced the concept of multiple intelligences in 1983. In the same year, Reuven Bar-On began the study of emotional intelligence as part of his doctoral programme at Rhodes University, South Africa. The concepts of 'emotional work' and 'emotional labour' were first introduced by Arlie Hochschild in the same year. Six years later research began looking at emotional expression and its importance to organisational psychology (Hochschild, 1983).

In 1985 John D. Mayer and Peter Salovey begin collaboration on relation of cognition and affect. In 1986, Wayne Leon Payne, then a graduate student at an alternative liberal arts college in the USA, used the phrase 'emotional intelligence' in an unpublished thesis. This seems to be the first academic use of the term 'emotional intelligence'. In the next five years, no one else seems to have used the term 'emotional intelligence' in any academic papers. In 1987, in an article published in *Mensa Magazine*, Keith Beasley uses the term 'emotional quotient'. It has been suggested that this is the first published use of the term, although Reuven Bar-On claims to have used the term in an unpublished version of his graduate thesis.

The year 1990 saw Peter Salovey and Jack Mayer announce their emotional intelligence theory in the first articles about emotional intelligence in academic journals and presented their work at several scientific conferences. Mayer et al. (1990) undertook the first empirical study of emotional intelligence that explicitly used the term. The concept of emotional intelligence was more popularised after the publication of psychologist and *New York Times* science writer Daniel Goleman's (1995) book, *Emotional intelligence: Why it can matter more than IQ*. According to the article by Annie Paul, Goleman asked their permission to use the term 'emotional intelligence' in his book and that permission was granted providing he told people where he heard the term (Paul, 1999).

Before then it seems his book was planning to focus on 'emotional literacy'. Reuven Bar-On published the first assessment tool to measure emotional intelligence in 1997. It measures 'an array of non-cognitive capabilities, competences and skills that influence one's ability to succeed in coping with environmental demands and pressures' (Bar-On, 1997, p. 27). Mayer and Salovey refined their definition, i.e. 'emotional intelligence involves the ability to perceive accurately, appraise and express emotions; 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 & Salovey, 1997, pp. 4–5). Robert K. Cooper and Ayman Sawaf published *EQ: Emotional intelligence in leadership and organisations*. This includes the 'EQ map' (Cooper & Sawaf, 1998). Mayer, Salovey and Caruso (2008) discussed emotional intelligence as new ability or eclectic traits.

In 1998 Daniel Goleman published *Working with emotional intelligence*. He defined emotional competency as 'a learned capability based on emotional intelligence that results in outstanding performance at work' (Goleman, 1998, p. 23). In that book he widened the definition of emotional intelligence even further, saying that it consists of 25 'skills, abilities and competencies'. Petridges and Furnham (2001, 2003) and Petridges, Pita and Kokkinaki (2007) proposed a trait-based model of emotional intelligence and defined it as 'a constellation of emotion-related self-perceptions located at the lower levels of personality' (Petridges et al., 2007, p. 274). In lay terms, trait emotional intelligence refers to an individual's self-perceptions of their emotional abilities. It encompasses behavioural dispositions and self-perceived abilities and is measured by self-report as opposed to the ability-based model which refers to actual abilities. Trait emotional intelligence should be investigated within a personality framework. Dulewicz and Higgs (1999) questioned the development and measurement of emotional intelligence. However, Schutte et al. (1998) endeavoured to develop and validate a measure of emotional intelligence. Ciarrochi, Chan, and Bajgar (2001) measured emotional intelligence in adolescents.

Be that as it may, one of the major criticisms about the concept of emotional intelligence has been the lack of empirical research on its measurement, validity and scientific basis. Moreover, the flood of research on emotional intelligence over the last 10 years has created more commotion than clarity of the notion. Keeping this in view, the present paper, by using systems thinking, proposes an ultimate conceptualisation of emotional intelligence and develops and validates a new model for its empirical measurement in all walks of life.

Assessing emotional intelligence: a critique of various models

Since its inception, there has been substantial disagreement among researchers regarding the conceptualisation and measurement of emotional intelligence. As a result, various definitions and models of emotional intelligence have emerged over time. One way of measuring emotional intelligence is to combine psychological with biological measures. EEG (electroencephalography) is a way of measuring the brain waves coming from different parts of the brain and is useful in studying the sleeping brain and diagnosing epilepsy, among other things. Interestingly, EEG was found to explain a lot of the variation in emotional intelligence scores. Low emotional intelligence was related to EEG showing under-arousal of the part of the brain called the left frontal cortex. This area is also affected in depression and in attention deficit hyperactivity disorder.

The ability-based model proposed by Salovey and Mayer (1990) defines emotional intelligence as the ability to perceive emotion, integrate emotion to facilitate thought, understand emotions and to regulate emotions to promote personal growth. They argue that

individuals vary in their ability to process emotional information as well as in relating this emotional processing to a wider cognition. The model includes four types of abilities: perceiving emotions, using emotions, understanding emotions and managing emotions. This model measures emotional intelligence by using the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT), based on a series of emotion-based problem-solving items (Mayer, Salovey & Caruso, 2008). By testing a person's abilities on each of the four branches of emotional intelligence, it generates scores for each of the branches as well as a total score. This model has been criticised by many researchers. Roberts et al. (2001) asserted that this model may only be measuring conformity, not ability. Brody (2004) argued that MSCEIT tests knowledge of emotions but not necessarily the ability to perform tasks that are related to the knowledge that is assessed. Bradberry and Su (2006) criticised this model for lacking predictive validity and a significant relationship with job performance in the workplace.

Nowadays, most psychologists also agree that performance-based measures of emotional intelligence are more meaningful than the self-report system favoured by the websites where you can test your own EQ. In performance-based techniques, ability is measured directly, by having a person solve a problem, like identifying the emotion in a face, or story or painting.

Daniel Goleman (1995) introduced an emotional competencies model that focuses on emotional intelligence as a wide array of competencies and skills that drive leadership performance. The model outlines four main emotional intelligence constructs, namely, self-awareness, self-management, social awareness and relationship management. Within each of these four emotional intelligence constructs, the model includes a set of emotional competencies. Two measurement tools are based on the Goleman model. First, the Emotional Competency Inventory (ECI), which was created in 1999 and the Emotional and Social Competency Inventory (ESCI), which was created in 2007. Second is the Emotional Intelligence Appraisal, which was created in 2001 and which can be taken as a self-report or 360-degree assessment (Bradberry & Greaves, 2009). This model has been criticised in the research literature as mere 'pop psychology' (Mayer, Roberts, & Barsade, 2008). The Bar-On model of Emotional-Social Intelligence defines emotional intelligence as being concerned with effectively understanding oneself and others, relating well to people, and adapting to and coping with the immediate surroundings to be more successful in dealing with environmental demands. According to Bar-On, 'Emotional intelligence is an array of non-cognitive capabilities, competencies, and skills that influence one's ability to succeed in coping with environmental demands and pressures' (Bar-On, 1997, p. 28). A deficiency in emotional intelligence can mean a lack of success and the existence of emotional problems. Bar-On posits that emotional intelligence develops over time and that it can be improved through training, programming and therapy. A self-report test, Bar-On's Emotional Quotient Inventory (EQ-i), designed to measure competencies including awareness, stress tolerance, problem solving and happiness. However, doubts have been expressed about this model in the research literature (in particular about the validity of self-report as an index of emotional intelligence) and in scientific settings (Roberts et al., 2001). The EQ-i is not meant to measure personality traits or cognitive capacity, but rather the mental ability to be successful in dealing with environmental demands and pressures (Bar-On, 2006). This model has been found to be highly susceptible to faking (Day & Carroll, 2008; Grubb & McDaniel, 2007).

Petridges and Furnham (2000, 2001, 2003) and Petridges et al. (2007) proposed a conceptual distinction between the ability-based model and a trait-based model of emotional intelligence. The ability-based model is based on actual abilities, which have proven highly resistant to scientific measurement whereas the trait-based model is based on behavioural

dispositions and self-perceived abilities and is measured by self-report. This model defines emotional intelligence as a set of traits (much like personality). The trait emotional intelligence is a constellation of emotion-related self-perceptions located at the lower levels of personality and should be investigated within a personality framework. The trait-based model defines emotional intelligence as a set of traits, capabilities, and non-cognitive skills that allow individuals to successfully adapt to pressures and demands within the environment. Thus this is general and subsumes both the Goleman and Bar-On models. The Trait Emotional Intelligence Questionnaire (TEIQue) is an open-access measure that was specifically designed to measure the construct comprehensively in order to provide an operationalisation for Petrides and colleagues' model that conceptualises emotional intelligence in terms of personality. The test encompasses 15 subscales organised under four factors: well-being, self-control, emotionality and sociability. There are many self-report measures of emotional intelligence, including the EQi, the Swinburne University Emotional Intelligence Test (SUEIT), the Schutte Self-Report Emotional Intelligence Test (SSEIT) (Schutte et al., 1998), Tett-Fox-Wang Emotional Intelligence Measure (Tett, Fox & Wang, 2005). From the perspective of the trait-based model, none of these assess intelligence, abilities or skills (as their authors often claim), but rather, they are limited measures of trait emotional intelligence (Petrides, Furnham, & Mavroveli, 2007).

It can be concluded that the above models are not holistic and comprehensive in conceptualisation and measurement of emotional intelligence. Emotional intelligence is multidimensional in nature that subsumes both inner and outer emotional intelligences. It includes innate talents, learned human capabilities, relationship management skills and socio-economic factors that make an individual intelligent enough to effectively understand and pick up their own and others' emotional activities in order to adjust in every situation. At a personal level, we all know that some individuals have greater capabilities than others to carry out sophisticated information processing about emotions and emotion-relevant stimuli and to use this information as a guide to thinking and behaviour. The capabilities and mechanisms that underlie emotional intelligence are: emotionality itself, facilitation and inhibition and emotional information flow and specialised neural mechanisms. At a wider level of society, emotional intelligence has collective features of positive influences working together for wider implications on the community, organisation and society. Thus, emotional intelligence subsumes inter-related and inter-woven factors namely intrapersonal intelligence,⁶ interpersonal intelligence,⁷ capabilities to perform⁸ and social capital⁹ that contribute to holistic emotional intelligence.

