

TECHNICAL MANUAL & USER GUIDE

EMOTION 2.1

This manual has been created by the psychologists from the Research and Development department of Central Test.

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Introduction

Emotional Intelligence can be defined as the ability to understand one's own, as well as other people's, emotions, and to manage them in an appropriate way. It is essential for personal fulfilment and professional success, and high levels of emotional intelligence are beneficial to an individual's personal and professional life as well as fundamental for serving as a contributing member of an organisation.

EMOTION 2.1 is a tool designed to assess a person's level of emotional intelligence. This includes the ability to perceive, understand and manage one's own emotions, as well as those of others. **EMOTION 2.1** is also designed in a manner that effectively meets the demands of recruitment.

The origins of Emotional Intelligence can be traced back to 1990, with the work of American researchers Peter Salovey and John Mayer. They gathered the expressions of many behavioural and cognitive abilities that are strongly intertwined, such as:

- Recognising one's emotions and understanding them
- Managing one's emotions, especially those that have a depressive or disruptive effect
- Using one's emotions to serve a goal
- Identifying the emotions of others and sharing one's own emotions
- Managing other people's emotions

General Intelligence is important for problem-solving; however, it is most beneficial to a person's professional and personal life when coupled with emotional intelligence. A certain level of emotional intelligence is crucial during instances when people must work together towards a shared goal, particularly in the corporate world. Furthermore, it is necessary for a person's efficacious adaptation to new situations.

Salovey and Mayer (1990) described Emotional Intelligence as "a form of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them, and to use this information to guide one's thinking and action". People with a high emotional intelligence score react better to social changes, perceive things accurately, understand other people and assess their emotions, and build supportive social networks. A high level of emotional intelligence also provides good judgement when it comes to selecting work that is emotionally rewarding. In this way, emotionally intelligent individuals avoid procrastination, self-doubt, and low levels of achievement, and strive to reach a balance between their personal and professional life, to be self-motivated, and to manage their goals well.

This Technical Manual and User Guide will enable you to understand the theoretical foundations on which **EMOTION 2.1** is based, the 15 factors that comprise it, and the manner in which the questionnaire is designed and structured. This manual and guide will also help you familiarise yourself with the stages of test administration, report interpretation and applications in various organisational contexts.

1. General Description and Applicability

EMOTION 2.1 assesses two dimensions of emotional intelligence; *Interpersonal* and *Intrapersonal Intelligence*. Within these two dimensions are 15 factors; each capturing a different aspect of emotional intelligence. Additionally, a Social Desirability scale is also incorporated into the assessment.

The definitions of *Interpersonal* and *Intrapersonal Intelligence*, as well as each of the factors that are found within them, are shown below:

Interpersonal Intelligence refers to the emotional factors which enable an individual to effectively understand and interact with others socially.

1. **Assertiveness** refers to the ability to be bold in articulating one's opinion and standing up for what one believes in, even to the extent of causing a disagreement. Assertive individuals are able to confront those that they do not agree with, and assert their point of view effectively.
2. **Dealing with Diversity** is the ability to recognise, acknowledge and accept differences in others. Individuals who deal well with diversity value differences and see the benefits that can come from variety in their environment. As a result, they are comfortable and efficient when working with people who come from different backgrounds and have different working styles.
3. **Empathy** is the ability to identify, understand and relate to the emotions and reactions of others. Empathic individuals are able to make sense of and associate with others' feelings, even when such emotional cues are not expressed explicitly, by reacting suitably and in accordance to how others are feeling.
4. **Expressing Emotions** refers to the ability to feel comfortable when conveying how one feels, both verbally and non-verbally. Individuals with this ability are able to express their emotions to other people, in the knowledge that this will help them work through any difficulties with the help and advice of others.
5. **Mediation** refers to the ability to mediate and reconcile diverging points of view, in situations of disagreement or conflict. Individuals with the capacity to mediate are able to look objectively at a situation and find the right words to bring opposing parties together.
6. **Motivating Others** is the ability to encourage and stimulate others into achieving goal-oriented behaviour. Individuals with this competence are able to generate positive emotions and consider what will drive others, in order to inspire them to reach their targets, even after adversities.

7. **Tactfulness** is the ability to put forward one's views in a delicate manner, while being considerate of the effect one's opinions have on other people's feelings or positions. Tactful individuals are able to subtly portray their opinions in a diplomatic way, while remaining sensitive to other people's feelings.

Intrapersonal Intelligence encompasses those factors which are critical in order for an individual to fully understand and cope effectively with their emotions.

1. **Optimism** refers to the ability to face situations and problems with a positive attitude and thought process, and to focus on the best possible outcome of any situation. Optimistic individuals are more likely to seize opportunities and make the best of bad situations.
2. **Resilience** is the ability to quickly recover from adversity and failure. Individuals with this ability do not let themselves ruminate or dwell over past mistakes, and are able to swiftly bounce back from bad experiences.
3. **Flexibility** refers to the ability to adapt one's thinking process and emotions, in order to accommodate new standards and situations. With this also comes the ability of an individual to let go of habits and routines, in order to adapt to unknown surroundings.
4. **Self-confidence** is the ability to have a strong belief in oneself and one's capabilities. Individuals with self-confidence do not often doubt themselves; they are able to trust their skills and judgements when others may not, and in novel or challenging situations.
5. **Self-control** is the ability to restrain impulses and regulate reactions, while thinking clearly and maintaining adaptive behaviour. In difficult situations, self-control allows individuals to compose themselves and prevent their emotions from taking over and influencing their behaviour.
6. **Self-knowledge** is the ability to be aware of and understand oneself and one's emotions, needs and desires. It allows individuals to identify and realise how they feel and in turn, know what is best for them even in new and emotionally demanding situations.
7. **Self-motivation** is the ability to find within oneself the drive to reach an end goal, despite obstacles and without needing to rely on external stimulation. Being enthusiastic and having a positive attitude are crucial elements for individuals to move forward and progress independently, without requiring the encouragement of others.
8. **Self-regard** is the ability to realistically appraise one's worth, including both strengths and limitations. Individuals with this competence are able to see

themselves for who they are, focus on their strengths and accept their weaknesses, thus freeing themselves from being affected by other people's criticism.

1.1. Main Areas of Application

Applications of **EMOTION 2.1** can vary, as it is suitable for individuals, teams, and organisational assessment. It can be applied to employee recruitment, selection, and development processes, as well as for team and individual development, and for culture and employee audits.

After completing **EMOTION 2.1**, a report is provided detailing the results of the assessment, which provides a normative emotional intelligence score with a graphical representation of the person's emotional intelligence. The test-taker is also provided with a summary of his/her emotional profile and the areas that he/she can work on to develop higher emotional intelligence. An additional, more in-depth series of developmental tips can be found in the report section entitled "Developmental Comments"; these are easily applicable, concrete steps for the test-taker's five lowest-scoring factors, that can be applied to day-to-day life. Lastly, the report includes a social desirability indicator to assess the validity of the test-taker's responses.

1.2. Questionnaire Structure

EMOTION 2.1 consists of 15 factors which all measure a different aspect of emotional intelligence. There is an additional factor that serves as a social desirability scale. The final version of the questionnaire is comprised of 100 questions, with each factor containing 6 items. All items are measured on a 5-point Likert scale, where respondents need to specify their level of agreement or disagreement with each item (1 = This does not describe me at all / Strongly disagree, 2 = This describes me a little / Disagree, 3 = Neither agree nor disagree, 4 = This describes me fairly well / Agree, 5 = This describes me very well / Strongly Agree).

This is the most common form of scoring in normative questionnaires and covers the full range of possible responses.

-  Strongly Agree
-  Agree
-  Neither Agree nor Disagree
-  Disagree
-  Strongly Disagree

1.3. Mode of Administration, Languages and Special Requirements

EMOTION 2.1 is administered online and is compatible with all computer systems including Windows, MAC-OS, and Linux. The assessment can be administered remotely and without supervision. Reports are solely generated online; therefore, if the test has been administered on paper, the administrator must manually enter candidates' responses into the *Central Test* client platform to generate a report.

The questionnaire is available in English. For more information on other language availability, please contact the *Central Test* Consulting Service at consulting@centraltest.com.

Designed to be used by individuals from diverse backgrounds, **EMOTION 2.1** can be adapted for those with special needs. It is possible to adjust visual screen specifications, such as increasing the font size and screen display. Test instructions are accessible throughout the duration of the assessment for those who require them. Questions can be revisited and changed as desired. For candidates who are blind or have severe visual impairments, items can be read aloud by a trained administrator.

The average time for completion is 12 to 15 minutes; however, **EMOTION 2.1** does not have a time limit and therefore candidates who need more time to answer the questions can do so freely. Please contact the test publisher for guidance on administering the questionnaire to individuals or groups with special requirements.

1.4. Social Desirability

People are sociable by nature and so are inclined to seek social acceptance. Social desirability is the tendency to present oneself in a manner that will be viewed favourably by others. An individual's need to present themselves in a favourable light negatively impacts test results (Dodou & de Winter, 2014); therefore, it is of utmost importance to control for social desirability in respondents. This is especially true for recruitment purposes, as a candidate will be highly tempted to answer in a way that will impress the recruiter.

In order to control for social desirability, a social desirability scale was constructed for **EMOTION 2.1**. The scale is composed of 12 items, and the questions pertaining to the social desirability scale are similar to the other test items in terms of vocabulary and subject; this was done to ensure they were not easily detected.

1.5. Test-taker Requirements and Recommendations

EMOTION 2.1 was designed for members of the general population over 18 years of age, that are currently working or looking for work. It is recommended that candidates receive a notification of the objective of the assessment, the conditions it will be administered in,

how data will be handled and stored, and how the feedback will be delivered. Potential candidates should also be asked beforehand whether they have any special needs or requirements.

1.6. Administrator Qualifications and Recommendations

In order to administer **EMOTION 2.1**, practitioners must complete a standardised training course and/or possess accredited testing qualifications.

The aim of the training is to ensure that the test user knows how to:

- Administer the assessment in standardised conditions
- Interpret scores and norms
- Generate written and verbal feedback from the results
- Match the results to a range of organisational needs

Prior to any administration, it is recommended that administrators take **EMOTION 2.1** themselves; doing so will enable them to become familiar with it.

Test administration must be in accordance with the organisation's code of practice and legal regulations on the use of psychometric assessments for employment purposes. It is recommended that international and country laws, such as data protection, discrimination, race and ethnicity relations etc., are taken into account prior to administration. This is to help ensure that the test administration is objective and fair.

Additionally, prior to use, administrators must be familiar with, and adhere to, *Central Test's* conditions of use, Code of Ethics, and Quality Charter. Administrators must ensure that:

- The appropriate test(s) has been chosen to meet the organisational needs
- The candidate is informed about the assessment and its purpose prior to administration
- The candidate has given consent prior to administration
- Appropriate norms are used to interpret results
- The candidate is given feedback on the results
- The results and personal information will be deleted on request by the candidate
- The candidate has given consent prior to personal data or results being transferred to third parties
- Only qualified personnel administer assessments and have access to the data
- Assessment materials and reports are stored securely

For more information about *Central Test's* Code of Ethics, refer to *Central Test's* Quality Charter.

1.6.1. Testing Conditions

EMOTION 2.1 should be administered in a quiet, well-lit and ventilated environment, so as to ensure that the candidate is undistracted and has a pleasant experience, thereby increasing the probability that their responses are accurate. Candidates should be allowed sufficient time to take the assessment and should thus be informed about the length of the questionnaire prior to administration. It is best to refer to the assessment as a questionnaire and not a test to reduce candidates' anxiety levels.

Prior to testing, administrators should ensure that all relevant candidate background information has been collected and verify that the correct candidate is taking the assessment. Candidates receive an email invitation to take the questionnaire, with an embedded link and login details. All web links and login details are unique to a candidate's account. Expiration dates can be set in order to ensure candidates complete the questionnaire within a specific time frame.

EMOTION 2.1 does not have a time restriction; however, time is monitored to allow administrators to know whether a candidate has taken an overly long or short time to complete the questionnaire. Candidates are encouraged to answer questions quickly and spontaneously, in order to provide more accurate answers.

1.7. Technical and Security Issues

The following points serve as guidelines for securely administering **EMOTION 2.1**. These are useful for ensuring that **EMOTION 2.1** is administered in an objective and fair manner. Security specifications are also important for protecting the candidate's information, both during administration and after the completion of the assessment.

1.7.1. Respecting the Ethical Charter

As a publisher of online assessment tools, *Central Test* respects the legal conventions of French labour law and the regulatory provisions resulting from the law of 6 January 1978 pertaining to information technology, files and freedoms: Declaration N°1834067. Additionally, as of 25th May 2018, *Central Test* complies with the GDPR (General Data Protection Regulation) regulations made by the European Parliament & Council.

Test results and personal data cannot be shared with third parties without explicit consent from the candidate. Candidates have the right to access their results and the assessor must grant them access when requested. Furthermore, if the candidate requests it, all data must be permanently deleted; to do so the candidate must contact either the organisation or *Central Test* directly.

1.7.2. Confidentiality and Security

Central Test guarantees the security and confidentiality of data generated during the administration of online tests: access codes are encrypted in the database and cannot be accessed by anyone. Passwords are computationally generated and not visible to companies. A URL rewriting module (secure link generator) has been installed and has transparent parameter passing for the user.

Browsing and data exchanged via the *Central Test* application can be secured and represented by an icon in the form of a padlock in the internet browser. The *Central Test* application has a “GeoTrust SSL TRUE BusinessID” digital signature, issued and certified by GeoTrust®. This certificate protects all *Central Test* assessments from phishing attacks, and serves as proof of our dedication to providing a secure platform.

Invitations to take tests are made via secure links that are of limited use (in terms of numbers and duration). The tests are timed and IP addresses are tracked.

1.7.3. Hardware Architecture and Server Availability

Central Test has a network of ten servers to provide high-quality service. Each server is housed in a specialised data centre featuring:

- Dedicated lines
- A guaranteed bandwidth of 100Mbps (per server)
- Redundant energy sources
- 4-hour Equipment Restoration time
- 2-hour Incident Intervention time
- Monitoring and assistance 24/7/365

Access to the server administration is restricted to an IP address and is password-secured. Data exchanges are secure. *Central Test's* application has been tested on and is compatible with the following browsers: Internet Explorer 8 or newer, Firefox 21 or newer, Google Chrome 30 or newer, and Safari 7 or newer.

