

**DEVELOPMENT OF AN INDIGENOUS MODEL OF EMOTIONAL  
INTELLIGENCE SCALE AMONG ADOLESCENTS IN SOUTHWESTERN  
NIGERIA**

**BY**

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## **CERTIFICATION**

I certify that this study was carried out by Mumud Olabode OJUOLAPE with (Matric no: 202206) in partial fulfillment of the requirements for the award of the Degree of Doctor of Philosophy under my supervision.

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## **DEDICATION**

This research work is dedicated to almighty God for His mercy, grace and blessing for the completion of this work.

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## ABSTRACT

Emotional intelligence, an important construct that has been extensively used globally, is a critical factor in adolescent growth. However, extant literature have shown that locally-based Emotional Intelligence Scale (EIS) for measuring adolescents' emotional intelligence in Nigeria is scarce, while several foreign scales on the construct are not culturally appropriate. Previous studies used foreign-made EIS for measure of adolescents emotional intelligence among Nigeria students neglecting locally made EIS. This study, therefore, was designed to develop an indigenous model of emotional intelligence scale among adolescents in southwestern Nigeria.

The Goleman Daniel's Emotional Intelligence and Julius Akinboye's Creativity theories provided the framework, while a multitrait-multimethod research design was adopted. The multi-stage procedure was employed. The six states in southwestern Nigeria were enumerated. The simple random sampling technique was used to select 12 Local Government Areas (two per state) and 24 schools (two per LGA). One thousand four hundred and forty adolescents (60 per school) were randomly selected. The instruments used were self-developed Indigenous Emotional Intelligence scale ( $\alpha = .90$ ), Schutte Self-report EIS ( $\alpha = .90$ ) and Emotional Instability Scale ( $\alpha = .77$ ). Data were analysed using descriptive statistics, Pearson product moment correlation, Exploratory and Confirmatory factor analyses at 0.05 level of significance.

The participants' age was  $14.2 \pm 1.41$ , and 54.5% were female. Out of 80 items of the emotional intelligence scale, 66 items had correlation value above  $r > 0.3$ . Only seven potential factors were produced from the original 66-item scale. The seven potential factors accounted for 13.3%, 8.8%, 8.8%, 8.4%, 8.5%, 5.9% and 3.6% variances, respectively. All these factors produced 57.2% joint effect on emotional intelligent measure. The proportion of the variance in the measures of emotional intelligence was explained by the underling factors of the scale. After pruning down the scale, it resulted into six dimensions with an internal convergence validity of managing personal emotion ( $r = 0.79$ ), self-regulation ( $r = 0.73$ ), managing other emotion ( $r = 0.49$ ), emotional creativity ( $r = 0.78$ ), emotional innovation ( $r = 0.56$ ) and self-actualisation ( $r = 0.65$ ). The developed indigenous EIS also had an external convergence validity ( $r = 0.39$ ) with Schutte Emotional Intelligence scale. Emotional intelligence test showed a negative discriminant validity with Emotional Instability ( $r = -.38$ ). However, the six factors model displayed a better fit index; ( $\chi^2 = 15.58$ ) and the indigenous emotional intelligence scale showed a composite reliability value of 0.90, with each dimension of the scale recording a good reliability coefficient.

The developed indigenous emotional intelligence scale produced a reliable and valid measure for diagnosis and research purposes among adolescents in Southwestern Nigeria. Counselling psychologists and researchers in test and measurement should adopt this test for counselling and research purposes.

**Keywords:** Emotional intelligence scale, Emotional creativity, Emotional innovation  
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## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background to the Study**

Emotional intelligence is germane and requisite to every successful human interaction, and maximisation of interpersonal relationship in order to attain life and relationship goals. It is a veritable attribute useful in helping individual communicate their view, feelings and opinion in the best possible way without adversely affecting themselves, others and set goal. It has over the years proven to be the most important aspect of human nature that motivates a person's behaviour and manner of interaction with others. Emotional intelligence which is also referred to by some as emotional quotient depicts an individual's ability to understand his or her emotions, others emotions, control his or her emotions and at the same time reasonably relate with others on understanding of these emotions.