Conceptualisation of emotional intelligence

The term 'emotional intelligence' is a paradox since it contains two contradictory and complex terms,¹⁰ 'emotional' and 'intelligence'. Emotions are subjective and intelligence is objective. Emotional means a subjective experience or reaction related to human 'emotion', a mental and physiological state associated with a wide variety of feelings, thoughts and behaviour. The English word 'emotion' stems from Latin word *emovere*, means 'out move', often associated with mood, temperament, personality and disposition. An emotion is about something or has intentionality that occurs throughout the human body, i.e. brain, heart, immune system and central nervous system (Pert, 1997). The results of human emotions such as surprise, love, happiness, anger, anxiety, pain, empathy, etc. determine human behaviour, feelings and thoughts. The word 'intelligence' originates from the Latin verb *intellegerere*, which means 'to understand'. Numerous definitions and theories of intelligence have been proposed in literature. A more general

definition of intelligence comes from 'Mainstream science on intelligence' (cited by Gottfredson, 1997, p. 14), which was signed by 52 intelligence researchers in 1994 and defined it as:

A very general mental capability that, among other things, involves the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly and learn from experience. It is not merely book learning, a narrow academic skill, or test-taking smarts. Rather, it reflects a broader and deeper capability for comprehending our surroundings – 'catching on', 'making sense' of things, or 'figuring out' what to do. (Gottfredson, 1997, p. 14).

Thus, the word 'intelligence' is related to logic, reasoning, planning, learning, thinking and problem solving.

Emotional intelligence is a way of life that subsumes a set of multiple capabilities¹¹ to perceive, manage, assess and evaluate one's own and other persons' emotions, to optimise personal potential and performance, to manage relationships and to develop social, economic and political awareness and social understanding and sociability. It is concerned with differentiating among emotions and using them to direct thinking and actions in order to solve problems. It is learning from and dealing with pleasant or unpleasant innermost feelings as they arrive instead of ignoring them. Therefore, emotional intelligence is a collection of capabilities to perceive and integrate emotions through information channels to facilitate thoughts, understand and regulate emotions to promote personal and collective growth of society as a whole. Emotional intelligence is quite different from academic intelligence and abstract intelligence. It is the capability and practice of observing oneself (self-emotional skills), developing personal potential and performance (intrapersonal development), learning and practising relationship management skills (management excellence) and adopting sociability and socio-economic understanding (socio-economic factors). Thus, the concept of 'emotional intelligence' encompasses self-emotional intelligence, intrapersonal development, interpersonal intelligence and social intelligence within a psychosocial system. A person is said to be emotionally intelligent if he/she is capable of managing their own emotions, developing their own potential, managing relationships at work and successfully handling relations at home and in society at large in order to handle the pressures and challenges of a psychosocial system. Emotional intelligence is not a synonym for personality but subsumes it and is the capability to manage our personality, both internal and external.

Emotional intelligence is essentially an umbrella of multiple intelligences comprising both *inner emotional intelligence*, which consists of both innate emotional intelligence (self-emotional skills like sensitivity and processing, which mean the natural capacity and ability to understand oneself, to appreciate one's feelings, fears, happiness, motivations and so on) and intrapersonal development capabilities like memory and learning that mean the ability to develop own human potential and performance; and *outer emotional intelligence* that consists of management excellence (capabilities to manage and understand the intentions, motivations and desires of other people) and socio-economic factors, which are the social skills of social understanding and sociability, economic and political awareness. Figure 2 shows these various layers of emotional intelligence in the form of a cyclical matrix of emotional intelligence.

A person with high emotional intelligence is able to assimilate emotional experience into overall capacity for understanding the outside world and use emotions to enhance intellectual resourcefulness. For example, explicit recognition that you're anxious may lead to constructive examination of your fears and the formulation of a workable coping strategy. Failure to do so may lead only to distraction and disruption.

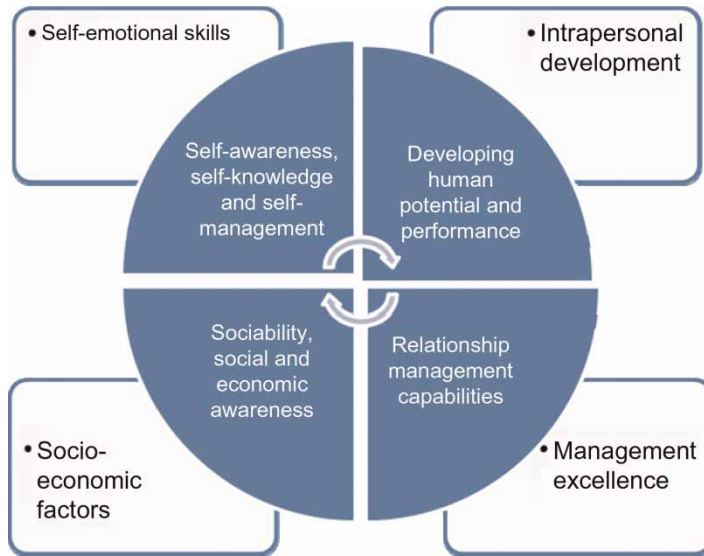


Figure 2. Conceptual model of emotional intelligence.

Kanji-Chopra emotional intelligence model

Throughout the literature, it is generally agreed that emotional intelligence is vital for personal development, survival, personal life success and excellence. It is now widely known that emotions interact with thoughts and vice versa. Therefore, there is a need for a framework to assess the phenomenon of emotional intelligence related to any individual. The present authors are not aware any previous serious attempts to assess emotional intelligence as a holistic approach. Any previous attempts have not taken into account many important emotionally intelligent factors such as human contestability. Moreover, it has been very difficult to determine their causation and the fact is that these factors are highly correlated in real life. The Kanji-Chopra emotional intelligence (KCEI) model provides a mechanism by which emotional intelligence can be communicated through the system. It is a vehicle for communication, bringing out factors such as human potential that might not otherwise be considered. It provides a means for identification, classification and analysis and then a response to emotional intelligence. A highly complex phenomenon like emotional intelligence, one of the key challenges facing individuals, i.e., how to deal with the factors affecting emotional intelligence associated with self-knowledge and attitudes, requires a multidisciplinary approach for its conceptualisation, measurement and analysis.

The present paper, therefore, introduces a new emotional intelligence measure based on a holistic and system modelling approach (Kanji, 2002; Kanji & Chopra, 2007, 2009). It constructs a latent variable structural equation model using systems components (see Figure 3) to measure emotional intelligence within certain boundaries of the psychosocial system. The model decomposes emotional intelligent index into a self-emotional skills index, a human capabilities index, a management excellence index and an individual social capital index.

Dimensional structure of emotional intelligence

The development of emotional intelligence in an individual will depend upon various inner and outer factors that would enable him/her to achieve self-management,

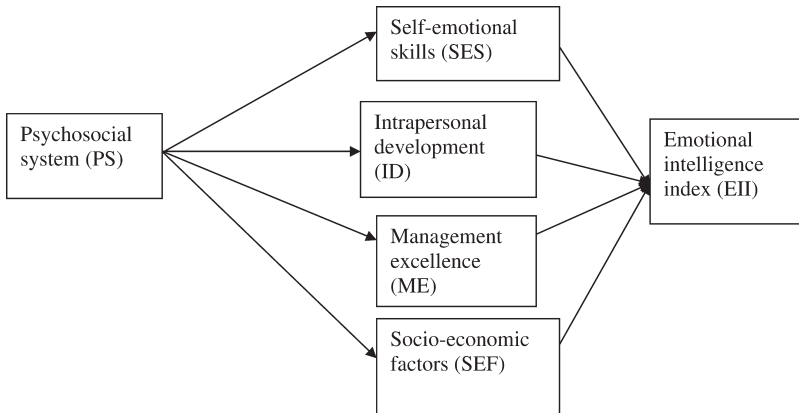


Figure 3. Kanji-Chopra emotional intelligence model (KCEIM).

self-development, development of other people and to enjoy healthy relationships at home, at work and in society at large. However, emotional intelligence is a complex, multifaceted, changeable, developable and measurable phenomenon. It predicts an individual performance and development being an integral part of the whole person. Although a centuries-old phenomenon, emotional intelligence has received an enormous amount of attention and popularity in various academic and non-academic circles during the last two decades. Emotionally intelligent skills, capabilities and capacities are increasingly becoming significant and inevitable almost in all walks of life ranging from effective leadership, building teams, to the globe-spanning network of communication, development of human potential and performance, social skills and economic and political life. In this dynamic and complexly integrated international economic system, tomorrow's leaders will have to facilitate others to develop their own leadership, skills and potential with the help of emotional intelligence. Be that as it may, there still exists continuing debate among researchers pertaining to the best method for measuring this construct of emotional intelligence. Keeping this in view, the present paper aims to introduce a new measure, based on a holistic and system modelling approach, to conceptualise and measure the phenomenon of emotional intelligence. It develops, constructs and validates a model that conceptualises and measures the phenomenon of emotional intelligence by constructing and using a latent variable structural equation model within the certain boundaries of the psychosocial system. It will provide us with a measurement or index of emotional intelligence at individual level. An emotional intelligence index will indicate the extent to which a particular individual is emotionally intelligent and in which areas they lack this intelligence, if any. Strengths and weaknesses of various components of the model will also indicate characteristics at a certain level in order to pinpoint what exactly an individual or group of individuals requires to improve its emotionally intelligent capabilities.