1.8. Supply, Conditions and Availability

Conditions of supply and availability vary from country to country. However, the following points generally apply:

- Training is compulsory prior to use and distribution.
- **EMOTION 2.1** can be ordered online or by contacting any *Central Test* customer service representative or local partner worldwide; the same applies to information about prices and related products and services.

2. Conceptual and Practical Scale Development

EMOTION 2.1 was developed using robust theoretical concepts, practical and relevant work requirements and advanced scientific analyses. All items in the item bank were piloted and pretested with professionals from various continents in order to ensure that assessed work behaviours were contemporary, global and culture-free.

2.1. The History and Value of Emotional Intelligence Testing

The theoretical roots of Emotional Intelligence (EI) date back to the early 20th century, when it was referred to as 'social intelligence' and described as the "ability to understand and manage others" (Thorndike, 1920); although the term owes its widespread popularity to Goleman (2000).

As with General Intelligence, there is no consensus on the exact definition of EI; however, main theories share the common concept that Emotional Intelligence is the ability to recognise and regulate one's own and others' emotions (Cherniss & Goleman, 2001). One major distinction between the existing theories of EI is in fact the conceptualisation of the term itself. Ability models stay loyal to this narrow definition, and consider EI as having a specific set of constructs that are necessary to effectively recognise and control emotions; aptitudes that are supposed to overlap with other cognitive abilities (Mayer, Caruso & Salovey, 2000). Trait models, on the other hand, use EI more broadly, as an umbrella term that includes constructs barely or not at all related to cognitive intelligence (Joseph & Newman, 2010); as a composition of intellectual abilities, personality traits and affects (Petrides & Furnham, 2001).

There is a growing amount of research pointing at the importance of Emotional Intelligence in various aspects of life. Schutte, Malouff & Thorsteinsson (2013) found that nearly three times as many academic papers on this topic were published between 2007 and 2012 than between 1995 and 2000, and there are numerous studies suggesting that EI is important for success at work. A meta-analysis by Schlaerth, Ensari and Christian (2013) based on 20 studies that involved 5175 participants found a positive association between EI and constructive conflict management. Another meta-analysis based on a sample size of 5795 found EI to be a good predictor of job performance (O'Boyle et al., 2011). EI has also been shown to be associated with physical and mental health. A meta-analysis by Martins, Ramalho and Morin (2010) which examined data from 19815 participants indicated that EI is a stable and sufficient predictor of mental and physical health. Similarly, Schutte, Malouff, Thorsteinsson, Bhullar and Rooke's (2007) meta-analysis based on 7898 participants found EI to be significantly positively correlated with health. Other studies found EI to be an important factor for sports and relationships. Cricket teams' performance was found to be positively associated with teams' EI scores (Crombie, Lombard & Noakes, 2009). Also, Malouff, Schutte and Thorsteinsson's (2014) meta-analysis found a significant association between EI and romantic relationship satisfaction.

One of the first theories of EI was an ability model by Salovey and Mayer (1990). Salovey and Mayer (1990) identified EI as the “ability to monitor one’s own and others’ feelings and emotions, to discriminate among them, and to use this information to guide one’s thinking and action”. The authors drew their ideas from a wealth of findings across different scientific domains (e.g. evolutionary biology, computer science, and psychology), which involved the identification and understanding of emotions to create their Four Branch Model of EI. The four underlying dimensions that Mayer and Salovey (1997) conceptualised are the following: *Perceiving emotions* is the ability to accurately read others’ emotions (sadness, anger, joy, etc.) from their facial expressions, voice or body language, a crucial base of social communication, and more sophisticated emotional processing. The *use of emotions* to facilitate thought is the ability to harness the power of emotions to aid cognition. Examples of affection-guided cognition can be creativity, or the manifestation of unconsciously processed information in the form of “gut feelings”. *Understanding emotions* is a skill that builds on the perception of emotions and connects them with their behavioural manifestation. It is the analysis and understanding of the emotional motives of people’s actions. *Managing emotions* is the ability to regulate one’s own and others’ emotions in order to help achieve certain social or personal goals.

There are various instruments to measure EI in the framework of the Four Branch Model, the most recent being the Mayer-Salovey-Caruso Emotional Intelligence Test, or MSCEIT (Mayer, Salovey & Caruso, 2002). Mayer and Salovey (1997) considered Emotional Intelligence as an ability, a part of social intelligence. Their model does not doubt the importance of traits in social interactions, but dissociates from them in order to maintain the clarity and cohesiveness of the model.

Other theories, such as the Bar-On Emotional-Social Intelligence (ESI) model (Bar-On & Handley, 2003) and the Goleman model (Goleman, 1998), widened the scope of the investigation to include components not closely related to cognitive abilities. The ESI model conceptualises EI more openly than Mayer and Salovey (1997), as “an array of non-cognitive capabilities, competencies, and skills that influence one’s ability to succeed in coping with environmental pressures and demands” (Bar-On, 1997). Their model includes 15 interrelated social and emotional competencies, skills and facilitators categorised into 5 domains: 1) *Intrapersonal skills*, the ability to be aware of and be able to express oneself, including Self-regard, Emotional Self-awareness, Assertiveness, Independence and Self-actualisation; 2) *Interpersonal skills*, to be socially aware and successfully manage interpersonal relationships, includes Empathy, Social Responsibility and Interpersonal Relationship; 3) *Stress management*, the regulation and management of emotions, includes Stress Tolerance and Impulse Control; 4) *Adaptability*, the management of change, includes Reality-Testing, Flexibility and Problem-Solving; and finally, 5) *General mood*, concerned with self-motivation, includes Optimism and Happiness. The ESI is measured by the Emotional Quotient Inventory (Bar-On, 1997).

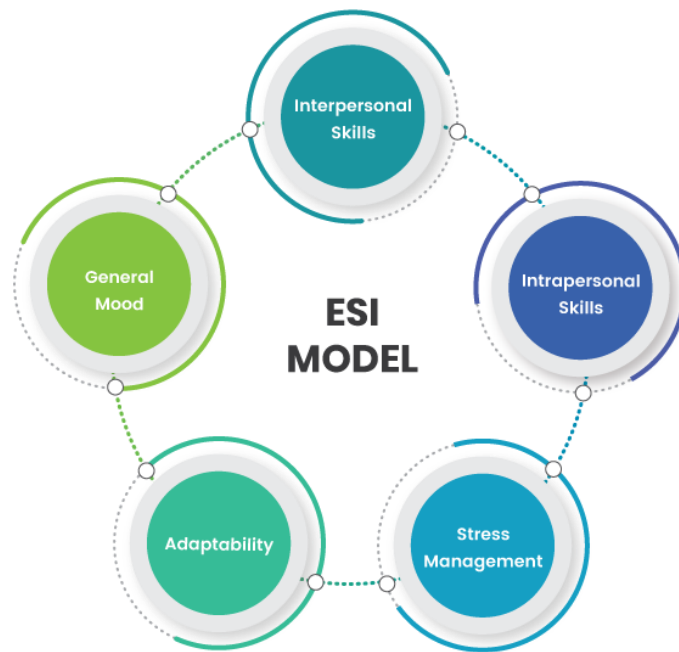


Figure 1. The ESI Model's Five Domains.

Central Test's **EMOTION 2.1** adopts a trait approach similar to the ESI. One of the reasons for this choice is the importance of the EI test to be practical and informative in business environments. For example, the traits selected for **EMOTION 2.1** are all applicable to the workplace and will allow employers to gain a greater understanding of their employees' emotional intelligence, how they will work, and how they will interact with others. Furthermore, Martins et al's (2010) meta-analysis found that when EI was measured as a trait, it was more strongly correlated with health than when it was measured as an ability. *Central Test's* **EMOTION 2.1** measures 15 competencies that provide a more nuanced picture of EI, and is more specific than the Salovey and Mayer's model (1990).

2.2. Theoretical Application

Each of the 15 factors depicted in **EMOTION 2.1** has research to support its importance in everyday life, and therefore enforces the applicability of **EMOTION 2.1**.

Lange & Jakubowski (1976) define assertiveness as standing up for personal rights and expressing thoughts, feelings, and beliefs in direct, honest, and appropriate ways which do not violate another person's rights. This simply means that an assertive person will always be proactive and not reactive no matter how awful the situation he finds himself in. Subsequent research has also revealed positive correlations between assessed emotional intelligence scores and one's positive perceptions, social interactions, and ability to cope in stressful situations (Bar-On, 2006; Mayer & Salovey, 1997). These findings suggest that *Assertiveness* is a construct that is correlated with a person's well-being, performance, and social skills and is therefore included in **EMOTION 2.1**.

Another example comes from recent research which suggests that expressing emotions can promote the well-being of people who are under stress (Stanton & Low, 2012). Brans et al. (2014) found that sharing emotions, like anger or sadness, may lead to beneficial effects. A meta-analysis conducted by Frattaroli (2006) demonstrated an overall positive effect of disclosing emotions and feelings. Sharing emotions is believed to be beneficial in a way that it might result in a catharsis that helps dissolve negative feelings (Scheff, 2007; Littrell, 2008), and expression appears to be a component of almost every therapeutic method (Whelton, 2004). Although empirical evidence is far from conclusive (Brans et al., 2014), and the relationship between expression and negative feelings appears to be very complex (Kennedy-Moore & Watson, 2001; Stanton & Low, 2012), the possible beneficial effect of *Expressing Emotions* makes it reasonable to include this domain in **EMOTION 2.1**.

The three emotional capacities, Self-Reflection, Self-Soothing and Empathy form the foundation for all competencies and skills. They provide the ability to adjust to change, maintain commitments to people, find satisfaction in relationships, and create balance in our emotional lives. The presence or absence of these capacities can have a profound effect on the workplace (Johnson & Erb, 2011).

Furthermore, Scott, Colquitt, Paddock, and Judge (2010) found that managers' empathy had a positive effect on employee well-being, and Kellett, Humphrey, and Sleeth (2002, 2006) found empathy to be the most prevalent predictor of leadership emergence. A study by Sadri, Weber and Gentry (2011) of 37,095 people from 38 countries found that leaders' empathic acts rated by their subordinates correlated with their performances rated by their supervisors. Scientific evidence therefore clearly shows that *Empathy* is an important domain to measure and thus is assessed in **EMOTION 2.1**.

Self-reflection is the ability to identify feelings, sensations, thoughts, values, motivations, pleasures, discomforts, and wants and put them into words. It is the ability to observe one's self, while functioning. It is the capacity to think about one's thinking. It is the capacity to be aware of what you are feeling or wanting or experiencing, while you are actually doing it. In the workplace, without this capacity, individuals have difficulty realizing they have any choice in their actions or believing it is possible to make a different choice (Johnson & Erb, 2011). Thus, this ability as *Self-Knowledge* is included as a domain in **EMOTION 2.1**.

Emotions play a very important role in the search for dispute resolution, but very often are neither understood nor effectively addressed by the parties to the dispute, also not properly controlled and managed by the professionals that are helping the parties to reach peaceful dispute resolution. The effective negotiator or mediator must take into account not only the economic, political and physical aspects of the process, but also the emotional tenor of themselves as well as that of all of the parties (Kelly & Kaminskiene, 2016). Being able to solve conflicts effectively between parties is a valuable skill to possess for both employer and employee, and has a number of benefits such as the satisfaction of disputants (Bush, 1996; Depner, Cannata & Ricci, 1994), their improved relationship (Johnson & Johnson, 1996; Johnson, Johnson, Dudley, Ward & Magnuson, 1995; Joseph,

1996), or improved problem solving (Fisher, 1997; Smith, 1996). Beyond being beneficial for disputants, mediating has certain benefits for the mediator too, such as reputation (Touval, 1996), or improved social skills (Day-Vines et al., 1996; Shulman, 1996). Conflicts at the workplace are inevitable; to be able to mediate between conflicting parties is not only more cost-effective than other ways of solving disputes, but also seems to have a positive effect on all parties involved. It is therefore a very useful skill to possess for anyone and a particularly important one for leaders. Thus, *Mediation* was added as a domain to be assessed in **EMOTION 2.1**.

In a world where migration has become more prevalent than ever due to globalisation, the demographic of countries has been changing and diversity in the workplace is becoming the norm. Some research suggests that diversity at work results in positive outcomes such as innovation (Richard, Barnett, Dwyer & Chadwick, 2004), while others suggest that diversity may have negative outcomes such as staff turnover or lowered profitability (Sacco & Schmitt, 2005); although the general consensus appears to be that diversity has the potential for both (Gonzalez & Denisi, 2009). This is where emotional intelligence comes in. Developing the capacity to understand and manage one's feelings and deal effectively with others, no matter how great the differences, is a critical competence and key to one's professional success. In today's workplace, where it's not uncommon to find four or five generations, multiple languages, many ethnicities and races, and differences in gender, sexual orientation, religion, personalities and values, dealing with differences is a reality and a key requirement (Gardenswartz, Cherbosque & Rowe, 2008). The increasing diversity in the workplace, and the possible benefits and dangers of diversity makes *Dealing With Diversity* an important construct to be measured in a comprehensive and practical Emotional Intelligence test - **EMOTION 2.1**.

Another important area of emotional intelligence measured in **EMOTION 2.1** is *Self-Confidence*, which is of importance in every aspect of life. It is almost always present in people we admire and respect who "have their act together." It consists of a basic belief that we can do what is needed to produce the desired outcome. When obstacles occur, a person with a confident attitude continues to work to overcome the barriers, whereas someone lacking in self-confidence is not likely to persevere and might not even begin something (Sterett, 2014). People's self-confidence affects their choice of tasks (Bandura, 1969). Also, failure may hurt people with low self-esteem more than people with high self-esteem. Dutton and Brown (1997) indeed showed that failure on tasks can result in low self-esteem.