Consequently, it will not be an overstatement to say that this type of attribute, if possessed adequately would help a person live healthily, as he or she would easily avoid stressful life events, peacefully coexist with others in different circumstances and group dynamics and at the same time seamlessly attain live goals, life success and life contentment without hurting others nor undermining their individuality. Apart from positively impacting an individual's social skills, it influences the establishment of good self-concept, reduces delinquent behaviour and more importantly enhances academic abilities (Furqani 2020). For the adolescents, emotional intelligence has proven to be vital in how they control their emotions and as such contribute significantly towards helping them develop a balanced personality. Emotional intelligence is a strong motivating system, which promote and compel adolescents to do something urgent extemporarily and also provide solutions to problems immediately.

In spite of the importance of emotional intelligence as a personality attribute to the individual and their interaction with others, it has been revealed that a large number of people poses very low emotional intelligence, adolescent inclusive (O'Connor, Hill, Kaya, and Martin, 2019; Furqani, 2020). Adolescents with low emotional intelligence have the tendency to behave poorly, negative perceptions, low performance, negative emotions, low confidence and behaviour issues (Furqani, 2020). In addition, adolescents who are low in emotional intelligence are likely to develop low self-esteem, experience high peer influence in live activities, perform poorly in their academics (Aremu, Tella, and Tella, 2006). They also suffer depression, aggressive in their dealings with others, lack concentration, emotional instable and anxious about live events (Fischer and Manstead, 2018). On the contrary, students who had high emotional intelligence i.e. could perceive and understand their own emotions and emotions of others and could manage their emotional behaviour performed well in their academic work and develop more positive attitude towards learning (Salami, 2004; Ogundokun and Salami, 2009). Other researchers (Animasaun, 2005; Salami, 2007) opined that emotionally intelligent people are more resilient, tough, robust, irrepensible, resistant, energetic, decisive and creative. This could be the rationale behind Adeyemo (2007) assertion that a training on Emotional intelligence should be incorporated the curriculum of the general study programme at tertiary level of education.

The relevance of emotional intelligence to the functioning of a person, having a detailed, informative, easy to use, and yet valid for clinical diagnosis measure of such construct is of utmost importance has made the search for a valid and reliable measure of emotional intelligence had made the construct receive a considerable research attention that involves; studies geared towards its predicting factors, its own ability in predicting or influencing myriads of human activities, traits, and other personality attributes and studies that were specifically channeled towards measurement of emotional intelligence.

The need to have an all-encompassing, valid and generalizable instrument that can be used in clinical and research based diagnosis of an individual's level of emotional intelligence cannot be overstressed. The search for a standardized and valid measure of EI has been motivated in part by the commercial opportunities inherent in having a copyrighted scale to one's name. Consequently, the area of Emotional intelligence has

been characterized by the development of multiple measures of the construct. Other cause of this proliferation of measures of emotional intelligence is the difficulty that confronts researchers in developing measures with good and genuine psychometric properties.

Numerous measures of emotional intelligence such as the Bar-On Emotional Quotient Inventory (EQ-I, Bar-On, 1996, 1997a,b), Self-report Emotional Intelligence Test (SREIT, Schutte et al., 1998), Goleman Emotional Intelligence Scale (GEIS, Goleman, 1998), Emotional and Social Competence Inventory (ESCI, Boyatzis et al, 2000), Trait Emotional Intelligence Questionnaire (TEIQue, Petrides and Fumham, 2001), Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT, Mayer et al., 2002 a, b, 2003), The Situational Test of Emotional Management (STEM) and The Situational Test of Emotional Understanding (STEU) both developed by MacCann and Roberts (2008) and many others have been developed. There apparently is still more to be known concerning this golden construct, as evident in the African context. There are some factors that could be easily linked with emotional intelligence that are yet to feature in the foreign measures of the construct that we adopt and adapt for research and diagnostic purposes today.