Psychosocial system (PS)

How people behave has been the subject matter of various disciplines over centuries and various researchers from different disciplines have investigated the subject, why people behave the way they behave. The fact is human behaviour is influenced by a complex interplay and interaction of various factors and influences that fall within the psychosocial system. The term 'psychosocial', first commonly used by Erik Erikson (1902–1994), a

Danish-German-American developmental psychologist and psychoanalyst, in his theory called 'stages of psychosocial development'¹² (Erikson, 1959, 1968) refers to psychological development and its interaction with a social environment. It refers to the interaction between psychological processes that occur within an individual and the outside social environment. It can adversely affect human growth, performance and behaviour. It is a total system containing various factors related to emotional intelligence such as self-emotional skills; intrapersonal development capabilities; excellence in managing relations and others' emotions at work; social skills, social intelligence, economic and political awareness; capacity to pay attention to psychosocial emotional environment; existential and spiritual values that matter enough to live or die for and to conquer the soul; openness to talk about one's emotions with others and adoptability and flexibility in handling changing environment. All these factors of the psychosocial system are interrelated in a complex way and form an integral part of the Kanji-Chopra emotional intelligence model.

Self-emotional skills (SES)

Self-emotional skills are the capabilities of an individual related to innate emotional intelligence which can be very high or low from birth in a person. These are related to understanding yourself, your goals, intentions, responses, behaviour and all. Although most of the previous models of emotional intelligence have included these abilities in their model they have missed many dimensions such as self-confidence, self-discipline, intentionality, etc. and the KCEI model includes the following eight self-emotional skills that are indispensable for self-consciousness and self-awareness for an individual in order to develop emotional intelligence:

- (1) *Emotional self-awareness* is the fundamental foundation of emotional intelligence. It refers to the awareness of the self by recognising our own emotion/feeling as it happens. What makes us happy or sad? It is the basis of personal identity. It is looking inside and is related to knowing one's own inner circle, internal state, emotions and their effects. It includes paying attention to ourselves by becoming objective evaluators of ourselves, recognising our personality, our likes, our dislikes, our strengths and our weaknesses. Self-awareness means that a person is in touch with their own body and emotional state in the moment. A person who is self-aware has a better life and developing self-knowledge/awareness can help to recognise the fact when we are stressed/under pressure or relaxed.
- (2) *Emotional self-management* is a process to skilfully deal with emotions. It is simply defined as managing one's own emotions. There are numerous studies on the physiology of emotions and the profound positive influences people can have on their lives by learning to manage their own emotions.
- (3) *Emotional discipline*, also called self-regulation, refers to the power we gain through the choices we make to choose how we feel. It is the capability to control one's emotions and desires by keeping disruptive emotions and impulses in check. People with low or without emotional intelligence lack self-regulation and would act on their impulses, and as a result would suffer from moral deficiency (Goleman, 1995).
- (4) *Emotional assertiveness* refers to a situation where an individual expresses his/her true feelings. It is closely connected with self-awareness. The lack of 'emotional assertiveness' results in a person being shy, inclined to timidity or lacking self-confidence and emotional assertiveness. When you stand up for yourself, you express your true feelings and do not let others take advantage of you and you

also consider others' feelings. Assertiveness is about finding the middle way. Assertiveness is a trait of self-regard (accepting and valuing oneself) and regard for others in thinking and doing. It is linked to self-esteem and considered an important communication skill. A person communicates assertively by not being afraid to speak his or her mind or trying to influence others, but doing so in a way that respects the personal boundaries of others. They are also willing to defend themselves against aggressive incursions (not aggressive, not passive).

- (5) *Emotional independence*, also called emotional autonomy, is the capability to be self-directed and self-controlled in one's thinking and actions and to be free of emotional dependency. We are emotionally independent when we can choose not to react to or desire outside objects.
- (6) *Emotional resilience* refers to the interplay between the positive emotions and resilience while coping with stress or tragedy. It is a two-dimensional construct indicating the emotional exposure to adversity, failure or stress and the positive adjustment outcomes of that adversity. Thus, in simple words, emotional resilience indicates the positive ability to pick oneself up and bounce back when things go wrong such as in stressful daily life events like divorce, death, poverty, joblessness, etc.
- (7) *Intentionality* is an ability to act deliberately. This means to say what you mean and to mean what you say. It explores how consciously you are able to make decisions consistent with your personal and professional goals and values. Intentionality includes, and is sometimes taken to be equivalent to, what is called 'mental representation'.
- (8) *Self-regard* can be considered as the capability to accept oneself as basically good. There is a positive two-way relationship between emotional intelligence and self-regard. Emotional intelligence can influence your life in a positive way.

Emotional intelligence does not include agreeableness, optimism, motivation, happiness and calmness as these are only personal qualities and have nothing to do with emotions, intelligence or emotional intelligence.

Intrapersonal development (ID)

Emotional intelligence can be learned, developed and enhanced. Intelligence is potential capabilities. This dimension of emotional intelligence is related to developing human potential and performance. Human performance and potential are very much dependent upon what we perceive ourselves to be as our outer world depends upon our inner cosmos. Our ability to acquire and perceive human capabilities to improve performance depends upon our emotional intelligence. Intrapersonal development capabilities encompass the capability for taking responsibility and initiative for personal performance and development (conscientiousness), ability to realise one's potential and capabilities (self-actualisation), an act of making something new and involves the generation of new ideas, concepts, thinking, problem solving, approaches, actions, etc. (creativity),¹³ to acquire knowledge with reason and the gut feeling of identification and believing and acting on it (intuition), skills to understand non-verbal clues (facial expression and body language) in the people around one (body intelligence), reflecting on experience and learning from it about oneself and others (reflective learning), wisdom and maturity from real life experience, logical knowledge and skills through formal education, training and experience (human capital/cognitive intelligence), and ability and skills to struggle for superiority or victory among rivals/competing persons (human contestability).¹⁴ Thus the human interpersonal

development capabilities dimension of emotional intelligence includes various interdependent factors and the relationships of these factors vary from individual to individual.

Management excellence (ME)

Management excellence is related to relationship management. It is concerned with regard for and awareness of others. It comprises conflict handling, developing other people's potential, objectivity, inspirational leadership, teambuilding, collaboration and cooperation, change catalyst, emotional adaptability and leveraging diversity. By developing our emotional intelligence we can manage our relationship skills effectively and efficiently. Management excellence consists of awareness in knowing and handling other people's emotions, feelings and concerns, the ability to motivate, influence and inspire others and teambuilding, skills of leading and confronting others, understanding in developing others' abilities and developmental needs, abilities in bonding (sharing hopes, fears and vulnerability), collaborating and facilitating with others, skills and knowledge in conflict management, objectivity (looking at matters from a third person's view) and the ability to appreciate or criticise others' actions and compassion, tolerance of differences and commitment. Thus, all these factors are interconnected and overlap in developing emotional intelligence in order to handle relationships successfully by learning from criticism, avoiding judgements and respecting others at work and beyond.

Socio-economic factors (SEF)

Socio-economic factors are the collection of resources, assets or capabilities owned by an individual in a personal socio-economic network which becomes available as an investment in social relations, economic and political awareness. It is an individual level ability to make weak and strong ties to others within a socio-economic political system. Social skills are the most important set of abilities a person can have. They are related to sociability, social understanding and social intelligence. Possession of such skills means being emotionally intelligent at home and in society at large. Communication is needed to access and use social capital through exchanging information, identifying problems and solutions, and managing conflict. It is understood as the networks that a person possesses and that he/she may use for a social integration purpose; it is more the disposition to create, maintain and develop such networks that constitutes real social capital (Van der Gaag, 2005). Individual social capital can be *bonding social capital* and *bridging social capital* (Putnam, 2000). Social capital is observed as being created by the formation of relationships, which in turn are determined by conditions on the individual level (personality traits, personal resource collections, and investments in relationships), the macro-level (political climate, geography), and the interaction of both, i.e. the position of the individual in society. Aggregated to the macro-level, these conditions lead to an unequal distribution of social capital over the population, which for the individual actor lead to a specific 'access to socio-economic resources'.

The dimension of socio-economic factors includes empathy (ability to understand and appreciate another person's feelings), the ability of social self-management (remaining relaxed, building rapport with other people and knowing the extent of self-disclosure while in social situations), individual social capital (capability to make sustainable and strong ties to others within a society), social responsibility (concerns about broader harms to communities, society and the nation, e.g. environmental health, global warming, poverty, etc.), social consciousness (awareness of the problems that different societies and

communities face on a day-to-day basis), economic awareness (transferable skills and understanding of fundamental economic forces and activities which shape our lives), political awareness (skill and capability to understand politics and to be aware of the political environment of a country and its political activities, factors and forces) and communication skills of openly listening and speaking (receiving and sending effective messages).

Building blocks of Kanji-Chopra emotional intelligence model

In the current Kanji-Chopra emotional intelligence model (KCEIM), the psychosocial system provides the foundation for self-emotional skills, intrapersonal development, management excellence, socio-economic factors and an emotional intelligence index. The way these are developed and supported will determine the degree of emotional intelligence; thus it is a major challenge for individuals, leaders and business managers to effectively manage the relationship among the emotional intelligence components.

In this case the latent variable structural model is used to represent the causal relationships among latent variables. The purpose of the approach is to estimate the strength of the causal connections among the latent variables and to test the goodness of fit of the structural model. For the requirements of emotional intelligence evaluation, it is necessary for the system to deliver meaningful results in terms of the causal (cause–effect) relationship and a structural approach; that is to say that the analysis shall be model-based. Structural equation modelling¹⁵ (SEM) provides a means by which relationships can be tested. To estimate the strength of these causal connections, it is necessary for each of the latent variables to be operational in terms of manifest variables (measurement items). In reality, the manifest variables are measured by using measurement items, such as questionnaires; also, they serve as indicators of the latent variable.

A measurement instrument (i.e. questionnaire) is then developed and used to obtain scores from respondents on a variety of attributes that provide an empirical content to the model's constructs. The emotional intelligence index is obtained using structural equation models that simultaneously measure the impact of all the variables on emotional intelligence. SEM traditionally has some assumptions, namely: (1) independence of variables; (2) random sampling of respondents; (3) linearity of all relationships; (4) multivariate normality of distribution; (5) no kurtosis and no skewness; (6) appropriate data measurement on interval or ratio scale; and (7) sample size between 100 and 250.