The concept of optimism is related to a person's strength of personality (Pappas, 2010) helping him/her to grow their future and getting success in life with a positive view and expectation of the best possible outcome from the situation (Zetlin, 2013). It is a mental attitude or worldview that one interprets situations or events as being best. Being optimistic has numerous mental and physical health benefits. A meta-analysis by Rasmussen, Scheier and Greenhouse (2009) of 83 studies found optimism to be a predictor of various physical health outcomes. Optimism was also found to predict better job performance (Luthans, Lebsack & Lebsack, 2008). Thus, establishing the necessity of measuring *Optimism* as a domain in **EMOTION 2.1**.

Defining resilience has been controversial, and still, there is not enough consensus regarding a unified description of the construct (Afifi and MacMillan, 2011; Lee et al., 2013). According to Lee et al. (2013), resilience definitions can be grouped into two different perspectives: resilience as a trait vs. resilience as a developmental process. The first group of definitions - resilience as a trait - stated that resilience is the ability to "bounce back." However, these definitions implied that resilience is fixed and stable, and thus unable to explain the adaptation between individuals and the environment (Lee et al., 2012). Conversely, the second group of authors stated that resilience is a dynamic process by which individuals successfully adapt within the context of significant adversity (Luthar et al., 2000; Connor and Davidson, 2003; Masten and Obradovic, 2006; Lee et al., 2013). Within this view, resilience is changeable over time and influenced by protective factors (Dyer and McGuinness, 1996; Connor and Davidson, 2003; Lee et al., 2013). **EMOTION 2.1** assesses this second view of *Resilience* as a dynamic process stating that in fact, resilience can be viewed as the successful adaptation and development to stressful situations (Masten, 2001; Tugade and Fredrickson, 2004). Positive emotions appeared to aid resilient people to deal with daily strain (Tugade & Fredrickson, 2004; Ong et al., 2006). Because stressful events have by nature an emotional component, people's ability to manage emotions may be another critical factor determining resilience (Caston and Mauss, 2011).

Emotional intelligence-related research has become commonplace over the past two decades. Its popularity may be explained by the capacity of emotional intelligence to account for a greater portion of variance in job performance that is unexplained by traditional intelligence. The emotional capacity of employees may play a determining role in their behaviours and performance during interactions with fellow employees and clients. Employees vary in their capacities, attributable in part to their personality traits. A few studies have examined the influence of individual characteristics such as cognitive style and motivation on employee adaptability. Since adaptive behaviour concerns personal interactions and entails an emotional component, employee emotional abilities may help to facilitate adaptability (Prentice & King, 2013). And so, this ability as *Flexibility* is included in **EMOTION 2.1**.

Emotional intelligence can be understood by an ability model. It includes the understanding of emotions and how emotions lead to actions and thoughts. A survey of 231 employees of different universities in Islamabad covered measures of emotional intelligence, motivation, empowerment and organizational structures. The relationships between emotional intelligence and motivation, empowerment and organizational structures were analyzed using correlations and regression analysis and the findings revealed that emotional intelligence has a positive impact on motivation, empowerment and organizational structures (Atiq et al., 2015). The linkage between motivation and emotions has been stated in a vast range of research (Fridja, 1994; Zurbriggen & Sturman, 2002) and motivation is a basic ingredient of a behaviour while developing the concept of emotional intelligence (Goleman, 1998). Motivation is an area of interest for many practitioners and scholars since the last century. Previous literature has divided motivation into two dimensions. In terms of motivating others, management especially

can motivate the employees by using coercive power or use reward power. From 1900 to 1970, management followed two dimensions - one is to be tough and the second to be good. These approaches have significant importance and centre of management while motivating the workforce (Atiq et al., 2015). When it comes to motivating oneself, Mathis and Jackson (1988) discussed that the meaning of "motive" is human emotion or it would be some need that makes him/her act. In a workplace context, the motivation of an employee is divided into two parts - extrinsic motivation and intrinsic motivation. Extrinsic motivation can be explained as "the employees are able to satisfy his needs and wants through some monetary rewards or compensation". Money may be the primary goal that satisfies the individual's needs and wants (Calder & Staw, 1975). Another form of motivation is intrinsic motivation that describes that an individual performs certain tasks for his own sake (Frey & Osterloh, 2002; Ryan & Deci, 2000), which gives psychological advantages of well-being (Ryan & Deci, 2000), and enhancing responsibility (Herzberg, 2003). Considering these scientific evidences, *Motivating Others* and *Self-Motivation* are also assessed as two distinct domains in **EMOTION 2.1**.

One of the cornerstones of emotional intelligence is the skill of emotional self-control. Emotional Self-Control is the ability to keep disruptive emotions and impulses in check, and to maintain one's effectiveness under stressful or even hostile conditions (Boyatzis et al., 2017). Research has shown that people who struggle to keep jobs or excel in their careers, have problems with controlling their impulses, or delaying gratification. And the reverse is also true. People who have good self-control perform better on all kinds of success measures, including productivity and leadership. Thus, establishing *Self-Control* as a domain that is measured in **EMOTION 2.1**.

Self-Regard plays an important role in emotional intelligence and is thus measured in **EMOTION 2.1**. In short, it is an individual's perception of themselves. This self-concept can be an agent and can motivate individuals to take on action. According to Kernis and Paradise (2002), self-regard is divided into three categories: (a) high (positive), (b) low (negative) and (c) middle (neutral). The means of having high self-regard is that an individual has a high idea of oneself. Individuals with low self-regard observe themselves as not important and lower. They always tend to be negative. Sternberg and Vroom (2002) explained that in a successful interpersonal connection, every person has a positive self-regard. In comparison, those who have a low self-regard observe everything to their sense of self. Consequently, these persons are highly reflexive to the events and it may appear that their self-regard is always "on the line" and requires to be secured against apparent threats. Also, a study by Dong et al. (2005) showed that self-regard is positively correlated with emotional intelligence. In other words, individuals with high self-regard tend to have higher emotional intelligence.

Emotional skills are related to the ability to accurately express, read, and understand emotions; all of which are components of emotional intelligence. Research on emotional skills, primarily associated with investigations of nonverbal and emotional communication (Friedman, 1979; Riggio, 2006; Rosenthal, 1979), paved the way for the construct of emotional intelligence. Also, coupled with the ability to express emotions accurately, emotional sensitivity is critical to the development of a strong relationship

between a leader and individual followers (as well as the development of close relationships with supervisors and with managerial peers). Emotional sensitivity is the ability to read and decode others' emotional and nonverbal messages. Originally conceptualized as leader empathy (Bass, 1960, 1990), emotional sensitivity allows leaders to gauge the emotional reactions and general emotional tone of a group. These skills have been likened to "savoir-faire" or "knowing what to do" and is associated with being tactful and socially competent (Eaton et al., 2007), clearly showing that *Tactfulness* is an important domain to measure and is thus assessed in **EMOTION 2.1**.

2.3. Development of EMOTION 2.1

EMOTION 2.1 was developed via a thorough multistage process in a comprehensive and scientific manner. The test is a revision of *EMOTION*, which began its development in 2015, as a result of accrued demand from companies using psychometric assessments in order to provide a "supplementary aid" in the recruitment process. Extensive empirical and theoretical research was conducted to create the dimensions, factors and items. The questionnaire was also pretested several times to ensure that it met the criteria for **EMOTION 2.1** reliability and validity established by internationally recognised psychological institutions. Special attention was also given to guard against social desirability as well as to simplify the ergonomics of the assessment.

The first precursor to **EMOTION 2.1**, *Emotional Intelligence* was developed in 2007, a time when the structure of work was more defined and targeted work competencies more predictable. However, work in the twenty-first century is characterised by more flexible ways of working, cross-cultural teamwork, technological innovation and more complex performance indicators. Therefore, the *Emotional Intelligence-R* was developed in 2014 as a revision to *Emotional Intelligence* and then revised as *EMOTION*, which was further revised as *EMOTION 2* which is followed by **EMOTION 2.1**.

The dimensions, factors and questionnaire items in **EMOTION 2.1** have been reviewed and updated in order to ensure:

- Items reflect contemporary ways of working
- Effective prevention of faking and social bias
- Better candidate experience and score distribution, via a new scoring calibration
- Users have detailed developmental comments, applicable to day-to-day life
- Improved measurement of social desirability
- Practitioners have a tool that improves the accuracy of assessment decisions
- Individuals are clearly guided when assessing fit with desired roles and careers

Using robust theoretical concepts, practical and relevant work requirements and advanced scientific analyses, all the items in the item bank were piloted and pretested with professionals from various countries in order to ensure that the assessed behaviours are relevant to current workplace needs, and are global and culture-free.

2.3.1. Factor and Item Construction

EMOTION 2.1 was developed from the bank of items used in *EMOTION*. The questionnaire underwent a review of all 15 factors, as well as the Social Desirability Scale. **EMOTION 2.1** has a total of 100 items, which are each presented in the form of a Likert scale.

Reviews ensured that the factors identified and items measured were clearly defined, and that each factor and its items correctly targeted and accurately reflected modern and work-relevant behaviours. Thus, the items in this assessment were written to promote ease of response as well as facilitate candidates' mental connection and understanding with statements. As the questionnaire aimed to capture work behaviours in multiple contexts, items were checked for applicability, cultural bias, clarity, offensiveness and language accuracy.

2.3.2. Likert Response Format

EMOTION 2.1 follows the Likert format of responses. The agree-disagree approach of the Likert format allows us to measure behaviours and attitudes that have for decades been ubiquitous in questionnaires of all kinds: market research, opinion polling, major government surveys and academic studies in fields ranging from political science to product design. Not only is it a pleasingly simple way of gauging specific opinions, but it also lends itself very easily to the construction of multiple-item measures (Johns, 2010).

The key to successful measurement in a Likert format is to convey the underlying construct to the respondents, so that they could then choose the response option that best reflects their position on that construct. This straightforward notion is illustrated below in Figure 2.

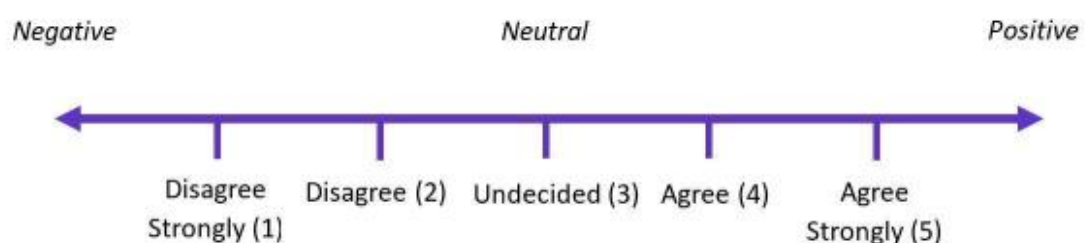


Figure 2. The Basis for Likert Measurement

Attitudes or behaviours towards any object or on any issue varies along the same underlying negative-to-positive dimension. This has three significant implications. First, the method is universally applicable. Second, provided that the response options covered the negative-to-positive dimension, their precise wording could vary. Third, because responses were comparable across different questions - in each case simply reporting how positively or negatively that respondent was disposed to the attitude or behaviour in question - they could be assigned the same numerical codes, as illustrated in Figure 1

above. Furthermore, with multiple items on the same broad object (such as those listed just above), these codes could be summed or averaged to give an indication of each respondent's overall positive or negative orientation towards that object. These advantages of the Likert format - above all, its simplicity and versatility - explain why this approach is ubiquitous.

2.3.3. Factor and Item Reliability

Item reliability is the degree to which items on a questionnaire have no error. The reliability of an item is determined by the internal consistency of the item and its relationship with other items that measure the same factor. Internal reliability was measured using composite reliability generated from item factor loadings. Composite reliability ranges from 0 to 1 with a recommended coefficient of 0.7. For **EMOTION 2.1**, items with the smallest factor loadings were changed or deleted. Modified questionnaires were then trialled with successive pretests.

2.3.3.a. Pretests and Pilot Study

Pretests were conducted with a range of male and female professionals across the globe to ensure items were accurate, relevant, clear, concise, culture-free, and bias-free and that they reflected targeted work behaviours. After 7 English pretests, the final questionnaire was piloted with 446 English-speaking professionals. Pretest samples comprised of English speakers from different continents in order to establish the questionnaire as an international measure of work personality and motivation.

Unlike other emotional intelligence measures, **EMOTION 2.1** was developed to ensure items were culturally equivalent from the early stages of development, rather than focusing on cultural adaption after the questionnaire validity had been established within a single context – the typical practice of test developers.

Composite reliability for each factor was calculated from generated item factor loadings. Factors were flagged if reliability was less than 0.55. Also, factors that did not converge were inspected for poorly-performing items which were then reviewed, modified or changed and then subjected to another round of pretests. The overall scale composite reliability for the Pilot study was 0.81.

3. Scoring

A raw score is the total number of responses endorsed by a candidate for each factor measured. In the context of a work-based assessment, raw scores mean little as they do not provide effective or appropriate comparisons between candidates across a specific interest. Norms enable HR practitioners, managers and recruiters to evaluate an individual's score relative to the score of other delegates who completed the same assessment.

3.1. The Relationship between Raw Scores and Norms

The best norm group is one that is most representative of the characteristics of the individuals taking a test. Applied assessment assumes personality traits, abilities, interests, motivations, values, attitudes and perceptions are distributed along a normal probability or bell-shaped curve. Therefore, norm groups effectively identify individual scores across this distribution. In any given population, levels of a target attribute may be found. Therefore, for a given attribute or trait, the normal curve represents the norm or average performance of a population and the scores that are above and below the average for that population (Kaplan & Saccuzzo, 2008). For norms to be meaningful, the sample used must reflect the intended population of test takers. If a test is developed for engineers, the norm sample must consist of engineers in the population. Similarly, if an assessment was developed for nurses, it is not appropriate for use in the selection of chemists. Norm groups can range in size from a few hundred to a hundred thousand. However, the larger the norm group sample size the closer the approximation to a normal population distribution.

Key to the creation of norms is the conversion of raw scores into derived scores. This process provides a system of common metrics that readily facilitate the interpretation of test scores. For **EMOTION 2.1**, the forms of score standardization used were: 1) Mean; 2) Median; 3) Standard deviation; and 4) Standard error of measurement. Table 1 describes the various types of derived scores used in the validation of **EMOTION 2.1**.