There are many measures of emotional intelligence in different diversities in the origins of the scales and have necessitated diversities in dimension and factors observed among scale, while some subscales or dimensions are yet similar amongst the above listed measures. Statistical, logical and empirical look into the above espoused measure of emotional intelligence revealed that the Bar-On scale had factors such as Self-perception, interpersonal relationship, decision making, self-expression and stress management. Also, from the Schutte et al's SREIT (1998), factors such as Optimism, Appraisal of emotions, Social skills and Utilization of emotions were identified, while Goleman Emotional Intelligence Scale (GEIS, Goleman, 1998), had five factors of which includes self-awareness, self-regulation, social skill, empathy and motivation. The ESCI of Boyatzis et al., (2000) had four factors of which includes self-awareness, social awareness, self-management and relationship management. Other factors established in popular measure of emotional intelligence are well-being, sociability, emotionality, and self-control identified from the TEIQue of Petrides and Fumham (2001). The MSCEIT had four dimensions of perceiving emotions, facilitating thoughts, understanding

emotions and managing emotions, whereas, the STEM had dimensions such as Anger, Sadness, and fear as its dimensions, while the STEU measured emotions in three separate contexts: de-contextualized, work and private life (O'Connor, Hill, Kaya, and Martin, 2019).

Despite the differences and similarities observed amongst these early measures of emotional intelligence, some of these measures of emotional intelligence made use of a broader definition of EI that encompasses social effectiveness in addition to typical EI facets, while others were merely self-report items of feelings in certain life circumstances or situation, these and more are probably the reason O'Connor, Hill, Kaya, and Martin, (2019) concluded that it has become increasingly clear that these different measures of emotional intelligence were tapping into related, but distinct underlying constructs.

Conceptually, literature shows that the existing dimensions of emotional intelligence such as self-regulation, managing personal emotion, managing others emotion and self-actualization revealed that most of them had some vital dimensions that aid the understanding and control of emotion in common. These dimensions to a large extent and across measures served as the core points of convergence on which most of the early measures of EI were hinged, hence their inclusion in this study. Furthermore, a contextual look into our local setting has made evident that some attributes possessed by Nigerians, such as emotional creativity, emotional innovation, emotional entrepreneurship and emotional maturity could be linked to emotional intelligence as they highly influence an individual's understanding of their own emotions, others emotion, exert control over these emotions and more importantly relate optimally with others on the basis of these understanding and control of emotions. The need to look into these dimensions observed in early measures together with those newly introduced owing to their observed influence on the ways Nigerians relate in both intra and inter personal affairs necessitate the use of a confirmatory factor analysis.

Self-regulation is the ability to monitor and manage one's energy states, emotions, thoughts, and behaviors in ways that are acceptable and produce positive results such as well-being and learning. More so, managing one's emotion is the ability to understand one's emotion. Managing personal means choosing how and when to express the emotions we feel. An individual who is able to manage his own emotion will be able to understand;

emotional awareness, understanding and accepting emotions and intrapersonal communication. Managing other emotion is the ability to understand others emotion. This enable to shift the negative mood of others to a more positive and productive mood. Based on a socio-constructivist perspective, Averill (1980, 2005) understands creativity as a structure associated with emotion, in which emotions are the result of objective and subjective creative efforts made by the adolescents. Averill (2009, 2013) stated that emotional creativity (EC) is a dispositional trait consisting in experiencing a complex emotional life, which depends largely on the social norms that give coherence to the experienced emotions. Thus, considering that it is possible to foster the development of creativity from early ages. Therefore, this implies that emotional creativity is the ability to experience and express original, appropriate, and authentic combinations of emotions. Hence, a person with high EC will experience emotions that are more complex (Averill 2005; Gross, 2013; Medrano et al., 2013). However, people with high EC do not need to perform these regulatory processes because they know how to generate their own personalized combinations of emotions.

Since innovation is more emotional than technical, it is important to consider innovation from emotional viewpoint. Therefore, emotional innovation is the turning of adolescents' talents inward toward self-articulation and toward personal growth. McAdam and McClelland (2012) proposed that the emotional innovation process consists of four distinct phases, first phase, idea generation, ideas are developed and will be followed by the second phase of screening where ideas are compared to the objective to determine whether the ideas and objectives are compatible. The third phase entails checking the commercial and technical feasibility of the idea and during the fourth phase of implementation the idea is commercialised.

Entrepreneurship, as widely known, is one of the factors that drive the economy of most nations. One of the key influencing factors towards entrepreneurial intention is emotional intelligence. Therefore, emotional entrepreneurship is emotional skills and competence which offers an individual the ability to handle various situations effectively (Bar-on, 2008). Zampetakis et al. (2009) mentioned that there is a relationship between trait emotional intelligence and emotional entrepreneurship, which indicates emotional intelligence as a factor that can predict entrepreneurial intention. Nikolaou and Tsaousis



(2002) mentioned that adolescents with high trait emotional intelligence could easily manage their stress, which leads to the tendency of these adolescents to get involved in an entrepreneurial activity.