The importance of meeting these conditions depends on the estimation methods used. Some estimation methods can adjust for the violation of some of these assumptions. Kanji-Chopra emotional intelligence measurement software (KCEIMS) essentially uses the partial least squares (PLS) method in the simultaneous estimation of the weights of the constructs of the emotional intelligence system. It calculates these weights in a way that maximises the goodness of fit of the model and thus the ability to explain emotional intelligence as the ultimate endogenous variable.

The approach used for emotional intelligence measurement reflects, on the one hand, its general aims and purposes and, on the other hand, value-to-cost considerations of developing and operating such a system for the benefit of the global investor. Ensuring integration and alignment between the various systemic subsystems means that emotional intelligence measures must be compatible and deployed in a coherent way within the individual. The general approach for emotional intelligence measurement involves:

- (1) Adopting the KCEI model as the framework for measuring the emotional intelligence against a set of well-established criteria that correspond to the psychosocial emotional environment.

- (2) Identifying the key emotional intelligence contributors from whom the feedback is going to be collected.
- (3) Using suitable questionnaires covering each of the areas of the KCEI model to conduct the assessment exercise.
- (4) Introducing the data collected from the questionnaires in KCEIM software.
- (5) Running the correspondent program files to obtain the systemic system's parameters and scores.
- (6) Analysing the score for each criterion, the overall emotional intelligence index and the relationships among the emotional intelligence measurement criteria.
- (7) Designing and implementing improvement strategies and monitoring their results.
- (8) Repeating the process from the third step.

Theoretical scaffolding of the model

This section discusses the methodological foundations of the KCEI model. The emotional intelligence questionnaire in line with the inner and outer cosmos of an individual is identified as the main instrument employed to measure the emotional intelligence of an individual that adopts the KCEI model. In addition the general advantages and disadvantages of survey methodology, data collection and data analysis are examined using a suitable formula for the emotional intelligence index and KCEIM software.

Finally some key indicators are given regarding Kanji-Chopra software, which is the essential support for the analysis of the emotional intelligence data collected through the questionnaires. This section provides the basis for empirical work with the sole purpose of developing and validating a measurement tool to assess emotional intelligence and the component factors of emotional intelligence in an individual. Results obtained serve as a premise for an empirical study, which has the following objectives:

- (1) To develop a reliable measurement instrument that measures the model's dimensions and emotional intelligence.
- (2) To validate the causal connections in the structural model.
- (3) To examine the causal connections or path coefficients among latent variables.
- (4) To use the model to provide measures of emotional intelligence in terms of an individual's inner and outer cosmos.
- (5) To devise a mechanism for achieving an emotional intelligence target level by increasing the performance of an optimal mix of emotional skills and capabilities.

Because emotional intelligence dimensions cannot be observed directly they are measured by way of a measurement instrument that contains measurement scales pertaining to every emotional intelligence factor. The reliability of the measurement instrument is determined by using Cronbach's alpha. In essence, this item gives a good estimate of reliability. Estimates of path coefficients are determined by using KCEIM software which also computes inner and outer coefficients and coefficient of determination, and reliability of measurements. After the model had been validated, it was used as the measurement instrument to evaluate emotional intelligence. For each dataset all the emotional intelligence dimension indices were computed by using a formula (see Equation 1) that took into account outer path coefficients and mean scores of corresponding manifest variables. These indices were used as performance ratings of emotional intelligence dimensions for the particular dataset.

Factor structure

It is important to study the correlation (causal connections of latent variables) of various factors of emotional intelligence. Path coefficients represent the strength of causal connection specified in the model. There are two categories of path coefficients: those associated with relationships linking manifest variables to latent variables, usually called outer coefficients, and others associated with latent to latent variable relationships, usually called inner coefficients. Before the values of path coefficients can be obtained, the structural equation model must be specified in such a way that the model is 'identified'. Identifying a model involves fixing the values of other coefficients (free parameters) that would result in a unique hypothetical population covariance matrix of manifest variables (James et al., 1982). The least squares estimation method is used to minimise the sum of squared differences between the elements of the sample covariance matrix and the hypothetical population covariance matrix for manifest variables.

Measurement scales reliability

Reliability refers to the consistency and stability of a score from a measurement scale. There are several general methods of determining reliability of a measurement scale. In this research Cronbach's alpha is used to assess the homogeneity of items that belong to the same dimension in the measurement instrument. A Cronbach (1951) alpha value (coefficient) gives a good indication of quality of the measurement scales employed to assess emotional intelligence system. It is a general method that was used to determine the internal consistency of latent variables that are being empirically reflected by manifest variables. It is calculated by using variance of individual questions and covariance between items. The formula is

$$\alpha = \frac{k}{k-1} \left\{ 1 - \frac{\sum \sigma_j^2}{\sum \sigma_i^2 + 2\sum \sigma_{ij}^2} \right\}$$

where k = the number of items in the scale, σ_i^2 = the variance of item i , and σ_{ij}^2 = the covariance of the items i and j . According to Nunnally (1967), a coefficient value of $\alpha = 0.7$ indicates that the measurement scale is reliable. Kenny (1979) suggests that in multivariate cases, the bias due to measurement errors may be negligible if reliabilities of measurement scales are high.

Emotional intelligence indices

The general formula for the emotional intelligence dimensions and emotional intelligence index (EII) has been used as follows (Kanji & Chopra, 2007, 2009):

$$EII = \frac{\sum w_i x_i - \sum w_i}{(N-1) \sum w_i} \times 100 \quad (1)$$

where N = number of points on the scale; x_i = manifest variables; and w_i = outer coefficients. The index value has a range of 0 to 100. Zero indicates no emotional intelligence and the values scores closer to zero indicate the low-emotional intelligence pole of the scale and the scores closer to 100 indicate the high-emotional intelligence pole of the

scale. Kanji-Chopra emotional intelligence measurement software has been specially developed to measure the indices with the help of the above formula.

Data collection and sample size

Collection of data using the questionnaire is the basic tool to measure the emotional intelligence of a person against the model. Since each emotional intelligence dimension corresponds to a concept that cannot be directly measured due to the complex nature of the various indicators of a particular emotional intelligence, it must be translated into a set of indicators that are then converted into items of the questionnaire. Different components of emotional intelligence are typically derived by averaging the opinions of the individuals concerned. The questionnaire should be administered throughout the different subgroups of the target population so that everyone's opinions can be accommodated. Specific questionnaires can be developed for the purpose of getting feedback from the experts also, who will certainly have a say on how well they think individuals are doing emotionally and on what improvement they would like to see.

However, since the principles are universal, demanding that common aspects must be addressed under each criterion, changes should be kept to a minimum as radical changes may jeopardise the model's reliability and the chance of getting meaningful and comparable results. To complete the questionnaire it is necessary only to indicate the extent to which an individual has experienced emotional intelligence in each suggested dimension on a 1 to 10 scale. There are some requirements in terms of the number of questionnaire responses needed to perform the statistical analysis associated with the KCEI model. A number around 250 usually gives the best results, but as a general rule it is possible to run the Kanji-Chopra emotional intelligence index program with a number of responses between 100 and 250. Another recommendation is to use the questionnaire on a regular basis, so that the experts can monitor the development of emotional intelligence over time and anticipate changes. Data thus collected should be analysed without delay in order to identify emotional intelligence and closely control the outcomes of such measurement and the way they are being perceived by the experts and researchers.

Data recording

Inputting the questionnaires' responses using KCEIM software is very simple. All that is needed is the introduction of the data (the questionnaire responses) into the excel spreadsheet (see Table 1). Of course, the spreadsheet must follow a structure that fits the questionnaires (see Table 2), i.e. have exact number of columns to match the number of manifest variables for each of the model dimensions.

Table 1. The procedure of data recording (first two dimensions).

Emotional intelligence											
Psychosocial system				Self-emotional skills							
3	6	4	5	7	8	4	3	4	6	1	6
3	4	10	3	3	5	6	6	6	4	4	5
4	7	4	3	6	7	7	5	4	6	4	5
7	8	1	7	6	6	9	5	5	7	9	8
6	5	5	8	3	5	7	4	4	5	6	6

Table 2. Measurement instrument of emotional intelligence: assessment from an individual.

1. Psychosocial system (PS)											
The extent to which an individual has acquired ...		Not at all					Very much				
Serial no.	Criteria	1	2	3	4	5	6	7	8	9	10
1	Self-knowledge, self-awareness and self-regard										
2	Human self-development capabilities										
3	Excellence in managing relations and others' emotions										
4	Social skills and social intelligence										
5	Capacity to pay attention to psychosocial emotional environment										
6	Existential and spiritual values that matter enough to live or die for and to conquer the soul										
7	Openness to talk about his/her emotions with others										
8	Adaptability and flexibility in handling changing environment										
2. Self-emotional skills (SES)											
The extent to which an individual has acquired/experienced ...		Not at all					Very much				
Serial no.	Criteria	1	2	3	4	5	6	7	8	9	10
1	Self-awareness regarding own feelings, internal state and moods										
2	Emotional self-management, i.e. to skilfully deal with emotions										
3	Emotional self-discipline (controlling one's own desires and keeping disruptive/conflicting emotions and impulses in check)										
4	Emotional assertiveness, i.e. ability to express own feelings without being uncooperative towards others										
5	Emotional independence (knowing own emotions without others' interference)										
6	Emotional resilience (ability to bounce back from the state of adversity, trauma, tragedy, threats)										
7	Ability to act deliberately (intentionality)										
8	Self-regard (accepting and valuing oneself) and regard for others in thinking and doing (assertiveness)										
3. Intrapersonal development (ID)											
The extent to which an individual has acquired ...		Not at all					Very much				
Serial no.	Criteria	1	2	3	4	5	6	7	8	9	10
1	Ability for taking responsibility and initiative for personal performance and development (conscientiousness)										
2	Self-actualisation (ability to realise one's potential)										
3	Creativity in thinking and problem solving										

(Continued)

Table 2. Continued.