Table 1. Types of Derived Scores used to standardise **EMOTION 2.1**

Sr. No.	Derived Score	Symbol	Definition and Characteristics
1	Mean	μ	The average score of all participants who complete an assessment. The mean is calculated by dividing the sum of all scores by the number of participants. The formula for calculating the Mean is: $\mu = (\sum X) / N,$ where $\sum X$ is the sum of all the population observations, and N is the number of population observations.
2	Median	$\sim x$	The median is the score that separates the highest scores from the lowest. The median can be found by arranging all scores in order from lowest to highest and selecting the score in the middle. Like the mean, the median is a measure of the general tendency of a group of scores.
3	Standard Deviation	Σ	A measure of the amount of variation across scores for candidates who take an assessment. A small standard deviation indicates scores are close to the mean, while a large value tells us there is much variability across individuals. The formula for calculating the Standard Deviation is: $\sigma = \text{sqrt} [\sum (X_i - \mu)^2 / N],$ where μ is the population mean, X_i is the ith element from the population, and N is the number of elements in the population.
4	Standard Error of Measurement	SEM	SEM is related to test reliability and provides an indication of the dispersion of measurement errors associated with test scores from a group of candidates. It helps us to identify level of errors when estimating candidate's true scores from their observed scores. The smaller the SEM, the more accurate the assessments that are being made. The formula for calculating SEM is: $SEM = \sigma \times \sqrt{(1 - \text{reliability})}.$

3.2. Transforming Raw Scores to Standardised Scores

For the 100 items in **EMOTION 2.1**, the minimum and maximum overall score for each factor measured is 0 and 10, respectively. The conversion of raw scores to standardised scores is achieved using a four-step process, as explained below:

Step 1. Raw scores for each attribute are calculated for each scale by summing all responses for each attribute. For each response, the possible scores are 2, 1, 0, -1 and -2, depending on which option on the Likert scale was endorsed.

Step 2. Scores are repositioned on a scale from 0 to 10 by using the following formula:

$$Score = \left(\frac{raw\ score - (min)}{(max) - (min)} \right) * 10,$$

whereby max refers to the maximum possible score of each scale and min refers to the minimum possible score of each scale.

Step 3. To enable comparisons between individuals, percentile rank scores are then computed from the raw scores, and displayed as an additional score for each factor on the report.

3.3. Standard Error of Measurement

No test score is perfect. Therefore, we need an estimate of the possible amount of error present within a score. The amount of error associated with a score is known as the standard error of measurement (SEM). SEM helps us to understand what is a candidate's true score and the extent to which it differs from the obtained score (Harvill, 1991). In an ideal world, the SEM would be calculated by having an individual take an assessment on many occasions over a long period of time. The extent to which there was variation across each score obtained by the candidate would be classified as the standard error of measurement. However, as it is not feasible to assess candidates multiple times, the SEM must be calculated using a different approach.

$$Score = \left(\frac{raw\ score - (min)}{(max) - (min)} \right) * 10,$$

The SEM is an estimate that is added to or subtracted from a candidate's score in order to establish a level of confidence about a score. From this confidence band, we are able to determine the extent to which a score may vary. Standard error of measurement is related to reliability. Therefore, as reliability increases, SEM decreases. For a series of scores, approximately 68% of the time, an observed score will lie within +1.0 and -1.0 SEM of the true score. On 95% of occasions, the observed score will be between +1.96 and -1.96 SEM of the true score. Whilst 99% of the time, the observed score will lie within +2.58 and -2.58 SEM of the true score. The 95% confidence band of a score is calculated using the formula:

$$Confidence\ band = score \pm 1.96 \times SEM$$

Therefore, for **EMOTION 2.1**, a factor with a score of 5 and SEM of 0.2, has a confidence band of 4.608 - 5.392. This means we can be 95% confident that an individual's true score lies in this range.

3.4. Calibration

In order to ensure that scores reflect the candidate's abilities in the truest form, a final calibration to all factor scores is applied, based on the candidate's social desirability score. This is done by breaking down a candidate's social desirability score into five levels (0-2, 2-4, 4-6, 6-8, 8-10), and calculating the mean for each factor, within each social desirability level.

When a candidate takes **EMOTION 2.1**, their factor scores will be calibrated based on the general population mean for their particular social desirability level, using the formula:

$$\text{Calibrated Score} = \frac{[(\text{Raw score} - Mx) + 5] + \text{Raw score}}{2}$$

3.5. Choosing an Appropriate Norm Group

Norms give meaning to an individual's score. The interpretation of the same score may therefore differ depending on whether a score was obtained by a graduate, administrator or manager. For accurate interpretation, it is necessary to compare an individual's score with a group that is most similar to him/her. To choose the appropriate norm, first identify the country of the candidate. Then from that country, identify the age, gender, educational level, number of years work experience, social professional status, and industry or occupational group most appropriate for the candidate. Alternatively, it is possible to create your own internal norms, based on the candidates that have already been assessed.

3.6. Creating In-house Norms

It is possible to generate internal organisational norms if there is a relevant sample of 50 or more individuals. In-house norms ensure that comparisons between individuals and the reference group reflect the target role, tasks and work environment as closely as possible. In-house norms are particularly valuable in situations where standard norms are not available, roles are new, the organisation has a unique client base or business function and in cases where the applicant pool for a role is significantly higher or lower than expected.

To create in-house norms, first calculate the mean and standard deviation for each factor on **EMOTION 2.1** and score the results based on the step-by-step guide outlined in Chapter 3.2. Organisations will then be able to compare individual applicants or employees to a local normal group.

3.7. Link between Scores and Report Comments

Comments on **EMOTION 2.1** reports reflect the scoring process. An individual receives a score of 0 to 10 (as demonstrated in Chapter 3.2.). The comments provide an extensive interpretation of all the factors that are within the two dimensions of the assessment. They are chosen from five levels according to the score of the candidate, and detail individual attributes according to the individual's score. Higher scores are accompanied by stronger descriptors, weaker scores are accompanied by weaker descriptors, and so on. For example, a candidate with a low score on a factor may be described as 'not appearing to have a tendency' in the relevant factor. A high score on the other hand may describe an individual as having 'a strong tendency' in the relevant factor. Scores should be interpreted in relative terms as the order of the targeted profiles is more important than their absolute score.

4. Sample Descriptives

The questionnaire was pretested several times to ensure that it meets the criteria for reliability and validity established by internationally recognised psychological institutions. Pretests were conducted with a large range of male and female professionals across the globe to ensure items were accurate, relevant, clear, and concise and that they reflected the targeted construct. Pretest samples are comprised of 446 English speakers from different continents to establish the questionnaire as an international measure of emotional intelligence.

At *Central Test*, assessments are also continuously subjected to revision to ensure applicability as well as efficiency, and such is also the case with **EMOTION 2.1**. The current revision sample is comprised of 1140 English-speaking professionals across multiple countries and the data were collected from the *Central Test* web platform. This sample was then used to establish the Norms, ANOVA, t-tests and DIF analyses.

To ensure the quality of data obtained, participants whose answers were deemed unreliable or who completed the questionnaire in less than 8 minutes were excluded from the analyses. Tables 2 to 5 provide an overview of the sample descriptives.

Table 2. Descriptives for Gender.

Gender	Percentage (%)	N
Female	27.38	313
Male	72.35	827

Table 3. Descriptives for Age Groups.

Age Group	Percentage (%)	N
18 and below	1.75	20
18-25	35.52	406
26-33	25.20	288
34-41	21.26	243

42-49	11.46	131
52-56	1.66	19
57 and above	1.40	16

Table 4. Descriptives for Study Level

Study Level	Percentage (%)	N
Level 1: Master's Degree, PhD, Engineering or Business School, MBA	26.68	305
Level 2: Bachelor's Degree, First-year Masters	41.56	475
Level 3: 2 years of vocational or university studies	7.26	83
Level 4: high school diploma	6.65	76
Level 5: trades training, no high school diploma	0.96	11
Student	4.99	57

Table 5. Descriptives for Candidates' Country of Origin.

Country of Origin	Percentage (%)	N
India	18.11	207
United States of America	7.52	86
United Kingdom	8.31	95
Pakistan	25.90	296
United Arab Emirates	5.77	66

Others	34.38	393
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5. Norms

Norms help us to compare an individual's score on a test with the scores of others who completed the same assessment, usually under similar conditions. These individuals who took the test at the same time are representative of the population for which an assessment is intended, and are therefore referred to as the norm group. The closer the match between the characteristics of the sample and the target population, the more accurate the distribution will be as a ranking guide. With norms, test developers and psychologists are able to establish comparisons between individuals and make more objective decisions. Norm groups enable us to attribute meaning to test scores and quantify an individual's performance, and level of an attribute or trait relative to his/her peers.

In the case of work-based assessments, norm groups help HR Managers, recruiters and coaches to:

- Determine a candidate's suitability for a role relative to the job specification
- Evaluate a candidate's abilities across a range of desired competencies
- Identify an employee's skill deficits and tailor training for development
- Identify a candidate's potential team and organisational culture fit
- Determine how a candidate is likely to respond to stress or changes in the work environment
- Establish objective metrics of performance

Tables 6 to 9 detail the mean, standard deviation, median, minimum, maximum, range and standard estimate scores for the English-speaking sample on factors, as well as Emotional Quotient for **EMOTION 2.1**. These tables are divided into categories based on age, gender, study level and country of origin.

Table 6. Factor Score Norms for the Whole Sample.

Factor	Mean	SD	Median	Min	Max	Range	SE
Self-Knowledge	6.15	1.68	6.24	0.00	9.49	9.49	0.05
Self-Control	6.07	1.60	6.18	0.00	9.66	9.66	0.05
Self-Regard	5.81	1.43	5.95	0.81	9.26	8.44	0.04
Self-Confidence	6.14	1.60	6.22	0.81	9.52	8.70	0.05
Self-Motivation	6.07	1.59	6.09	0.20	9.39	9.19	0.05

Optimism	6.27	1.42	6.30	0.00	9.05	9.05	0.04
Resilience	5.78	1.68	5.83	0.00	9.73	9.73	0.05
Flexibility	5.67	1.65	5.70	0.20	9.60	9.40	0.05
Expressing Emotions	5.86	2.12	6.21	0.00	9.51	9.51	0.06
Assertiveness	5.76	1.58	5.80	0.00	9.68	9.68	0.05
Empathy	6.08	1.60	6.28	0.20	9.18	8.98	0.05
Tactfulness	6.04	1.64	6.31	0.00	9.21	9.21	0.05
Dealing with Diversity	6.26	1.66	6.48	0.00	9.07	9.07	0.05
Motivating Others	6.23	1.50	6.40	0.20	9.30	9.10	0.04
Mediation	5.98	1.55	6.04	0.20	9.22	9.02	0.05
Social Desirability	2.95	2.34	2.50	0.00	10.00	10.00	0.07
Emotional Quotient	117.9	10.48	118.00	65.00	144.00	79.00	0.31

Table 7. Factor Score Norms by Gender.

Factor	Mean	SD	Median	Min	Max	Range	SE
<i>Females</i>							
Self-Knowledge	5.99	1.81	6.20	0.00	9.49	9.49	0.10
Self-Control	5.92	1.69	6.18	0.47	9.08	8.62	0.10
Self-Regard	5.84	1.38	5.96	1.61	9.26	7.64	0.08
Self-Confidence	6.01	1.61	6.22	1.22	9.52	8.30	0.09
Self-Motivation	5.84	1.64	6.08	0.20	9.39	9.19	0.09

Optimism	6.24	1.53	6.18	0.00	9.05	9.05	0.09
Resilience	5.71	1.66	5.67	0.20	9.73	9.53	0.09
Flexibility	5.67	1.63	5.70	0.90	9.38	8.47	0.09
Expressing Emotions	5.78	2.24	6.21	0.00	9.51	9.51	0.13
Assertiveness	5.52	1.53	5.68	0.85	9.68	8.83	0.09
Empathy	6.33	1.66	6.44	0.20	9.18	8.98	0.09
Tactfulness	6.38	1.57	6.57	0.00	9.21	9.21	0.09
Dealing with Diversity	6.29	1.60	6.58	0.20	9.07	8.88	0.09
Motivating Others	6.27	1.49	6.40	0.20	9.30	9.10	0.08
Mediation	5.81	1.55	5.92	1.32	9.22	7.90	0.09
Social Desirability	2.49	2.11	1.90	0.00	10.00	10.00	0.12
Emotional Quotient	116.52	11.00	117.00	70.00	144.00	74.00	0.62

Factor	Mean	SD	Median	Min	Max	Range	SE
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Males

Self-Knowledge	6.20	1.63	6.24	0.40	9.49	9.09	0.06
Self-Control	6.12	1.57	6.18	0.00	9.66	9.66	0.05
Self-Regard	5.80	1.45	5.91	0.81	9.26	8.44	0.05
Self-Confidence	6.18	1.60	6.22	0.81	9.52	8.70	0.06
Self-Motivation	6.16	1.57	6.10	0.69	9.39	8.70	0.05
Optimism	6.29	1.39	6.30	1.55	9.05	7.50	0.05

Resilience	5.81	1.69	5.83	0.00	9.73	9.73	0.06
Flexibility	5.67	1.66	5.68	0.20	9.60	9.40	0.06
Expressing Emotions	5.89	2.08	6.26	0.00	9.51	9.51	0.07
Assertiveness	5.85	1.60	5.85	0.00	9.68	9.68	0.06
Empathy	5.98	1.57	6.04	0.20	9.18	8.98	0.05
Tactfulness	5.90	1.65	6.11	0.00	9.21	9.21	0.06
Dealing with Diversity	6.24	1.69	6.28	0.00	9.07	9.07	0.06
Motivating Others	6.21	1.50	6.40	0.20	9.30	9.10	0.05
Mediation	6.04	1.55	6.32	0.20	9.22	9.02	0.05
Social Desirability	3.12	2.40	2.50	0.00	10.00	10.00	0.08
Emotional Quotient	117.70	10.27	118.0	65.00	143.00	78.00	0.36

Table 8. Factor score norms by Age Groups.