The concept of self-actualization has been the subject of much theoretical speculation over the years. The essential meaning entails the discovery of the real self and its expression and development. According to Maslow's motivational theory (1943, 1954, 1968) cited in Bentler, (2016), the self-actualizing person has basic needs satisfied, he/she is free from illness and he/she is using capacities to the fullest extent. In general, the self-actualizing person is in the process of maximizing his/her full potential. Sitting at the top of Maslow's "hierarchy of needs", self-actualizing people can be described as persons realizing their potential, "fulfilling themselves" and "doing the best they are capable of doing". Owing to this framework, this stage in the hierarchy can only be achieved when needs lower down in the hierarchy are satisfied. Craparo, Magnano, and Faraci, (2014) noted that self-actualizing persons enjoy unconditional self-acceptance and high emotional intelligence, i.e., "they can control their emotion and the emotion of others, they can choose to accept 'themselves' whether or not they perform well, are approved by significant others, or have deficits and handicaps". Descriptions of fulfillment, detachment (comfort with solitude), and unconditional self-acceptance imply that self-actualization is a model of optimal adaptation.

Emotional maturity and emotional intelligence are key factors in maintaining healthy relationships or otherwise. Many people are lacking in these areas, which leads to a breakdown in communication and, ultimately, complications in or even the breakup of relationships. Emotional maturity is the ability to handle situations without unnecessarily escalating them. Instead of seeking to blame someone else for their problems or behavior, emotionally mature people seek to fix the problem or behavior. They accept accountability for their actions (Shafeeq, and Thaqib, 2015). Emotional maturity helps for the growth of behaviour and promotes a capacity to control a reasonable amount of frustration which results in adolescents leading a happy healthy and peaceful life. The development of emotions will lay a strong foundation for various development of a adolescents personality. Emotions like fear, anger and affection are direct contribution to emotional maturity. Once adolescents are emotionally mature, they

will have ability to comprehend whatever they learn in the classroom resulting in better academic achievement (Kaur, 2015).

Emotional maturity and emotional intelligence work hand in hand. Emotionally mature people do not lie in uncomfortable situations. Rather, they face the reality of them head-on. In a disagreement, they do not resort to personal attacks; they address the issue being discussed. They are not impulsive and they do not speak recklessly. They make sure they are calm and think before they speak (Dutta, Chetia, and Soni, 2015). They aren't bullies or narcissists. They respect boundaries. They do not rely on the immature defense mechanism of deflection. Emotionally intelligent and emotionally mature people are able to create healthy and lasting relationships. They are also able to easily separate themselves from relationships with people who lack those qualities. Brahmhat, (2016) stated that once an adolescents have emotional intelligence and maturity, it becomes harder to tolerate those who do not. It is as if having those qualities becomes a sort of defense shield against those who lack them.

Development of the psychometric properties of a test is a time-consuming process. In order to demonstrate that a concept is robust, one must first show that it is actually describing what it was designed to describe. This is usually done by examining its construct validity. Therefore, confirmatory factor model allows to test the variability of the dimensions and estimate all items. Factor analysis enables the description of variability among observed, correlated variables. Factor analysis take a mass of data and shrinking it to a smaller data set that is more manageable and more understandable. Therefore, confirmatory factor model is to reduce many items into a fewer number of dimensions. As this simplify the emotional intelligence scale, such as reducing the number of items in regression models. More often, factors are rotated after extraction. Confirmatory factor model allows for the assessment between items of the emotional intelligence. The implication of this model is that an adolescent with a high level of emotional intelligence is more likely to also demonstrate a high quality of social and interpersonal relationships, and more likely to show compassion, altruism and the ability to express love and other emotions. CFA, allows researchers to consider both levels of data simultaneously. It suffices to say that every adolescents needs to possess emotional intelligence and attributes for sustainable intra-personal and inter-personal relationship

as this study focuses on development of an indigenous model of emotional intelligence scale among adolescents in southwestern Nigeria.