4	Intuition (intuitive information) to solve problems										
5	Skills to understand non-verbal clues (facial expression and body language) in people around him/her (body intelligence)										
6	Reflective learning (reflecting on experiences and learning from it about oneself and others)										
7	Logical knowledge and skills through formal education, training and experience (human capital/cognitive intelligence)										
8	Abilities and skills to struggle for superiority or victory among rivals/competing persons (human contestability)										
4. Management excellence (ME)											
The extent to which an individual has acquired ...											
		Not at all Very much →									
Serial no.	Criteria	1	2	3	4	5	6	7	8	9	10
1	Skills and knowledge in conflict management										
2	Understanding in developing others' abilities and developmental needs										
3	Objectivity (looking from third person's view) and ability to appreciate or criticise others' actions										
4	Capability to motivate, influence and inspire others										
5	Capabilities in teambuilding, collaborating and facilitating with others										
6	Capability to bring changes in society or group culture (initiating or managing change, i.e. change catalyst)										
7	Capability to react quickly, appropriately and efficiently to change (emotional adaptability)										
8	Capability to control and manage people with diversity of thoughts, perceptions, ideas, backgrounds and experiences (leveraging diversity)										
5. Socio-economic factors (SEF)											
The extent to which an individual has acquired ...											
		Not at all Very much →									
Serial no.	Criteria	1	2	3	4	5	6	7	8	9	10
1	Awareness in knowing and handling other persons' emotions, feelings and concerns (empathy)										
2	Ability of social self-management (remaining relaxed, building rapport with other people and knowing the extent of self-disclosure while in social situations)										
3	Capabilities to make sustainable and strong ties to others within a society (individual social capital)										
4	Concerns about broader harms to communities, society and nation, e.g. environmental health, global warming, poverty, etc. (social responsibility)										

(Continued)

The assumption that emotional intelligence comprises a set of capabilities that can actually be observed, measured and developed is critical in the development of a structural equation model (SEM). Such a model includes a set of latent variables, each of them translated into manifest variables, which correspond to an item in a questionnaire. The KCEI model includes six main constructs (psychosocial system, self-emotional skills, intrapersonal development, management excellence, socio-economic factors and emotional intelligence) which cannot be directly measured. A set of manifest variables must be associated with each of these constructs, then measured through the development and administration of a suitable emotional intelligence questionnaire. Model questionnaire is given in Table 2, where each of the questions is answered on a scale of 1 to 10 'not at all' to 'very much'.

In our approach, SEM is used to test the postulated causal relationship that forms the KCEI model. It is a multivariate technique combining aspects of multiple regression and factor analysis to estimate simultaneously a series of interrelated dependence relationships. These equation models include one or more linear regression equations that describe how the endogenous constructs depend upon the exogenous constructs; their coefficients are called path coefficients.

The purpose of the approach is to estimate the strength of the causal connections among the latent variables and to test the goodness of fit of the structural model. To estimate the strength of these causal connections, it is necessary for each of the latent variables to be operational in terms of manifest variables (measurement items). The manifest variables are measured by using measurement items, such as questionnaires; in addition, they serve as indicators of the latent variable. A measurement instrument (i.e. questionnaire) is then developed and used to obtain scores from respondents on a variety of attributes that provide the empirical content of the model's constructs. The emotional intelligence index is obtained using structural equation models that simultaneously measure the impact of all the variables on emotional intelligence.

Survey methodology

Questionnaire surveys (see Table 2) have been widely acknowledged as efficient tools for assessing the perceptions of individuals on a particular subject. This does not mean, however, that the weaknesses of this instrument are to be ignored. In social research, one of the central issues for the critics of questionnaires is how it can be guaranteed that the questions will be interpreted by the respondent in the manner required when there is no opportunity for a participatory dialogue in order to reach understanding. These limitations can be overcome through a careful design, as most problems stem from a misunderstanding of the meaning of the concepts covered and a tendency to follow systematic response patterns.

Analysis of data

Data analysis comprises estimating the various parameters of the KCEI model and calculating the indices for each dimension as well as the final emotional intelligence index (EII). Kanji-Chopra emotional intelligence index measurement software automatically calculates all the indices and produces some standard graphics. This software is based on a structural equation modelling technique which combines aspects of multiple regression and factor analysis to give simultaneous estimate of a series of interrelated dependence relationships. Given that all performance aspects are interrelated, the

indices for the different variables of the model are calculated simultaneously according to the whole dataset. Through the results provided, the organisation will know how each criterion impacts on the overall emotional intelligence index (structural or path coefficients) and where improvement efforts are more likely to have a greater impact.

An empirical application of the KCEI model

Data in this example have been collected from a group of 250 different individuals in the UK by using various resources. Final findings and various tables have been presented in order to discuss the validity of the model and its importance. In this illustrative example we have collected some data from the group of respondents in order to implement the KCEI model. Here, we present the main outputs of the Kanji-Chopra software program with some discussion and interpretation of the main results.

Statistical reliability and validity of the KCEI model

The methodology of the Kanji-Chopra emotional intelligence model describes the construct, content and criterion validity of the model. The inner coefficients, inner R-squares, reliability alphas and indices of the survey instrument are analysed in order to assess the quality of the measurement and the suitability of the model.

Inner coefficients of the KCEI model

It is expected that the relationship between the various emotional intelligence measurements and the path coefficients will be positive, emphasising the nature and the principles of the model.

These inner or path coefficients are indications of the relationship between independent and the dependent variables of the model. The values of Table 3 and Figure 4 shows that all coefficients are positive and psychosocial system values are strongly associated with the other factors of the model.

Statistical reliability of the KCEI model

The reliability score alpha for the illustrated example is shown in Table 4. The alpha values of psychosocial system (0.777183), self-emotional skills (0.808407), intrapersonal development (0.88383), management excellence (0.749842), socio-economic factors (0.760234) and emotional intelligence (0.941172) were more than 0.7 indicating that each latent variable did fit the model as a positive indicator. Hence, emotional intelligence measuring model is a good fit.

Table 3. Inner coefficients of the KCEI model.

	PS	SES	ID	ME	SEF	EII
PS	0	0	0	0	0	0
SES	0.868327	0	0	0	0	0
ID	0.783314	0	0	0	0	0
ME	0.741111	0	0	0	0	0
SEF	0.722596	0	0	0	0	0
EII	0	0.076439	0.169478	0.294532	0.429162	0

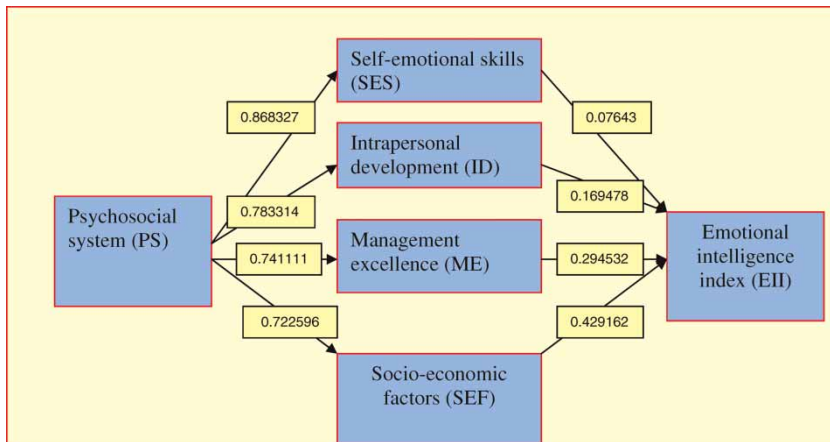


Figure 4. Path coefficients of the KCEI model.

Table 4. Alpha values of the KCEI model.

PS	SES	ID	ME	SEF	EII
0.777183	0.808407	0.88383	0.749842	0.760234	0.941172

Table 5. Inner R-squares of the KCEI model.

Path variables	Inner R-squares
PS – SES	0.7512
PS – ID	0.61358
PS – ME	0.5491
PS – SEF	0.5222
PS – EI	0.8272

The strength of the relationship is a proportion of the regression sum of squares corresponding to latent variables. The coefficient of determination can be used to evaluate the accuracy of a structural model. Table 5 indicates the values for the coefficient of determination for the paths leading up to emotional intelligence index. The higher the value of R-square, the better the model fits the data. The values of R-square resulted vary between 0.5222 and 0.8272. The minimum value of at least 0.65 was considered a reasonably high indication of model accuracy. In this case, except two, the rest of the R-square values were less than the cut-off value of 0.65, meaning that the variations in the model explained less than 65% of the variance. However, given the positive scores of the model, several good correlations could be deducted from the data results.

Outer coefficients of the KCEI model

These outer coefficients show how each question loads into the respective factors in the emotional intelligence model. Table 6 indicates how each variable contributes to the respective factors of the Kanji-Chopra emotional intelligence model.

Table 6. Outer coefficients of the KCEI model.

Outer coefficients					
PS	SES	ID	ME	SEF	EII
0.142025	0	0	0	0	0
0.103536	0	0	0	0	0
0.081336	0	0	0	0	0
0.124241	0	0	0	0	0
0.177689	0	0	0	0	0
-0.00587	0	0	0	0	0
0.10654	0	0	0	0	0
0.473354	0	0	0	0	0
0	0.206421	0	0	0	0
0	0.236475	0	0	0	0
0	0.298533	0	0	0	0
0	0.069234	0	0	0	0
0	0.160871	0	0	0	0
0	0.107911	0	0	0	0
0	0.248559	0	0	0	0
0	-0.02989	0	0	0	0
0	0	0.215764	0	0	0
0	0	0.026572	0	0	0
0	0	0.082029	0	0	0
0	0	0.236326	0	0	0
0	0	0.087714	0	0	0
0	0	0.121588	0	0	0
0	0	0.188336	0	0	0
0	0	0.242614	0	0	0
0	0	0	0.318351	0	0
0	0	0	0.090383	0	0
0	0	0	0.081174	0	0
0	0	0	0.429452	0	0
0	0	0	0.054335	0	0
0	0	0	0.017974	0	0
0	0	0	-0.04649	0	0
0	0	0	0.194724	0	0
0	0	0	0	0.160144	0
0	0	0	0	-0.1494	0
0	0	0	0	0.268322	0
0	0	0	0	0.232094	0
0	0	0	0	0.194229	0
0	0	0	0	0.273376	0
0	0	0	0	-0.03113	0
0	0	0	0	0.218023	0
0	0	0	0	0	0.138983
0	0	0	0	0	0.131033
0	0	0	0	0	0.148022
0	0	0	0	0	0.159806
0	0	0	0	0	0.149309
0	0	0	0	0	0.152851
0	0	0	0	0	0.142235
0	0	0	0	0	0.163255

Emotional intelligence indices

It is relatively easy to interpret the scores obtained for each criterion of the emotional intelligence measurement system. Here the measurement instrument consists of 48 questions

in six dimensions that correspond to the five critical factors and emotional intelligence. Each question uses a 10-point scale on which respondents rate an organisation with respect to emotional intelligence. The analysis of emotional intelligence using partial least squares method provided a measure of strength of causal connection (inner coefficients) between the model's constructs (critical factors). The values of inner coefficients are found to be positive non-zero, providing support for causal connection among critical factors and emotional intelligence. The final emotional intelligence index will reflect the simultaneous effect of all the relationships estimated in the model.