Factor	Mean	SD	Median	Min	Max	Range	SE
18 and below							
Self-Knowledge	6.39	1.73	6.97	2.40	8.70	6.30	0.39
Self-Control	6.16	2.09	6.67	0.47	9.08	8.62	0.47
Self-Regard	5.90	1.29	6.22	3.32	7.42	4.10	0.29
Self-Confidence	6.57	1.20	6.54	4.52	9.12	4.60	0.27
Self-Motivation	6.03	1.59	5.89	3.59	8.99	5.40	0.36
Optimism	6.51	1.36	6.56	3.65	8.68	5.03	0.30

Resilience	5.88	1.74	5.75	1.43	8.17	6.74	0.39
Flexibility	5.76	1.69	5.80	2.90	8.97	6.07	0.38
Expressing Emotions	5.94	1.98	6.27	0.81	9.51	8.70	0.44
Assertiveness	5.48	1.39	5.68	2.80	7.39	4.60	0.31
Empathy	6.47	1.92	6.73	2.48	9.18	6.70	0.43
Tactfulness	6.65	1.43	7.11	2.51	8.10	5.59	0.32
Dealing with Diversity	6.29	1.91	6.63	1.98	9.07	7.10	0.43
Motivating Others	6.22	1.82	6.34	2.60	8.90	6.30	0.41
Mediation	6.35	1.50	6.52	4.22	9.22	5.00	0.33
Social Desirability	1.88	1.53	1.10	0.30	5.60	5.30	0.34
Emotional Quotient	117.70	10.90	120.00	98.00	136.00	38.00	2.44

Factor	Mean	SD	Median	Min	Max	Range	SE
18-25							
Self-Knowledge	5.76	1.72	5.84	0.00	9.49	9.49	0.09
Self-Control	5.79	1.59	5.96	0.47	9.66	9.20	0.08
Self-Regard	5.51	1.46	5.56	0.81	9.26	8.44	0.07
Self-Confidence	5.66	1.59	5.73	1.22	9.52	8.30	0.08
Self-Motivation	5.79	1.62	5.69	0.20	9.39	9.19	0.08
Optimism	6.03	1.50	6.16	0.00	9.05	9.05	0.07
Resilience	5.45	1.69	5.17	0.20	9.73	9.53	0.08

Flexibility	5.28	1.59	5.30	0.90	9.60	8.70	0.08
Expressing Emotions	5.31	2.29	5.53	0.00	9.51	9.51	0.11
Assertiveness	5.46	1.56	5.45	0.20	9.49	9.30	0.08
Empathy	5.82	1.70	5.99	0.20	9.18	8.98	0.08
Tactfulness	5.91	1.73	6.12	0.00	9.21	9.21	0.09
Dealing with Diversity	5.88	1.76	5.88	0.20	9.07	8.88	0.09
Motivating Others	5.75	1.47	6.00	0.20	9.30	9.10	0.07
Mediation	5.51	1.76	5.40	1.70	9.60	7.90	0.16
Social Desirability	2.89	2.18	2.50	0.00	10.00	10.00	0.11
Emotional Quotient	114.19	10.03	114.00	70.00	141.00	71.00	0.51

Factor	Mean	SD	Median	Min	Max	Range	SE
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26-33

Self-Knowledge	6.23	1.69	6.24	0.80	9.49	8.70	0.10
Self-Control	6.19	1.58	6.36	1.18	9.66	8.48	0.09
Self-Regard	5.98	1.38	5.96	1.61	9.12	7.50	0.08
Self-Confidence	6.27	1.63	6.38	1.22	9.52	8.30	0.10
Self-Motivation	6.10	1.56	6.10	0.69	9.00	8.31	0.09
Optimism	6.37	1.44	6.56	1.16	9.05	7.90	0.09
Resilience	5.91	1.67	6.07	0.20	9.73	9.53	0.10
Flexibility	5.82	1.60	5.90	1.70	9.38	7.68	0.09

Expressing Emotions	6.07	2.02	6.55	0.20	9.51	9.31	0.12
Assertiveness	5.88	1.51	5.80	1.88	9.68	7.80	0.09
Empathy	6.19	1.59	6.30	0.65	9.18	8.53	0.09
Tactfulness	6.26	1.65	6.40	1.25	9.21	7.96	0.10
Dealing with Diversity	6.45	1.59	6.58	1.18	9.07	7.90	0.09
Motivating Others	6.37	1.49	6.68	1.00	9.30	8.30	0.09
Mediation	5.97	1.56	6.04	0.85	9.22	8.37	0.09
Social Desirability	2.89	2.29	2.50	0.00	10.00	10.00	0.13
Emotional Quotient	118.50	10.33	119.00	79.00	144.00	65.00	0.61

Factor	Mean	SD	Median	Min	Max	Range	SE
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34 - 41

Self-Knowledge	6.57	1.58	6.64	0.40	9.49	9.09	0.10
Self-Control	6.27	1.51	6.54	0.00	9.27	9.27	0.10
Self-Regard	6.05	1.43	6.22	1.61	9.21	7.60	0.09
Self-Confidence	6.48	1.57	6.62	0.81	9.52	8.70	0.10
Self-Motivation	6.34	1.57	6.49	1.09	9.39	8.30	0.10
Optimism	6.37	1.33	6.18	1.55	9.05	7.50	0.09
Resilience	6.06	1.64	6.07	0.00	9.37	9.37	0.11
Flexibility	5.96	1.63	5.97	0.20	9.60	9.40	0.10
Expressing Emotions	6.41	1.77	6.72	0.40	9.51	9.11	0.11

Assertiveness	6.06	1.65	6.20	0.00	9.68	9.68	0.11
Empathy	6.25	1.45	6.39	0.20	9.18	8.98	0.09
Tactfulness	5.99	1.59	6.31	0.00	9.21	9.21	0.10
Dealing with Diversity	6.55	1.47	6.58	0.00	9.07	9.07	0.09
Motivating Others	6.52	1.42	6.68	0.20	9.30	9.10	0.09
Mediation	6.33	1.44	6.43	0.20	9.22	9.02	0.09
Social Desirability	3.19	2.59	2.50	0.00	10.00	10.00	0.17
Emotional Quotient	119.93	10.40	120.00	65.00	143.00	78.00	0.67

Factor	Mean	SD	Median	Min	Max	Range	SE
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42-49

Self-Knowledge	6.24	1.53	6.56	2.00	9.05	7.06	0.13
Self-Control	6.18	1.67	6.36	1.36	9.27	7.90	0.15
Self-Regard	5.98	1.30	5.95	3.32	8.71	5.40	0.11
Self-Confidence	6.51	1.28	6.60	2.82	9.12	6.30	0.11
Self-Motivation	6.25	1.50	6.49	1.25	8.61	7.36	0.13
Optimism	6.44	1.27	6.56	2.60	9.05	6.45	0.11
Resilience	5.95	1.58	6.03	1.87	9.37	7.50	0.14
Flexibility	5.93	1.56	5.90	1.30	8.99	7.69	0.14
Expressing Emotions	5.92	2.12	6.21	0.81	9.51	8.70	0.18
Assertiveness	5.89	1.56	5.92	0.85	9.68	8.83	0.14

Empathy	6.12	1.61	6.28	1.25	9.18	7.93	0.14
Tactfulness	6.02	1.48	6.00	2.20	9.21	7.01	0.13
Dealing with Diversity	6.34	1.63	6.58	1.88	9.07	7.19	0.14
Motivating Others	6.65	1.35	6.68	0.85	9.30	8.45	0.12
Mediation	6.40	1.55	6.40	1.48	9.22	7.74	0.14
Social Desirability	3.06	2.50	2.50	0.00	10.00	10.00	0.22
Emotional Quotient	119.24	9.35	119.00	86.00	142.00	56.00	0.82

Factor	Mean	SD	Median	Min	Max	Range	SE
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50-56

Self-Knowledge	6.84	0.94	7.00	5.04	8.35	3.30	0.22
Self-Control	6.68	1.15	6.58	3.87	8.64	4.78	0.26
Self-Regard	5.36	1.41	5.82	2.42	7.82	5.40	0.32
Self-Confidence	7.02	1.46	7.02	4.52	9.52	5.00	0.33
Self-Motivation	6.55	1.49	6.88	3.19	8.59	5.40	0.34
Optimism	6.67	1.36	6.70	3.77	9.05	5.29	0.31
Resilience	6.03	1.41	6.03	3.57	8.97	5.40	0.32
Flexibility	6.63	1.86	6.70	2.67	8.99	6.32	0.43
Expressing Emotions	6.84	1.56	6.72	3.71	9.22	5.51	0.36
Assertiveness	6.63	1.34	6.60	4.50	8.98	4.48	0.31

Empathy	6.75	1.04	6.44	4.97	8.66	3.69	0.24
Tactfulness	5.61	1.59	5.91	3.10	8.66	5.56	0.36
Dealing with Diversity	7.00	1.54	6.97	3.28	8.78	5.50	0.35
Motivating Others	7.26	0.81	7.21	5.88	8.41	2.54	0.19
Mediation	7.13	1.41	7.74	4.70	8.90	4.20	0.32
Social Desirability	3.41	1.83	3.10	0.30	7.80	7.50	0.42
Emotional Quotient	123.63	8.51	123.00	104.00	136.00	32.00	1.95

Factor	Mean	SD	Median	Min	Max	Range	SE
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57 and above

Self-Knowledge	6.01	1.63	6.18	3.23	8.70	5.46	0.41
Self-Control	6.06	2.08	6.28	1.76	8.87	7.10	0.52
Self-Regard	5.59	1.51	5.83	3.32	7.56	4.24	0.38
Self-Confidence	5.56	1.66	5.73	2.42	8.48	6.07	0.42
Self-Motivation	6.41	1.68	6.50	3.60	9.39	5.78	0.42
Optimism	6.77	1.44	6.96	3.10	8.68	5.58	0.36
Resilience	5.36	2.04	5.58	1.43	8.33	6.90	0.51
Flexibility	5.68	2.34	5.40	1.70	9.60	7.90	0.59
Expressing Emotions	6.50	1.75	7.01	3.36	9.51	6.15	0.44
Assertiveness	5.66	1.40	5.54	3.30	8.70	5.40	0.35

Empathy	6.41	1.31	6.28	3.00	8.78	5.78	0.33
Tactfulness	5.95	1.62	6.45	3.23	8.41	5.18	0.40
Dealing with Diversity	6.25	1.50	6.78	3.65	8.18	4.53	0.37
Motivating Others	6.62	1.78	6.40	3.10	9.30	6.20	0.44
Mediation	6.32	1.57	6.72	3.39	9.22	5.83	0.39
Social Desirability	2.23	2.74	1.30	0.00	10.00	10.00	0.69
Emotional Quotient	117.25	11.49	117.00	99.00	138.00	39.00	2.87

Table 9. Factor score norms by Candidates' Country of Origin.

Factor	Mean	SD	Median	Min	Max	Range	SE
India							
Self-Knowledge	6.12	1.63	6.20	0.00	9.49	9.49	0.11
Self-Control	6.15	1.66	6.36	0.20	9.08	8.88	0.12
Self-Regard	6.14	1.40	6.31	2.02	9.21	7.20	0.10
Self-Confidence	6.64	1.53	6.78	1.07	9.52	8.45	0.11
Self-Motivation	6.26	1.50	6.48	1.89	9.00	7.11	0.10
Optimism	6.33	1.36	6.40	2.36	9.05	6.70	0.09
Resilience	6.00	1.74	6.23	0.00	9.73	9.73	0.12
Flexibility	5.62	1.67	5.68	0.90	8.97	8.07	0.12
Expressing Emotions	6.13	2.02	6.61	0.20	9.51	9.31	0.14

Assertiveness	6.13	1.61	6.20	0.40	9.68	9.28	0.11
Empathy	5.98	1.57	6.04	0.20	9.18	8.98	0.11
Tactfulness	5.62	1.49	5.76	0.40	8.81	8.41	0.10
Dealing with Diversity	6.50	1.53	6.58	0.00	9.07	9.07	0.11
Motivating Others	6.45	1.53	6.68	0.20	9.30	9.10	0.11
Mediation	5.61	1.78	5.40	0.80	9.60	8.80	0.25
Social Desirability	4.06	2.69	3.40	0.00	10.00	10.00	0.19
Emotional Quotient	119.77	10.86	120.00	65.00	141.00	76.00	0.75

Factor	Mean	SD	Median	Min	Max	Range	SE
<i>United States of America</i>							
Self-Knowledge	6.70	1.60	7.00	3.30	9.49	6.20	0.17
Self-Control	6.33	1.67	6.36	1.76	9.66	7.90	0.18
Self-Regard	6.34	1.61	6.36	2.02	9.26	7.24	0.17
Self-Confidence	6.43	1.72	6.62	2.02	9.52	7.50	0.19
Self-Motivation	6.55	1.86	6.69	1.89	9.39	7.51	0.20
Optimism	6.31	1.88	6.56	1.55	9.05	7.50	0.20
Resilience	6.01	1.95	5.67	1.83	9.73	7.90	0.21
Flexibility	6.33	1.77	6.47	2.10	9.60	7.50	0.19
Expressing Emotions	6.70	2.35	7.06	0.00	9.51	9.51	0.25

Assertiveness	6.05	1.52	6.08	1.88	9.49	7.61	0.16
Empathy	6.77	1.68	7.08	2.08	9.18	7.10	0.18
Tactfulness	6.27	1.97	6.71	1.05	9.21	8.16	0.21
Dealing with Diversity	6.76	1.66	6.97	2.38	9.07	6.70	0.18
Motivating Others	6.63	1.54	6.80	1.80	9.30	7.50	0.17
Mediation	6.39	1.57	6.42	2.34	9.22	6.89	0.17
Social Desirability	2.05	1.88	1.45	0.00	8.80	8.80	0.20
Emotional Quotient	120.23	11.16	120.00	91.00	144.00	53.00	1.20

Factor	Mean	SD	Median	Min	Max	Range	SE
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United Kingdom