Table 7 and Figure 3 show the values of emotional intelligence indices. The emotional intelligence index for the group of respondents under study is 44.99, which is moderate and represents a low to medium level of emotional intelligence and requires immediate attention to improve it. Although the psychosocial system index is good (55.78) the intrapersonal development index (44.54), management excellence index (46.75) and socio-economic factors index (44.25) have been found to be low to medium which have kept the emotional intelligence index low to medium. Thus in order to improve the emotional intelligence index, the organisation must invest to develop the interpersonal development capabilities, management excellence and socio-economic factors dimensions of emotional intelligence.

Analysis and interpretation of results

The responses to the research questions have to be addressed and mean scores and outer coefficients (weights) are analysed to facilitate the interpretation of the results. The survey questions provide insights to emotional intelligence through the analysis and interpretation of the results. The criterion for making judgement is based on the grading system. The lower index value means low emotional intelligence and vice versa. For example, below 25% will provide a good indication for low emotional intelligence, while 50% will give medium emotional intelligence and 75% will indicate a higher level of emotional intelligence. An index value of above 75% will indicate an extremely high level of emotional intelligence.

Table 7. Indices of emotional intelligence.

Psychosocial system	F1	55.78
Self-emotional skills	F2	54.51
Intrapersonal development	F3	44.54
Management excellence	F4	46.75
Socio-economic factors	F5	44.25
Emotional intelligence index	F6	44.99

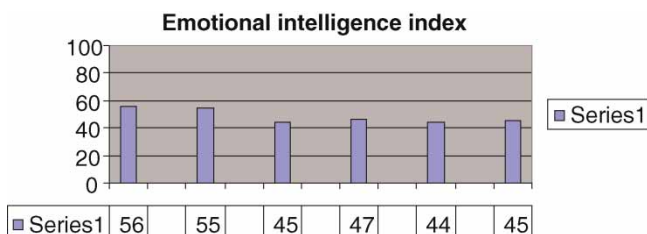


Figure 5. Emotional intelligence indices.

Table 8. Results for psychosocial system.

Serial no.	Criteria	Average score	Outer coefficients
1	Self-knowledge, self-awareness and self-regard	5.96	0.1420
2	Human self-development capabilities	5.78	0.1035
3	Excellence in managing relations and others' emotions	5.51	0.0813
4	Social skills and social intelligence	5.68	0.1242
5	Capacity to pay attention to psychosocial emotional environment	6.04	0.1777
6	Existential and spiritual values that matter enough to live or die for and to conquer the soul	5.79	-0.0058
7	Openness to talk about his/her emotions with others	5.84	0.1065
8	Adaptability and flexibility in handling changing environment	6.30	0.4733

Table 8 shows the eight relationships scores for the psychosocial system. The average scores were 5.96, 5.78, 5.51, 5.68, 6.04, 5.79, 5.84 and 6.30 with corresponding outer coefficients of 0.1420, 0.1035, 0.0813, 0.1242, 0.1777, -0.0058, 0.1065 and 0.4733 respectively. In this illustrative example, the value of outer coefficient of -0.0058 shows that 58% of the respondents do not seem to agree on the point concerning existential and spiritual values that matter enough to live or die for and to conquer the soul in the psychosocial system. On the other hand, 63% of the respondents believe that they have acquired the adaptability and flexibility in handling a changing environment in the overall psychosocial system as revealed by the high positive value of outer coefficient (0.4733). Moreover, 59.6% of the respondents agree that self-knowledge, self-awareness and self-regard contribute to the overall psychosocial system.

Table 7 shows that the self-emotional skills index for the group of individuals is 54.51, which is a moderate level. Table 9 shows the results for self-emotional skills in terms of average scores and outer coefficients of eight manifest variables contributing to emotional intelligence. The outer coefficient of -0.0299 and average score of 3.70 of Table 9 show

Table 9. Results for self-emotional skills.

Serial no.	Criteria	Average score	Outer coefficients
1	Self-awareness regarding own feelings, internal state and moods	7.51	0.2064
2	Emotional self-management, i.e. to skilfully deal with emotions	6.52	0.2364
3	Emotional self-discipline (controlling one's own desires and keeping disruptive/conflicting emotions and impulses in check)	6.61	0.2985
4	Emotional assertiveness, i.e. ability to express own feelings without being uncooperative towards others	4.86	0.0692
5	Emotional independence (knowing own emotions without others' interference)	5.81	0.1608
6	Emotional resilience (ability to bounce back from the state of adversity, trauma, tragedy, threats)	4.93	0.1079
7	Ability to act deliberately (intentionality)	3.65	0.2486
8	Self-regard (accepting and valuing oneself) and regard for others in thinking and doing (assertiveness)	3.70	-0.0299

that 37% of the respondents are not sure whether self-regard and regard for others in thinking and doing (assertiveness) forms a part of their innate emotional intelligence. The average score of 7.51 and outer coefficient of 0.2064 show that 75% of the respondents have high self-awareness regarding their own feelings, internal state and moods. Moreover, 65.2% of the respondents possess high levels of emotional self-management, i.e. to skilfully deal with emotions. The average score of 6.61 reveals that 66% of the respondents have emotional self-discipline and self-control, i.e. controlling one's own desires and keeping disruptive/conflicting emotions and impulses in check (0.2985). It can be seen that 48.6% of the respondents have an extremely low level of emotional assertiveness, i.e. ability to express own feelings without being uncooperative towards others as indicated by an outer coefficient of 0.0692. Also, 49.3% of the respondents lack emotional resilience, i.e., ability to bounce back from the state of adversity, trauma, tragedy, threats (0.1079). Moreover, only 36.5% of the respondents also have a high ability to act deliberately.

Table 7 shows the intrapersonal development index for our study to be 44.54 which is low to moderate. Table 10 provides further insight into the contribution of the respondents' capabilities to their overall essential emotional intelligence. The outer coefficient of 0.0265 reveals that 34.2% of the respondents have extremely low levels of skills for self-actualisation (ability to realise one's potential). About 50% of the respondents also possess absolutely low levels of ability to use skills to understand non-verbal clues (facial expression and body language) in people around them (body intelligence) as shown by the outer coefficient of 0.0877. The outer coefficient of 0.1216 reflects that above average respondents have contributed a reasonable level of reflective learning (reflecting on experiences and learning from it about oneself and others), whereas logical knowledge and skills through formal education, training and experience (human capital/cognitive intelligence) was found to be relatively a little higher as shown by the outer coefficient of 0.1883. Also, 34% of the respondents have a high ability for taking responsibility and initiative for personal performance and development (conscientiousness) as revealed by an outer coefficient value of 0.2157. More than half of the respondents have used creativity in thinking and problem solving to use their emotional intelligence.

Table 10. Results for intrapersonal development.

Serial no.	Criteria	Average score	Outer coefficients
1	Ability for taking responsibility and initiative for personal performance and development (conscientiousness)	3.40	0.2157
2	Self-actualisation (ability to realise one's potential)	3.42	0.0265
3	Creativity in thinking and problem solving	5.00	0.0820
4	Intuition (intuitive information) to solve problems	5.29	0.2363
5	Skills to understand non-verbal clues (facial expression and body language) in people around him/her (body intelligence)	5.15	0.0877
6	Reflective learning (reflecting on experiences and learning from it about oneself and others)	5.78	0.1216
7	Logical knowledge and skills through formal education, training and experience (human capital/cognitive intelligence)	5.75	0.1883
8	Abilities and skills to struggle for superiority or victory among rivals/competing persons (human contestability)	5.33	0.2426

Moreover, 53.3% of the respondents have abilities and skills to struggle for superiority or victory among rivals/competing persons (human contestability) as shown by the outer coefficient value of 0.2426.

The management excellence index is 46.75 (Table 7), which is again below 50% representing medium level excellence in managing relations. Table 11 reveals that there seems to be some confusion among respondents on the capability to react quickly, appropriately and efficiently to change (emotional adaptability) as a component of management excellence as revealed by the outer coefficient value of -0.0465 . The outer coefficient of 0.3183 shows that 54% of the respondents have acquired high level of awareness in the skills and knowledge in conflict management. However, the ability to motivate, influence and inspire others was found to be high among 55% of respondents as revealed by outer coefficient of 0.4294. The understanding in developing others' abilities and developmental needs was found to be extremely low among 60% of the respondents as revealed by the outer coefficient value of 0.0904. However, objectivity (looking from a third person's view) and ability to appreciate or criticise others' actions (0.0811), capabilities in team-building, collaborating and facilitating with others (0.0543) and capability to bring changes in society or group culture (initiating or managing change, i.e. change catalyst) (0.0179) were found to be really low among the respondents. Although the other factors are low, however, the capability to control and manage people with diversity of thoughts, perceptions, ideas, backgrounds and experiences (leveraging diversity) among 43.6% of the respondents is high as revealed by the outer coefficient of 0.1947.

The socio-economic factors index is 44.25% (Table 7) which is less than 50% and requires careful assessment and support. Table 12 reveals the results for the components of socio-economic and political construct of emotional intelligence. The outer coefficient value of -0.0311 reveals the fact that there is no agreement among respondents regarding political awareness as a major contributing factor towards overall emotional intelligence. Moreover the -0.1494 value of outer coefficient reveals that 44.7% of the respondents do not seem to agree the fact that ability of social self-management (remaining relaxed, building rapport with other people and knowing the extent of self-disclosure while in social situations) is contributing much to the overall emotional intelligence of individuals in this case study.

Table 11. Results for management excellence.

Serial no.	Criteria	Average score	Outer coefficients
1	Skills and knowledge in conflict management	5.39	0.3183
2	Understanding in developing others' abilities and developmental needs	6.07	0.0904
3	Objectivity (looking from third person's view) and ability to appreciate or criticise others' actions	5.02	0.0811
4	Capability to motivate, influence and inspire others	5.52	0.4294
5	Capabilities in teambuilding, collaborating and facilitating with others	3.43	0.0543
6	Capability to bring changes in society or group culture (initiating or managing change, i.e. change catalyst)	5.00	0.0179
7	Capability to react quickly, appropriately and efficiently to change (emotional adaptability)	4.94	-0.0465
8	Capability to control and manage people with diversity of thoughts, perceptions, ideas, backgrounds and experiences (leveraging diversity)	4.36	0.1947

Table 12. Results for socio-economic factors.

Serial no.	Criteria	Average score	Outer coefficients
1	Awareness in knowing and handling other persons' emotions, feelings and concerns (empathy)	4.04	0.1601
2	Ability of social self-management (remaining relaxed, building rapport with other people and knowing the extent of self-disclosure while in social situations)	4.47	-0.1494
3	Capabilities to make sustainable and strong ties to others within a society (individual social capital)	4.97	0.2683
4	Concerns about broader harms to communities, society and nation, e.g. environmental health, global warming, poverty, etc. (social responsibility)	5.42	0.2321
5	Social awareness and understanding of social problems (social consciousness)	4.78	0.1942
6	Economic awareness (capability to know and manage economic issues)	4.82	0.2734
7	Political awareness	4.93	-0.0311
8	Communication skills of openly listening and speaking (receiving and sending effective messages)	5.25	0.2180

The awareness in knowing and handling other persons' emotions, feelings and concerns (empathy) has been found to be low (0.1601) among 40.4% of the respondents. About half of the respondents (49.7%) have capabilities to make sustainable and strong ties to others within a society, individual social capital (0.2683). About 54.2% of the respondents have high level of concerns about broader harms to communities, society and nation, e.g. environmental health, global warming, poverty, etc. (social responsibility). Moreover, 47.8% of the respondents have high level of social awareness and understanding of social problems (social consciousness). Economic awareness (capability to know and manage economic issues) was found to be quite high among 48.2% of the respondents. About 52.5% of the respondents have good communication skills of openly listening and speaking (receiving and sending effective messages).

Table 13. Results for emotional intelligence index.

Serial no.	Criteria	Average score	Outer coefficients
1	Decision making ability	4.48	0.1389
2	Ability to express own feelings and gut instincts (emotional expression)	4.44	0.1310
3	Ability to understand that individuals are different with different experiences and requirements	5.62	0.1480
4	Capability to respect other individuals despite their awful actions	5.39	0.1598
5	Understanding that feelings and behaviour are different	5.22	0.1493
6	Understanding that all feelings are justified, important and acceptable	5.16	0.1528
7	Understanding that change is a continuous process and is always possible	5.08	0.1422
8	Knowledge that all individuals have natural tendency to growth and health	4.90	0.1632

As adumbrated earlier, the overall emotional intelligence index was found to be 44.99% (Table 7) that indicates a low to moderate level of emotional intelligence. Table 13 reveals the results for overall emotional intelligence index. It was found that on average 44.8% of the respondents have a reasonable amount of decision making ability; 44.4% of the respondents also have a reasonable amount of ability to express own feelings and gut instincts; 56.2% of the respondents have a reasonable amount of ability to understand that individuals are different with different experiences and requirements; 49% of the respondents have a reasonable amount of knowledge that all individuals have natural tendency to growth and health; 53.9% of the respondents have a reasonable amount of capability to respect other individuals despite their awful actions; 52.2% of the respondents have a reasonable amount of understanding that feelings and behaviour are different; and 50.8% of the respondents have a reasonable amount of understanding that change is a continuous process and is always possible.

Concluding remarks

It can be concluded from the empirical application of the KCEI model that adaptability and flexibility in handling changing environment and capacity to pay attention to the psychosocial system were high among respondents. However, the factors of excellence in managing relations and emotions of other people were found to be low. In terms of self-emotional skills, the respondents have shown high levels of self-awareness and self-knowledge regarding own feelings, high levels of emotional self-management, internal state and moods as well as self-control and self-discipline along with creativity in thinking and problem solving. The factors of self-emotional skills such as emotional assertiveness, ability to act deliberately and emotional resilience were found to be very low. Regarding the intrapersonal development capabilities, it was found that the respondents had high levels of reflective learning, cognitive intelligence, conscientiousness and human contestability whereas they possess extremely low levels of skills of self-actualisation and body intelligence. So far as the management excellence dimension of emotional intelligence is concerned, the respondents were found to have high levels of skills in conflict management, capabilities in developing other peoples' skills and capabilities, leveraging diversity skills and capabilities to motivate, influence and inspire other people. However, they possess low levels of objectivity, teambuilding and change catalyst. Regarding the socio-economic factors dimension of emotional intelligence, it was found that the respondents have high levels of individual social capital, social networking, social responsibility, social awareness and understanding of social problems, economic awareness, good communication skills and abilities to get involved in other peoples' business along with uncertainty regarding bigger social concerns and trustworthiness. It was found that the respondents have low levels of awareness in knowing and handling other persons' emotions, feelings and concerns (empathy).

The overall emotional intelligence index was found to be reasonably moderate. It is worth mentioning that emotional support does have a significant impact on an individual's behaviour and emotional management since any emotional abuse (along with physical and sexual) results in lack of self-esteem among sufferers. Emotional intelligence is much more powerful than cognitive skills in solving problems and determining who will be top, emerging as leader, entrepreneur, board director/executive or army general. Emotional intelligence predicts human behaviour as well as academic and work performance. Both inner and outer emotional intelligence overlap each other in the construct of emotional intelligence which is essentially multifaceted, measurable, changeable,

developable and holistic in nature. It can be conceptualised as a set of capabilities, capacities, skills to perceive, manage, assess and evaluate one's own and others' emotions (including differentiating and using them to direct thinking and actions to solve problems), to optimise personal potential and performance, to manage relationships and to develop sociability, economic and political awareness and social understanding. The Kanji-Chopra model looks into emotional intelligence as a wider construct of self-emotional skills, intrapersonal development capabilities, management excellence and society. The model views emotional intelligence as a psychosocial system and measures it by using a system modelling approach by taking into consideration 48 interwoven significant factors grouped into six dimensions. The scales of the KCEI model can be used to find out why some people have greater emotional intelligence than others and can pinpoint the areas in which it can be improved. Thus, the KCEI model provides a means for identification, classification, analysis and then a response to emotional intelligence.

Notes

1. In the last few years researchers have been finding similar examples of sentience and self-awareness across the animal kingdom in species ranging from elephants and dolphins to crows, birds and parrots. Even sheep, cows and pigs appear to be far more self-aware and to lead more emotionally charged lives than we have previously understood. Humans are merely at the top of a spectrum of intelligence across the animal kingdom rather than standing apart from it. See Leake and Warren (2010).
2. Abstract intelligence is an ability to understand and manipulate verbal and mathematical symbols.
3. Concrete intelligence is an ability to understand and manipulate objects.
4. Social intelligence is an ability to understand, relate to people and act wisely in human relations.
5. MacLean first introduced the term 'limbic system' in a paper in 1952 (MacLean, 1952). This portion of the brain derives from 'the old mammalian brain.'
6. Intrapersonal intelligence refers to the capacity to understand oneself, to appreciate one's feelings, fears and self-worth.
7. Interpersonal intelligence refers to the capacity to understand the intentions, motivations and desires of others.
8. Human capabilities include initiation, innovations, competencies and human capacities.
9. Social capital includes sociability, social understanding and social networking.
10. Despite Darwin's (1894) audacious theory of emotion which formed the cornerstone for an entire tradition of inferring human affect from facial expression, thinkers of the second half of the nineteenth century still contended that 'natural' intellectual associations were sabotaged by emotion. The maladaptive perspective maintained its continuity in the twentieth century through the psychoanalytic model. Early personality theorists (Murphy, 1947; Young, 1943) also perpetuated the idea of emotion as a disturbed human condition. Emotional responses enervated the autonomic system, disorganised behaviour, and interfered with normal human enterprise. While later work softened this stand (Leeper, 1948; Young, 1967), the legacy still stood to the extent that even long-range, adaptive responses were preceded by a temporary loss of normally integrated affect. It is no wonder that the idea of the emotions has come to us in language and literature education with such a bad name.
11. The concept of capability comprises capacities, abilities and skills.
12. Erik Erikson discussed eight stages of psychosocial development of human beings from infancy to late adulthood. Erik Erikson believed that every human being goes through a certain number of stages to reach his or her full development, theorising eight stages that a human being goes through from birth to death. His widow Joan Serson Erikson elaborated on his model before her death, adding a ninth stage (old age) to it, taking into consideration the increasing life expectancy in Western cultures.
13. The multidimensional nature of creativity is fuelled by the process of either conscious or unconscious insight. Creativity is a starting point of innovation.

14. The concept of 'human contestability' was developed and applied first by Parvesh K. Chopra (2007) in order to identify the characteristics of the poor in contrast to the non-poor.
15. It is a powerful statistical approach in that it combines the measurement model and the structural equation model into a simultaneous statistical analysis. It provides parameter estimates of the direct and indirect association between observed variables and tests how well a model explains covariance in the data.