Self-Knowledge	6.53	1.82	6.96	0.00	9.49	9.49	0.19
Self-Control	6.72	1.49	6.94	0.47	9.66	9.20	0.15
Self-Regard	5.95	1.35	5.96	2.82	9.12	6.30	0.14
Self-Confidence	6.48	1.53	6.62	1.22	9.52	8.30	0.16
Self-Motivation	6.76	1.62	6.89	0.20	9.00	8.80	0.17
Optimism	6.64	1.48	6.70	0.00	9.05	9.05	0.15
Resilience	6.34	1.58	6.47	3.03	9.37	6.34	0.16
Flexibility	6.79	1.46	6.89	2.50	9.38	6.88	0.15
Expressing Emotions	6.86	1.80	7.01	1.61	9.51	7.90	0.18
Assertiveness	6.52	1.56	6.60	2.40	9.68	7.28	0.16

Empathy	6.94	1.48	7.08	0.20	9.18	8.98	0.15
Tactfulness	6.73	1.69	7.11	0.00	8.90	8.90	0.17
Dealing with Diversity	7.20	1.26	7.38	0.20	8.78	8.58	0.13
Motivating Others	7.10	1.29	7.20	0.20	8.90	8.70	0.13
Mediation	6.76	1.43	6.72	1.32	9.22	7.90	0.15
Social Desirability	2.19	1.95	1.30	0.00	10.00	10.00	0.20
Emotional Quotient	122.78	10.01	124.00	70.00	143.00	73.00	1.03

Factor	Mean	SD	Median	Min	Max	Range	SE
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Pakistan

Self-Knowledge	5.58	1.54	5.80	0.65	9.05	8.40	0.09
Self-Control	5.60	1.49	5.56	1.76	9.66	7.90	0.09
Self-Regard	5.26	1.28	5.32	1.35	8.45	7.10	0.07
Self-Confidence	5.56	1.33	5.67	1.22	8.97	7.76	0.08
Self-Motivation	5.55	1.40	5.58	1.09	9.39	8.30	0.08
Optimism	5.86	1.33	5.86	2.16	8.68	6.52	0.08
Resilience	5.31	1.48	5.17	0.20	9.73	9.53	0.09
Flexibility	5.08	1.40	5.07	1.70	8.99	7.29	0.08
Expressing Emotions	5.08	2.04	5.12	0.00	9.22	9.22	0.12
Assertiveness	5.25	1.33	5.18	1.59	9.28	7.68	0.08
Empathy	5.52	1.42	5.59	1.27	8.89	7.62	0.08

Tactfulness	5.72	1.45	5.91	0.91	9.21	8.30	0.08
Dealing with Diversity	5.52	1.67	5.78	0.85	9.07	8.22	0.10
Motivating Others	5.48	1.37	5.60	0.85	8.90	8.05	0.08
Mediation	5.36	1.42	5.26	0.92	9.22	8.30	0.08
Social Desirability	3.27	2.18	2.80	0.00	10.00	10.00	0.13
Emotional Quotient	112.70	8.77	113.00	90.00	137.00	47.00	0.51

Factor	Mean	SD	Median	Min	Max	Range	SE
<i>United Arab Emirates</i>							
Self-Knowledge	6.37	1.65	6.78	2.86	9.49	6.64	0.20
Self-Control	6.24	1.52	6.45	1.98	9.08	7.10	0.19
Self-Regard	5.91	1.40	6.22	2.11	8.41	6.30	0.17
Self-Confidence	6.50	1.33	6.62	2.86	8.97	6.12	0.16
Self-Motivation	6.34	1.42	6.49	1.09	8.99	7.90	0.17
Optimism	6.50	1.07	6.35	4.16	8.68	4.52	0.13
Resilience	6.04	1.37	6.07	3.33	9.13	5.80	0.17
Flexibility	5.81	1.26	5.70	1.77	8.99	7.22	0.16
Expressing Emotions	5.90	1.62	5.92	1.72	8.82	7.10	0.20
Assertiveness	5.61	1.45	5.80	1.88	8.88	7.00	0.18
Empathy	5.96	1.37	6.02	2.69	8.54	5.86	0.17
Tactfulness	6.04	1.41	6.12	2.44	9.21	6.78	0.17

Dealing with Diversity	6.42	1.37	6.28	3.28	8.78	5.50	0.17
Motivating Others	6.23	1.27	6.28	2.61	8.78	6.17	0.16
Mediation	5.83	1.56	5.98	1.80	8.90	7.10	0.19
Social Desirability	3.75	2.66	2.95	0.00	9.10	9.10	0.33
Emotional Quotient	119.23	9.00	119.00	97.00	142.00	45.00	1.11

Factor	Mean	SD	Median	Min	Max	Range	SE
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Others

Self-Knowledge	6.33	1.69	6.60	0.80	9.49	8.70	0.09
Self-Control	6.14	1.60	6.36	0.00	9.27	9.27	0.08
Self-Regard	5.89	1.42	5.96	0.81	9.26	8.44	0.07
Self-Confidence	6.10	1.72	6.16	0.81	9.52	8.70	0.09
Self-Motivation	6.04	1.62	6.09	0.69	9.39	8.70	0.08
Optimism	6.43	1.39	6.56	0.85	9.05	8.20	0.07
Resilience	5.79	1.71	6.03	0.20	9.73	9.53	0.09
Flexibility	5.71	1.70	5.90	0.20	9.60	9.40	0.09
Expressing Emotions	5.88	2.12	6.21	0.00	9.51	9.51	0.11
Assertiveness	5.73	1.66	5.80	0.00	9.49	9.49	0.08
Empathy	6.22	1.64	6.39	0.65	9.18	8.53	0.08
Tactfulness	6.28	1.71	6.40	0.00	9.21	9.21	0.09
Dealing with Diversity	6.31	1.65	6.48	1.18	9.07	7.90	0.08

Motivating Others	6.38	1.42	6.40	0.40	9.30	8.90	0.07
Mediation	6.12	1.45	6.32	1.45	9.22	7.77	0.07
Social Desirability	2.36	2.06	1.90	0.00	10.00	10.00	0.10
Emotional Quotient	117.44	10.32	118.00	79.00	141.00	62.00	0.52

6. Reliability

Reliability measures the extent to which an assessment is free from error and the degree to which items on a scale measure the same construct. For example, all of the items that measure Resilience are coherent and reflect the definition of the factor. A primary concern, when developing and using assessments, is the extent to which random measurement errors influence test performance. If a test is unreliable, it is impossible for it to be valid, as the accuracy of results (validity) depends on the consistency (reliability) with which the same results are produced. Reliability enables test users to be confident that the results accurately reflect the test taker's attitude, aptitude or behaviour in the workplace. In the context of a work-based assessment, reliability helps assure test users that the scores obtained reflect how a job candidate or employee is likely to behave in the workplace, interact with others, and work on specific tasks. If an assessment has high reliability, it also helps to guard against biases that may be caused by errors in human judgement during the recruitment and selection process.

6.1. Internal Reliability

Internal reliability measures the extent to which items on a scale are internally consistent and all measure the same construct. Internal reliability is measured by calculating Cronbach's Alpha (α) for each factor, which computes the average of all possible inter-item correlations without relying on a single indicator of reliability, which may contain large amounts of error. Cronbach's Alpha ranges from 0 to 1, with a minimum recommended value of .7 (1 being equal to perfect reliability (Nunnally, 1978)). Values greater than .9 are considered excellent, of .7 to .9 are considered good, of .6 to .7 are acceptable, of .5 to .6 are poor, and values of less than .5 are unacceptable. In order to ensure strong internal reliability for **EMOTION 2.1**, items for factors that obtained a Cronbach's Alpha (α) below .7 were altered during the pre-test stage based on whether their item-factor correlation was below .5 or if the alpha for the factor improved when deleting the item.

The reliability for **EMOTION 2.1** was computed on the English-speaking sample ($n = 446$), and can be seen in Table 10. All the factors showed a composite reliability of above .7, with *Expressing Emotions* at the highest at .89. **EMOTION 2.1** also has an overall reliability of .95, indicating that the scale has excellent internal consistency and is highly reliable.

Table 10. Reliability for all the Factors.

Factor	Reliability
Self-Knowledge	0.81
Self-Control	0.79

Self-Regard	0.73
Self-Confidence	0.83
Self-Motivation	0.81
Optimism	0.80
Resilience	0.77
Flexibility	0.83
Expressing Emotions	0.89
Assertiveness	0.81
Empathy	0.80
Tactfulness	0.84
Dealing with Diversity	0.77
Motivating Others	0.82
Mediation	0.79
Social Desirability	0.80

6.2. Test-retest Reliability

Test-retest reliability involves administering a test twice to the same respondents, under similar conditions, and comparing the results for each individual in order to determine the stability of the test scores over time. The more similar the scores are on the first administration (time 1) to the scores on the second administration (time 2), the greater the reliability. The Pearson Product Correlation Coefficient gives us the correlation between the two administrations, and ranges between 0 and 1. The closer the correlation is to 1, the greater the reliability.

The formula for the Pearson Product Moment Correlation is:

$$r = \frac{\sum_{i=1}^n (X_i - \bar{X})(Y_i - \bar{Y})}{\sqrt{\sum_{i=1}^n (X_i - \bar{X})^2} \sqrt{\sum_{i=1}^n (Y_i - \bar{Y})^2}}$$

where $\bar{x}$ and $\bar{y}$ are the two samples' means, and X and Y are the values of each of the two variables.

For **EMOTION 2.1**, test-retest reliability was calculated on an English-speaking sample ($n = 446$) twice, with an interval of 2-3 weeks. Participants ranged in age from 18 to 84 years (mean = 35.14). Test-retest reliability was computed from individual scores for all factors, and calculated using the Pearson Moment Correlation Coefficient. Table 11 shows the correlation coefficients between time 1 and time 2.

Table 11. Test-retest Reliability for all the Factors.

Factor	Reliability
Self-Knowledge	0.68
Self-Control	0.67
Self-Regard	0.72
Self-Confidence	0.80
Self-Motivation	0.69
Optimism	0.77
Resilience	0.78
Flexibility	0.77
Expressing Emotions	0.80
Assertiveness	0.79
Empathy	0.80
Tactfulness	0.79

Dealing with Diversity	0.74
Motivating Others	0.69
Mediation	0.81
Social Desirability	0.77

The test-retest correlations for **EMOTION 2.1** show good results, with the lowest correlation being at .67, the highest at .81, and the average at .75. It can therefore be concluded that **EMOTION 2.1** is a reliable measure over time, as a person taking the test at two different points in time, will consistently get the same results.

7. Validity

Validity refers to the extent to which an assessment measures what it claims to measure, and that this is well-founded and accurately corresponds to actual behaviour. In psychometrics, validity relates to the degree to which practical evidence and scientific theory support the interpretation of test scores. Whilst the reliability of an assessment relates to the degree to which results are consistent over time, validity tells us the degree to which results of an assessment are accurate and enable us to confidently make predictions about a target outcome. Therefore, a test can be reliable but not valid (one can consistently get the wrong answer) but it cannot be valid without being reliable, as confidence in the accuracy of results depends on the consistency with which we obtain the same results. Established validity protects practitioners from faulty, costly, unethical and legally risky decisions.

Validity is derived from the Latin word 'validus', meaning strong. According to the Standards for Educational and Psychological Testing (Standards; APA, AERA, & NCME, 2014), validation is a process of providing evidence for the scientific basis of interpreting assessment scores. The process of validation, therefore, depends on evidence supporting: a) test content, b) response processes, c) internal structure, d) relations to other variables, and e) consequences of testing. **EMOTION 2.1** was validated by following a thorough multistage process that ensured items and factors were accurate, representative, consistent, clear, fair and culturally-free.

Face validity is a measure of whether an assessment looks like it is measuring what it claims to be measuring, by those who take it (Nevo, 1985). This is an important aspect to take into account in order to obtain the candidate's co-operation and commitment. Face validity and attitudes towards tests influence candidates' motivation, concentration and test-taking anxiety (McCarthy & Goffin, 2003). As a result, the question of 'Does **EMOTION 2.1** look to potential candidates, like it measures an individual's level of emotional intelligence?' was addressed during the creation of the assessment, by way of ensuring that aspects such as the situational questions were not misleading or confusing to the user. The following sections will present, in more detail, further aspects of validity that were taken into account for **EMOTION 2.1**.

7.1. Concurrent Validity

Concurrent validity measures whether a method is concurrent with the results of another similar, tried and tested method. In this case, in order to establish concurrent validity for **EMOTION 2.1**, the components of the assessment must correlate highly with corresponding components on other established emotional intelligence-based questionnaires. Concurrent validity also requires that the two tests are taken at the same time, or with little time between them, so that the correlation is pure and unaltered by changes over time. Table 12 details the results of the concurrent validity study of **EMOTION 2.1** and the IPIP Emotional Intelligence Scale (Gough and Bradley, 1996; Barchard, 2001).

7.1.1. The IPIP Emotional Intelligence Scale

The International Personality Item Pool (IPIP) is a collection of over 3,000 internationally recognised personality items. The project was initiated in 1996 and is available in over 25 languages. The IPIP questionnaire for this study was extracted from the IPIP website (Gough and Bradley, 1996; Barchard, 2001). The IPIP emotional intelligence scale was designed to consist of 50 items, measuring five factors of Emotional Intelligence; Attending to Emotions, Empathic Concern, Negative Expressivity, Optimism (Well-being) and Assertiveness.

Table 12. Factor Correlations between **EMOTION 2.1** and the IPIP Scale.

Factor	Attending to Emotions	Empathic Concern	Negative Expressivity	Optimism (Well-being)	Assertiveness
Self-Knowledge	0.19	0.10	-0.18	0.43	0.40
Self-Control	0.11	0.09	-0.50	0.60	0.30
Self-Regard	0.03	0.10	-0.19	0.54	0.51
Self-Confidence	-0.04	0.03	-0.23	0.56	0.66
Self-Motivation	0.12	0.26	-0.19	0.60	0.49
Optimism	0.16	0.25	-0.29	0.68	0.45
Resilience	-0.12	-0.02	-0.23	0.63	0.41
Flexibility	-0.05	0.11	-0.22	0.50	0.35
Expressing Emotions	0.49	0.38	0.26	0.35	0.50
Assertiveness	0.03	0.06	0.05	0.42	0.48
Empathy	0.50	0.55	0.03	0.29	0.15
Tactfulness	0.52	0.49	-0.12	0.23	0.08

Dealing with Diversity	0.23	0.34	-0.13	0.40	0.19
Motivating Others	0.27	0.27	-0.12	0.42	0.57
Mediation	0.29	0.30	-0.11	0.50	0.53
Social Desirability	-0.14	-0.17	-0.26	0.15	0.21

The correlations shown in Table 12, between the factors of **EMOTION 2.1** and the IPIP scale, show good results. The strongest correlations lie between the factors *Optimism* and the IPIP factor *Optimism* (.68), which is clearly expected, and between the factor *Self-Confidence* and the IPIP factor *Assertiveness* (.66), which can also be expected due to assertiveness often being linked to self-confidence. The third highest correlation is found between *Resilience* and the IPIP factor *Optimism* (.63); this is also a very good result, due to resilience and optimism being hugely linked; the ability to be resilient is largely helped if the individual is optimistic.

A strong negative correlation can be seen between *Self-Control* and the IPIP factor *Negative Expressivity* (-.50). The reasons for this are clear; as an individual's self-control increases, their likelihood to express negative emotions decreases. Secondly, a strong negative correlation can be seen between *Optimism* and *Negative Expressivity* (-.29), which is likely to be a result of optimistic individuals having less need to express negative emotions, due to their more positive thinking.

7.2. Construct Validity

Construct validity measures the degree to which a test measures what it claims to measure. It refers to the appropriateness of inferences made on the basis of observation or measurement. Construct validity is essential to the overall validity (perceived and actual) of a scale and is particularly valuable when there is much subjectivity to concepts. When a construct is not clearly or thoroughly defined, we are unable to make direct inferences between the construct and other behaviours (Cronbach & Meehl, 1955). Often there is no accepted unit of measurement for constructs; even fairly well-known concepts such as intelligence are open to debate. Therefore, the construct validity of a scale may be threatened if the construct is: a) defined as too broad or too narrow, b) mislabelled as a specific dimension of or component within the construct, c) confounded by other related constructs that mask the effects of the main construct, or d) the construct was developed with insufficient research. Therefore, in order to develop a scale that measures emotional intelligence, the construct must reflect known theories that define emotional intelligence, identify the components that it is comprised of and pinpoints positive and negative attributes associated with each dimension. For work-based assessments, construct validity is particularly important as it: a) adds legitimacy and acceptability to the

standardised measurement of employee behaviours, b) facilitates understanding of organisational implications of findings, and c) enables organisations and individuals to tailor interventions to meet desired performance targets. Construct validity addresses the question 'Does **EMOTION 2.1** define and classify work-based emotional intelligence in a way that represents theoretical and practical understanding?' For **EMOTION 2.1**, construct validity was established using two approaches: factor correlations and confirmatory factor analysis.

7.2.1. Inter-factor Correlations

The factors in **EMOTION 2.1** measure emotional intelligence, however, they all measure different factors of emotional intelligence. In other words, if someone scores highly on one factor, it does not mean that they will score highly on all factors. The correlation coefficient is a numerical way to quantify the relationship between two variables, and ranges between -1 and 1. The closer the value to 1, the stronger the relationship. The correlation coefficient does not imply causality; it merely signifies the association between two variables. Traditionally, factor correlations are measured using Pearson correlation (1895).

Table 13. Inter-factor Correlations.

	Self-Knowledge	Self-Control	Self-Regard	Self-Confidence	Self-Motivation	Optimism	Resilience	Flexibility	Expressing Emotions	Assertiveness	Empathy	Tactfulness	Dealing with Diversity	Motivating Others	Mediation
Self-Control	0.49														
Self-Regard	0.38	0.46													
Self-Confidence	0.38	0.52	0.62												
Self-Motivation	0.28	0.48	0.56	0.54											
Optimism	0.36	0.45	0.45	0.51	0.41										
Resilience	0.43	0.51	0.62	0.66	0.49	0.49									
Flexibility	0.27	0.5	0.43	0.51	0.51	0.44	0.49								

7.2.2. Confirmatory Factor Analysis

To investigate the theoretical constructs or factors that may be represented by a set of items as well as the quality of individual items, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) are usually performed. EFA and CFA are both forms of factor analysis. Factor analysis examines the factors (hypothetical constructs) of an assessment which are developed to interpret clusters of strong inter-correlations between items in a correlation matrix. Factor analysis aims to simplify a range of items into a few common variables; these can be identified by extracting and grouping items which have high correlations on a factor to reveal the common variables. The goal of EFA is to identify and maximise the importance of each dimension (percentage of variance), while CFA is a hypothesis-driven approach that determines the degree to which observed indicators reflect the underlying construct by specifying the number of factors expected and then classifying the value of expected relationships (Schreiber et al, 2006). In doing so, CFA provides a numerical estimate of the degree to which the proposed factor structure is an accurate fit of the phenomenon in the real world. CFA therefore investigates the degree to which measures of a construct are consistent with established understanding and theoretical arguments for that construct. A confirmatory factor analysis (CFA) with continuous factor indicators was conducted in order to check the convergence of the results with the model of the assessment. CFA is a form of factor analysis used to measure whether a construct is consistent with its intended meaning. There are two key approaches to confirming the factor structure of a scale. A strict confirmatory approach is one in which a model is tested using structural equation modelling (SEM) goodness of fit tests to determine if the model specified by the research is consistent with the data. On the other hand, an alternative model approach allows two or more models to be tested, in order to identify which has the best fit. For the development of **EMOTION 2.1**, a strict confirmatory approach was adopted as there is only one formulated model for **EMOTION 2.1**.

CFA is used to determine how well the model fits the data, and therefore evaluating the goodness of fit indices is crucial. Several statistical tests are used to determine how well the model fits the data in CFA and SEM. The closer fit indices meet statistical requirements, the better the model. The Chi-Square (X^2) statistic is considered the primary index of goodness-of-fit. However, due to problems associated with reliance on the X^2 (sensitivity to sample sizes and inappropriateness when distributional assumptions are violated), measures of relative fit are strongly recommended. The X^2 is a measure of absolute fit, and provides a fundamental indication of how well the proposed theory fits the data and does not rely on comparison with a baseline model (Jöreskog & Sörbom, 1993).

For the validation of **EMOTION 2.1**, the Root Mean Square Error of Approximation (RMSEA, Steiger & Lind, 1980), the Bentler Comparative Fit Index (CFI), and the Tucker-Lewis Index (TLI) were chosen as additional measures of fit, as they are the least likely to be affected by sample size (Fan, Thompson & Wang, 1999). Furthermore, using a variety of indices is necessary as different indices reflect different aspects of model fit (Hooper, Coughlan & Mullen, 2008). Like the X^2 , the RMSEA is a measure of absolute fit that

assesses the amount of error associated with a proposed model. The lower the RMSEA, the more robust the model; indices of .05 or below are considered to be a good fit (Hu & Bentler, 1999). This is because RMSEA is related to the residuals in the model and assesses the degree to which the proposed model is inaccurate. Both the CFI and TLI are incremental or relative fit indices that assess the overall improvement of a proposed model compared with an independence model where observed variables are uncorrelated (Hooper et al., 2008; Holtzman & Vezzu, 2011). While higher values of the CFI and TLI (.9 and above) indicate an excellent fit, it should be noted that a CFI or TLI of .90 or higher may not necessarily correspond to a RMSEA of .05 or less (Hu & Bentler, 1999).

Table 14. The Goodness of Fit Indices and Model Results.

N	X ²	Df	X ² /df	P	RMSEA	P≤.05	CFI	TLI
446	7549.671	3825	1.973	0.00	0.047	1.00	0.846	0.838

The CFA model created for **EMOTION 2.1** is a Bifactor model, where the responses on each item are specified to be underpinned by two latent traits, the first being a specific factor, the second being EQ overall.

The results of the CFA, displayed in Table 14, show a RMSEA of .047 and CFI of .846, indicating that **EMOTION 2.1** has a good model fit and that the factors exist in the defined structure.

8. EMOTION 2.1 and Equal Opportunities

Organisations are increasingly under pressure to ensure that the tools used to inform employee recruitment, selection, development, promotion and performance measurement decisions are fair, objective and accurate. This pressure stems from a progressively knowledgeable applicant pool, a more sophisticated labour force and stringent local and international employment legislation and testing standards. Equal opportunities therefore represent a critical consideration for any modern-day work assessment, and an assessment is only considered to be truly valid when it is appropriate for use with different groups. **EMOTION 2.1** is a fair and accurate measure of emotional intelligence, and HR practitioners and psychologists can be confident of its diverse application.

Within the context of assessment, measures used must not result in adverse impact when applied to different groups. Adverse impact occurs when there is a significant difference in the rate of selection and employment decisions for one protected group over another. This is particularly important for organisations as there is a risk of selecting the wrong candidate for a job, as well as legal and financial costs associated with discrimination claims. Adverse impact is classified as discrimination when a candidate believes (and validity evidence fails to show otherwise) that not being offered a role was based on membership to certain demographics. For most countries across Europe, North America and Australia, fairness in the selection process is subject to legislation. Specifically for the USA, the Employee Testing and other Procedures Act 1971 (US Department of Labour) protects candidates against unfair assessment procedures, whilst fair employment assessment in the UK is protected by the following:

- Race Relations Act (1976)
- Sex Discrimination Act (1975;1986)
- Disability Act (1998)
- Employment Equality Regulation (2003)
 - Sexual Orientation
 - Religion and Belief
- Age Discrimination (2006)

8.1. Measurement Equivalence

Measurement equivalence (ME) refers to the consistency of measurement across some specified group demarcation such as nationality, ethnicity and gender. The focus of ME is to ensure that individuals from different groups with the same standing on an attribute have the same set of observations on an assessment (Drasgow, 1987; McLeary & Cruise, 2012). Understanding ME is important in assessments in order to establish validity, confidence and equivalence across groups. Equivalence of measurement is obtained when candidates from different cultural backgrounds, age groups, ethnicities, genders and occupational groups with the same level on a trait, have an equal chance of being selected for a role that requires the desired level on this trait. ME helps to determine the

extent to which respondents are interpreting items similarly, and identified differences across groups reflect actual differences in the trait being measured (Drasgow, 1984). One approach to assessing measurement equivalence is differential item functioning analysis.

8.1.1. Differential Item Functioning (DIF)

An item functions differently, or displays DIF, if respondents from different groups have different probabilities of endorsing the item, despite having the same level of the attribute or trait. When a different probability of endorsing an item remains constant across different levels of the attribute or trait, the DIF is said to be uniform. Here, the item of interest consistently gives one group an advantage across all levels of the attribute or trait. Conversely, when a different probability of endorsing an item varies along the level of the attribute or trait, the DIF is characterised as non-uniform (Clauser & Mazor, 1998; Hanson, 1998). Rather than a consistent advantage being given to the reference group across the ability continuum, an advantage to one group over another exists at different levels of the trait. For instance, an item may give the reference group an advantage at the higher end of the continuum, while a disadvantage at the lower end (see Figure 4). Item Response Theory (IRT) facilitates DIF analysis by examining the probability of endorsing items through the item characteristic curve. Here, the logistic regression approach is used, whereby separate analyses are run for each item and maximum likelihood estimation is used to calculate the probability of endorsing an item. Figures 3 and 4 show an example of item characteristic curves for uniform and non-uniform DIF.

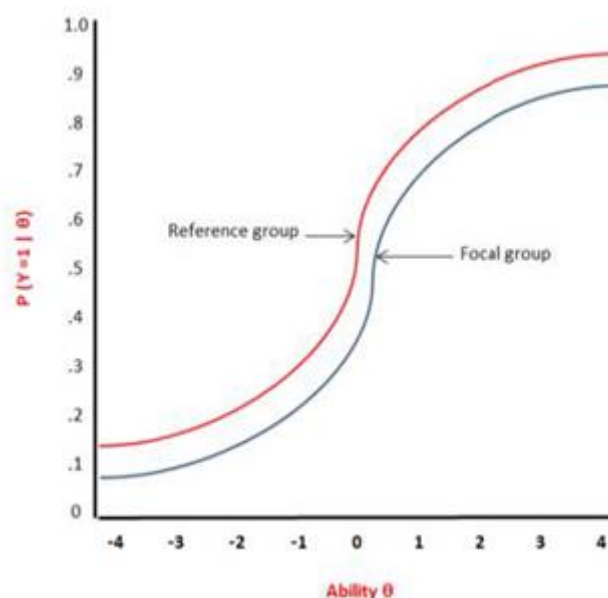


Figure 3. Item Characteristic Curve with Uniform DIF.

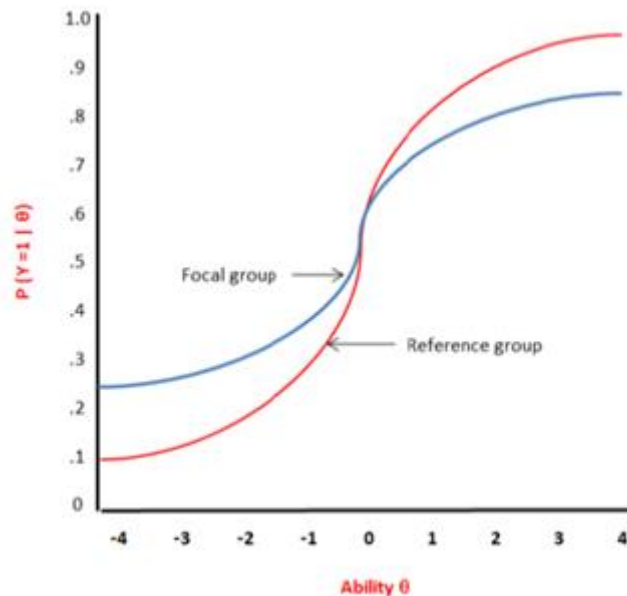


Figure 4. Item Characteristic Curve with Non-uniform DIF.