References

- Bar-On, R. (1997). *Emotional Quotient Inventory: Technical manual*. Toronto: Multi-Health Systems.
- Bar-On, R. (2006). The Bar-On model of emotional-social intelligence (ESI). *Psicothema*, 18, 13–25.
- Beasley, K. (1987, May). The emotional quotient. *Mensa, The British Mensa Magazine*. Wolerhampton, UK: The British Mensa Society. Retrieved from <http://eqi.org/beasley.htm>
- Bradberry, T., & Greaves, J. (2009). *Emotional intelligence 2.0*. San Francisco, CA: Publishers Group West.
- Bradberry, T., & Su, L.D. (2006). Ability-versus skill-based assessment of emotional intelligence. *Psicothema*, 18, 59–66.
- Brody, N. (2004). What cognitive intelligence is and what emotional intelligence is not. *Psychological Inquiry*, 15, 234–238.
- Chopra, P.K. (2007). *Poverty as human contestability failure*. Leeds: Wisdom House Publications.
- Ciarrochi, J., Chan, A.Y.C., & Bajgar, J. (2001). Measuring emotional intelligence in adolescents. *Personality and Individual Differences*, 31, 1105–1119.
- Cooper, R.K., & Sawaf, A. (1998). *Executive EQ: Emotional intelligence in leadership and organizations*. New York: Perigee Books.
- Cronbach, L.J. (1951). Coefficient alpha and internal structure of tests. *Psychometrika*, 16, 297–334.
- Darwin, C. (1859). *On the origin of species by means of natural selection*. London: John Murray.
- Darwin, C.R. (1872). *The expression of the emotions in man and animals* (1st ed.). London: John Murray.
- Day, A.L., & Carroll, S.A. (2008). Faking emotional intelligence: Comparing response distortion on ability and trait-based EI measures. *Journal of Organizational Behavior*, 29, 761–784.
- Dulewicz, V., & Higgs, M. (1999). Can emotional intelligence be measured and developed? *Leadership & Organization Development Journal*, 20, 242–252.
- Erikson, E.H. (1959). *Identity and the life cycle*. New York, NY: International Universities Press.
- Erikson, E.H. (1968). *Identity, youth and crisis*. New York, NY: Norton.
- Freud, S. (1921). *Delusion and dream*. London: George Allen & Unwin.
- Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. New York, NY: Basic Books.
- Goleman, D. (1995). *Emotional intelligence: Why it can matter more than IQ*. New York, NY: Bantam Books.
- Goleman, D. (1998). *Working with emotional intelligence*. New York, NY: Bantam Books.
- Goleman, D. (2006). *Social intelligence: The new science of social relationships*. New York, NY: Bantam Books.
- Gottfredson, L.S. (1997). Foreword to 'Intelligence and social policy'. *Intelligence*, 24, 1–12, doi: 10.1016/S0160-2896(97)90010-6. Retrieved from <http://www.udel.edu/educ/gottfredson/reprints/1997specialissue.pdf>
- Grubb, W.L., III, & McDaniel, M.A. (2007). The fakability of Bar-On's Emotional Quotient Inventory short form: Catch me if you can. *Human Performance*, 20, 43–59.
- Hochschild, A. (1983, January 30). Vive La Difference, Review of Ivan Illich's *Gender in the New York Times Book Review*, pp. 7.
- James, L.R., Mulaik, S.A., & Brett, J.M. (1982). *Causal analysis: Models, assumptions and data*. Beverley Hills, CA: Sage.
- Kanji, G.K. (2002). *Measuring business excellence*. London: Routledge.
- Kanji, G.K., & Chopra, P.K. (2007). Poverty as a system: Human contestability approach to poverty measurement. *Journal of Applied Statistics*, 34, 1135–1158.
- Kanji, G.K., & Chopra, P.K. (2009). Psychosocial system for work well-being: On measuring work stress by casual pathway. *Total Quality Management & Business Excellence*, 20, 563–580.

- Kaplan, R.M., & Saccuzzo, D.P. (2005). *Psychological testing: Principles, applications, and issues*. Florence: Thomson Wadsworth.
- Kenny, D.A. (1979). *Correlation and causality*. New York, NY: Wiley.
- Leake, J., & Warren, G. (2010, January 17). Smarter than you think. *The Sunday Times*, 14.
- Leeper, R.W. (1948). A motivational theory of emotion to replace emotion as a disorganized response. *Psychological Review*, 55, 5–21.
- MacLean, P.D. (1952). Some psychiatric implications of physiological studies on frontotemporal portion of limbic system (visceral brain). *Electroencephalography and Clinical Neurophysiology*, 4(4), 407–418.
- MacLean, P.D. (1990). *The triune brain in evolution: Role in paleocerebral functions*. New York, NY: Plenum Press.
- Maslow, A.H. (1954). *Motivation and personality*. New York, NY: Harper.
- Mayer, J.D., DiPaolo, M.T., & Salovey, P. (1990). Perceiving affective content in ambiguous visual stimuli: A component of emotional intelligence. *Journal of Personality Assessment*, 54, 772–781.
- Mayer, J., Roberts, R., & Barsade, S.G. (2008). Human abilities: Emotional intelligence. *Annual Review of Psychology*, 59, 507–536.
- Mayer, J.D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. Sluyter (Eds.), *Emotional development and emotional intelligence: Implications for educators*. New York: Basic Books.
- Mayer, J.D., Salovey, P., & Caruso, D.R. (2008). Emotional intelligence: New ability or eclectic traits? *American Psychologist*, 63, 503–517.
- Murphy, G. (1947). *A bisocial approach to origins and structure*. New York, NY: Harper and Brothers.
- Nunnally, J. (1967). *Psychometry theory*. New York, NY: McGraw-Hill.
- Paul, A.M. (1999). Promotional intelligence. Retrieved from <http://www.salon.com/books/it/1999/06/28/emotional>
- Payne, W.L. (1985). *A study of emotion: Developing emotional intelligence; self-integration; relating to fear, pain and desire (theory, structure of reality, problem-solving, contraction/expansion, tuning in/comingout/letting go)*. (Unpublished doctoral dissertation). The Union for Experimenting Colleges and Universities, Cincinnati, OH.
- Pert, C.B. (1997). *Molecules of emotion*. New Jersey: Prentice Hall.
- Petrides, K.V., & Furnham, A. (2000). On the dimensional structure of emotional intelligence. *Personality and Individual Differences*, 29, 313–320.
- Petrides, K.V., & Furnham, A. (2001). Trait emotional intelligence: Psychometric investigation with reference to established trait taxonomies. *European Journal of Personality*, 15, 425–448.
- Petrides, K.V., & Furnham, A. (2003). Trait emotional intelligence: Behavioural validation in two studies of emotion recognition and reactivity to mood induction. *European Journal of Personality*, 17, 39–75.
- Petrides, K.V., Furnham, A., & Mavroveli, S. (2007). Trait emotional intelligence: Moving forward in the field of EI. In G. Matthews, M. Zeidner, & R. Roberts (Eds.), *Emotional intelligence: Knowns and unknowns* (Series in Affective Science). Oxford: Oxford University Press.
- Petrides, K.V., Pita, R., & Kokkinaki, F. (2007). The location of trait emotional intelligence in personality factor space. *British Journal of Psychology*, 98, 273–289.
- Putnam, R. (2000). *Bowling alone: The collapse and revival of American community*. London: Simon & Schuster.
- Roberts, R.D., Zeidner, M., & Matthews, G. (2001). Does emotional intelligence meet traditional standards for an intelligence? Some new data and conclusions. *Emotion*, 1, 196–231.
- Ruisel, I. (1992). Social intelligence: Conception and methodological problems. *Studia Psychologica*, 34, 281–296.
- Salovey, P., & Grewal, D. (2005). The science of emotional intelligence. *Current Directions in Psychological Science*, 14, 281–285.
- Salovey, P., & Mayer, J. (1990). Emotional intelligence. *Imagination, Cognition, and Personality*, 9, 185–211.
- Scherer, K.R. (1994). Plato's legacy: Relationships between cognition, emotion, and motivation. Retrieved from http://www.affective-sciences.org/system/files/1995_Scherer_Genstudies_Plato.pdf

- Schutte, N.S., Malouff, J.M., Hall, L.E., Haggerty, D.J., Cooper, J.T., Golden, C.J., & Dornheim, L. (1998). Development and validation of a measure of emotional intelligence. *Personality and Individual Differences*, 25, 167–177.
- Smith, N.D., & Sanderman, D. (2005). Rethinking Socrates. Retrieved from <http://legacy.lclark.edu/dept/chron/socratess04.html>
- Sparrow, T., & Knight, A. (2006). *Applied emotional intelligence*. Chichester: Wiley.
- Steiner, C. (1984). Emotional literacy. *Transactional Analysis Journal*, No. 03.
- Tett, R.P., Fox, K.E., & Wang, A. (2005). Development and validation of a self-report measure of emotional intelligence as a multidimensional trait domain. *Personality and Social Psychology Bulletin*, 31, 1–30.
- Thorndike, E.L. (1911). *Animal intelligence*. New York, NY: Macmillan.
- Thorndike, E.L. (1920). Intelligence and its use. *Harper's Magazine*, 140, 227–235.
- Thorndike, R.L., & Stern, S. (1937). An evaluation of the attempts to measure social intelligence. *Psychological Bulletin*, 34, 275–284.
- Thurstone, L.L. (1924). *The nature of intelligence*. London: Kegan Paul, Trench and Trubner.
- Van der Gaag, M. (2005). *Measurement of individual social capital*. Amsterdam: F&N Boekservices.
- Wechsler, D. (1940). Non-intellective factors in general intelligence. *Psychological Bulletin*, 37, 444–445.
- Young, P.T. (1943). *Emotion in man and animals: Its nature and relation to attitude and motive*. New York, NY: Wiley.
- Young, P.T. (1967). Affective arousal: Some implications. *American Psychologist*, 22, 32–40.

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