The DIF analysis provides information on whether an item is perceived in a similar way across gender, age and culture. If there is no DIF, it means that there is no bias that would favour one group over another. For example, two individuals from different countries with a similar absolute interest in the Assertiveness factor will have the same probability of endorsing the items measuring Assertiveness. However, true differences between groups may exist (e.g. some cultures are more interested in Assertiveness, others less). Such true differences are reflected in the norms (see Chapter 4).

8.1.1.a. DIF Analysis: Gender

DIF analysis was performed across gender in order to ensure that there was not a bias towards either males or females, and therefore that **EMOTION 2.1** is a fair test for both genders. For this analysis, the entire sample ($n = 1140$) - those who obtained a low as well as high Social Desirability score - was divided according to gender; 313 females and 827 males in order to accurately assess that there was no DIF effect in Social Desirability and no interaction between Social Desirability and gender.

The analysis flagged 32 of the 100 items for DIF, based on gender. Table 15 shows the DIF coefficient as well as the R^2 effect size. According to Zumbo and Thomas' (1997) classification of effect size, any R^2 under 0.13 is considered negligible. Out of the 19 items flagged for DIF, none showed an effects size of 0.13 or over. Therefore, it can be considered that **EMOTION 2.1** does not contain any item that functions differently across genders.

Table 15. Coefficients for Significant DIF and Effect Size for DIF Items.

Factor	Item	Chisq-value	p-value	Magnitude
Self-Knowledge	38	9.4068	0.0091	Negligible
Self-Control	16	8.9256	0.0115	Negligible
Self-Control	27	6.4684	0.0394	Negligible
Self-Confidence	43	8.2061	0.0165	Negligible
Self-Confidence	62	8.5207	0.0141	Negligible
Self-Confidence	66	23.486	0.0000	Negligible
Self-Confidence	84	6.1854	0.0454	Negligible
Self-Motivation	30	17.349	0.0002	Negligible
Self-Motivation	52	9.0481	0.0108	Negligible
Self-Motivation	58	12.505	0.0019	Negligible
Optimism	48	20.868	0.0000	Negligible
Optimism	26	13.580	0.0011	Negligible
Expressing Emotions	78	6.6572	0.0358	Negligible
Empathy	75	27.109	0.0000	Negligible
Empathy	95	13.672	0.0011	Negligible
Tactfulness	7	9.6110	0.0082	Negligible
Tactfulness	98	14.671	0.0007	Negligible
Dealing with Diversity	46	6.0516	0.0485	Negligible
Dealing with Diversity	53	6.4275	0.0402	Negligible
Motivating Others	36	6.4108	0.0405	Negligible
Motivating Others	49	6.9309	0.0313	Negligible
Motivating Others	55	10.2364	0.0060	Negligible
Motivating Others	72	7.5412	0.0230	Negligible
Mediation	93	15.274	0.0005	Negligible

8.1.1.b. DIF Analysis: Age

Table 16. Coefficients for Significant DIF and Effect Size for DIF Items.

Factor	Item	Chisq-value	p-value	Magnitude
Self-Knowledge	35	8.8121	0.0122	Negligible
Self-Knowledge	63	7.1215	0.0284	Negligible
Self-Control	23	6.2787	0.0433	Negligible
Optimism	61	11.816	0.0027	Negligible
Flexibility	22	10.033	0.0066	Negligible
Expressing Emotions	10	8.8332	0.0121	Negligible
Empathy	75	6.6853	0.0353	Negligible
Tactfulness	41	7.0061	0.0301	Negligible
Dealing with Diversity	37	6.4890	0.0390	Negligible
Dealing with Diversity	53	13.6265	0.0011	Negligible
Dealing with Diversity	56	10.3900	0.0055	Negligible
Motivating Others	49	16.542	0.0003	Negligible
Motivating Others	55	16.629	0.0002	Negligible
Motivating Others	98	6.7441	0.0343	Negligible
Mediation	14	9.1411	0.0104	Negligible
Mediation	69	13.545	0.0011	Negligible
Mediation	73	6.2592	0.0437	Negligible
Mediation	93	11.312	0.0035	Negligible

8.1.2. T-test and ANOVA

The DIF analysis demonstrates that **EMOTION 2.1** has high consequential validity, and although several items were flagged with DIF, there was a negligible impact on the overall assessment, meaning that the assessment does not bias towards gender or age. Therefore, any significant differences found between genders or age groups can be attributed to real differences between the groups and not biases in the assessment. To

further explore the differences between the groups, t-tests and ANOVAS were performed between genders and age groups (see Tables 16 and 17).

8.1.2.a. T-test: Gender

In order to analyse differences in scores between genders, an independent sample t-test was conducted to compare all **EMOTION2.1** factors between females (n = 313) and males (n = 827).

Table 17. Gender T-test for Factor Scores.

Factors	Females	Males	T	df	p-value
Self-Knowledge	6.82	7.06	-1.69	347	0.09
Self-Control	6.71	6.94	-1.66	353	0.09
Self-Regard	6.52	6.52	-0.01	378	0.99
Self-Confidence	6.86	7.11	-1.82	354	0.07
Self-Motivation	6.71	7.12	-3.08	354	0.02
Optimism	7.41	7.53	-0.94	340	0.35
Resilience	6.16	6.36	-1.40	372	0.16
Flexibility	6.31	6.35	-0.26	363	0.79
Expressing Emotions	6.41	6.63	-1.23	338	0.22
Assertiveness	6.15	6.44	-2.35	383	0.02
Empathy	7.49	7.11	3.02	358	0.00
Tactfulness	7.48	6.96	4.09	386	0.00
Dealing with Diversity	7.50	7.36	1.12	388	0.26
Motivating Others	7.35	7.29	0.44	386	0.65

Mediation	6.85	7.12	-2.15	370	0.03
Social Desirability	7.07	7.37	-3.40	812	0.00
Emotional Quotient	116.66	117.88	-1.52	413	0.13

The t-tests found significant differences between males and females on the following factors of **EMOTION 2.1**:

For *Self-Motivation, Assertiveness, Mediation and Social Desirability*, males scored higher than females.

For *Empathy and Tactfulness*, females scored higher than males.

8.1.2.b. ANOVA: Age Groups

Table 18. ANOVA for Factors by Age Groups.

Factors	18 and below	18-25	26-33	34-41	42-49	50-56	57+	F	df	p-value
Self-Knowledge	6.39	5.76	6.23	6.57	6.24	6.84	6.01	6.71	5	0.00
Self-Control	6.16	5.79	6.19	6.27	6.18	6.68	6.06	2.88	5	0.01
Self-Regard	5.90	5.51	5.98	6.05	5.98	5.36	5.59	5.63	5	0.00
Self-Confidence	6.57	5.66	6.27	6.48	6.51	7.02	5.56	11.6	5	0.00
Self-Motivation	6.03	5.79	6.10	6.34	6.25	6.55	6.41	4.16	5	0.00
Optimism	6.51	6.03	6.37	6.37	6.44	6.67	6.77	3.59	5	0.00
Resilience	5.88	5.45	5.91	6.06	5.95	6.03	5.36	4.01	5	0.00
Flexibility	5.76	5.28	5.82	5.96	5.93	6.63	5.68	7.15	5	0.00
Expressing Emotions	5.94	5.31	6.07	6.41	5.92	6.84	6.50	7.72	5	0.00

Factors	18 and below	18-25	26-33	34-41	42-49	50-56	57+	F	df	p-value
Self-Knowledge	6.39	5.76	6.23	6.57	6.24	6.84	6.01	6.71	5	0.00
Self-Control	6.16	5.79	6.19	6.27	6.18	6.68	6.06	2.88	5	0.01
Self-Regard	5.90	5.51	5.98	6.05	5.98	5.36	5.59	5.63	5	0.00
Self-Confidence	6.57	5.66	6.27	6.48	6.51	7.02	5.56	11.6	5	0.00
Self-Motivation	6.03	5.79	6.10	6.34	6.25	6.55	6.41	4.16	5	0.00
Optimism	6.51	6.03	6.37	6.37	6.44	6.67	6.77	3.59	5	0.00
Resilience	5.88	5.45	5.91	6.06	5.95	6.03	5.36	4.01	5	0.00
Assertiveness	5.48	5.46	5.88	6.06	5.89	6.63	5.66	5.12	5	0.00
Empathy	6.47	5.82	6.19	6.25	6.12	6.75	6.41	3.09	5	0.00
Tactfulness	6.65	5.91	6.26	5.99	6.02	5.61	5.95	1.75	5	0.12
Dealing with Diversity	6.29	5.88	6.45	6.55	6.34	7.00	6.25	5.57	5	0.00
Motivating Others	6.22	5.75	6.37	6.52	6.65	7.26	6.62	12.1	5	0.00
Mediation	6.35	5.54	5.97	6.33	6.40	7.13	6.32	10.35	5	0.00
Social Desirability	1.88	2.89	2.89	3.19	3.06	3.41	2.23	1.26	5	0.28
Emotional Quotient	117.70	114.19	118.50	119.93	119.24	123.65	117.25	10.74	5	0.00

The ANOVA found significant differences for the following factors of **EMOTION 2.1**:
For *Flexibility*, those in the agegroup 34-41 (M = 4.17) scored significantly lower than those in the age category 42-49 (M = 5.33, p = 0.004).

For *Mediation*, those in the age group 26-33 ($M = 5.51$) scored significantly lower than those in the age category 42-49 ($M = 6.37$, $p = 0.02$).

For *Social Desirability*, those in the age group 18-25 ($M = 1.27$) scored significantly higher than those in the age categories 34-41 ($M = 0.86$, $p = 0.003$) and 50+ ($M = 0.81$, $p = 0.004$).

9. Additional Information and Considerations

EMOTION 2.1 was developed primarily to guide Human Resource decisions for recruitment but its usage is manifold for organisational settings. It is important that the appropriate norms, scores and interpretations are used in order to aid selection, career development, coaching, and performance management. Accurate interpretation of psychometric tests helps both administrators and candidates to: a) put the assessment into context; b) effectively compare candidates across target capabilities; c) accurately identify areas for development; d) maximise fit between job requirements and candidate tendencies and aspirations; and e) promote the organisation as a fair and objective place to work. The current chapter gives guidelines for Human Resource practitioners to understand and successfully interpret candidate scores of **EMOTION 2.1** for different organisational objectives.

Report generation software for **EMOTION 2.1** provides graphs and personalised comments for all 15 factors that relate to the candidate's score. The report should only be interpreted by professionals who have completed *Central Test's* accredited training course and are familiar with this manual. Training in and knowledge of the assessment process are vital as scores should be interpreted in light of information regarding reliability, validity, standard error of measurement, and any accommodations to the assessment or assessment session that were made. Scores should also be presented within the context of the assessment and in a clear, meaningful and appropriate way for the target audience.

9.1. Interpreting Scores

It is important to note that all the assessments by *Central Test* have been developed for Human Resource purposes only. Therefore, no clinical conclusions can be drawn from the results – not even from extreme scores. There are five different levels of comments in total and these levels are determined by a candidate's score. Extreme scores are defined as the lowest and highest possible values on a factor. For **EMOTION 2.1**, the minimum score is set at 0 and the maximum score is set at 10.

High scores on a factor indicate that there is a high probability that the person who is being evaluated can be characterised as having a tendency for that factor. Middle scores (i.e. 4 - 7) indicate a high congruence with the norm group and may be less of a tendency for the individual. However, all comments should be viewed as hypotheses that need to be confirmed with other sources of data, such as interviews or further assessments, CV content and references.

As mentioned in section 3.3., the candidate's social desirability score is taken into account when the raw scores are displayed on the report, through the calibration of all factors. The Social Desirability score is also included as an additional indicator which will enable the user to identify the social desirability level attained. However, the user does not need

to focus too much on the social desirability indicator, as they can be certain that the level of social desirability has already been incorporated into the candidate's factor scores.

It is important to note that a high Social Desirability score does not mean that someone is intentionally lying or trying to cheat the assessment; it is an indication that they could be portraying themselves in a different light.

Table 19. Potential Impact of Social Desirability Score on the Emotional Quotient, without Calibration to Factor Scores.

Social Desirability Score	Potential Impact on Emotional Quotient*
Above 6	26.40% higher
5 – 6	21.35% higher
4 – 5	13.64% higher
3 – 4	12.52% higher
2 – 3	11.66% higher
Below 2	No impact

** in comparison to participants with a low social desirability score of below 2*

9.2. Organisational Need: Career Selection, Recruitment and Development

Through the identification of 21st century organisational requirements, **EMOTION 2.1** is an effective tool for both the employer, in the selection of job candidates on the basis of a personality profile as well as professional aspirations, and for the job candidate, in the successful selection of an appropriate career navigation.

In order to successfully hire a candidate that will feel satisfied with their job and as a result want to remain with the company, the job satisfaction of the employee becomes significant to the recruiter. By using **EMOTION 2.1**, an employer will be able to infer how appropriate a job may be for a candidate based on an objective assessment of their emotional capabilities. If the endorsed attributes of said candidate do not align with those of the job role in question, there may not be a good match between the two.

Recruitment and selection is an important organisational function which can be very time-consuming and expensive. Furthermore, bad recruitment decisions have additional effects on organisational productivity, capability and sustainability. It is recommended that prior to administering **EMOTION 2.1**, recruiters have a detailed job description and person specification based on a job analysis.

EMOTION 2.1 helps recruiters to customise job profiles in their client account by specifying desired scores for each factor. The assessment allows the recruiter to easily compare the target profile with a candidate's profile.

Furthermore, **EMOTION 2.1** can be used in line with performance evaluations, which are a key component of employee development and success. Performance reviews should be fair and balanced assessments of an employee's achievements and capabilities, and should give the opportunity to discuss expectations and accomplishments. **EMOTION 2.1** supports Human Resource practitioners with performance reviews that can help to discuss job performance in relation to emotional capabilities. If an individual is not performing as they could be at work, it may be down to a lack of ability in the particular area that they are working on. Identifying this can help the recruiter to identify whether or not the employee should be transferred to another area of the company, or to a different aspect of a project.

Whilst **EMOTION 2.1** is effective in identifying areas for development, it should not be used to directly track an employee's performance progress. We therefore recommend the use of objective performance assessments or other evaluations in conjunction with **EMOTION 2.1**.

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