## **1.2 Statement of the Problem**

Emotional intelligence is an important construct that has been extensively used globally, and a very critical factor in adolescent growth. It is to be noted that any adolescent with low emotional intelligence are easily influenced by negative peer pressure, have poor time management, poor study habits and low emotional instability. Its criticality in adolescents' success has warranted the need for the development of several instruments for its measurement.

Many psychometricians and test developers have developed emotional intelligence scales following different dimensions, little had been done considering self-regulation, managing one's emotion, managing others' emotion, emotional creativity, emotional innovation, emotional entrepreneurship, self-actualisation and emotional maturity, as possible dimensions. It is necessary to examine the confirmatory factor model of emotional intelligence scale among adolescents in Southwestern Nigeria. This will allow the researcher in developing emotional intelligence scale considering dimensions such as self-regulation, managing one's emotion, managing others' emotion, emotional creativity, emotional innovation, emotional entrepreneurship, self-actualisation and emotional maturity.

There has been a substantial amount of research on emotional intelligence, limited research has been conducted on emotional intelligence considering emotional creativity, emotional innovation, emotional entrepreneurship, self-actualisation and emotional maturity as dimensions. This has triggered more insightful checks of the recognition of the items on previous tests, their relevance to adolescents, why the tests have not been replicated to other emotional intelligence tests and the reasons they do not really predict over or alongside among adolescents. All these lead to a significant problem as place into a controversial subject matter of the study. There had been countless number of researches conducted with similar aims of determining the development of an indigenous model of emotional intelligence scale, but little consider emotional creativity, emotional innovation, emotional entrepreneurship, self-actualisation and emotional maturity.

Since these new dimensions of emotional intelligence were not considered in the development of the previous indigenous instruments, they are not free from cultural bias and fairness. This emphasizes the need to improve on existing instruments to broaden and expand the new dimensions of emotional intelligence. Therefore, the development of an indigenous model of emotional intelligence scale among adolescents in southwestern Nigeria was done in this study.

### **1.3 Purpose of the Study**

The main objective of this study was to develop of an indigenous model of emotional intelligence scale among adolescents in southwestern Nigeria. Specifically, the study:

- i. determined the characteristics of the emotional intelligence scale.
- ii. examined the indicative factors of emotional intelligence scale.
- iii. examined the significant relationship among all the components of the emotional intelligence scale as an evidence of internal convergence validity.
- iv. determined the significant relationship among the factors of emotional intelligence scale and Schutte emotional intelligence scale as an evidence of external convergence validity.
- v. ascertained the significant relationship between emotional intelligence scale and emotional instability scale as an evidence of divergence validity.
- vi. examined six-factor model of Emotional Intelligence scale significantly gain a better fitness than the seven factor model.
- vii. examined the extent will each of the Components of Emotional intelligence Scale Display Significant Satisfactory Reliability Coefficient.

### **1.4 Research Questions**

The following research questions were used to guide the study:

1. What are the characteristics of the emotional intelligence scale?
2. What are the indicative factors of emotional intelligence scale?
3. Is there any significant relationship among all the components of the emotional intelligence scale as an evidence of internal convergence validity?

4. Is there any significant relationship among the factors of emotional intelligence scale and Schutte emotional intelligence scale as an evidence of external convergence validity?
5. Is there any significant relationship between emotional intelligence scale and emotional instability scale as an evidence of divergence validity?
6. Will the six-factor model of Emotional Intelligence scale significantly gain a better fitness than the seven factor model?
7. To what extent will each of the components of Emotional intelligence Scale Display Significant Satisfactory Reliability Coefficient?

### **1.5 Significance of the Study**

This study is on development of an indigenous model of emotional intelligence scale among adolescents in southwestern Nigeria. Therefore, the study should be significant to the following stakeholders which are adolescents, parents, teachers, school administrators, counselors, government and educational researchers.

The adolescents would benefit from the findings of this study because the stakeholders in the education would be awakened to their primary responsibility of caring for the children's emotions, health, wellbeing and other basic needs for their survival. Adolescents would be awakened to their emotions. They would be convinced of the need to develop feelings of empathy to their peers who are weak and vulnerable. The less punitive and coercive methods of handling low emotional intelligence are less dangerous and harmful to the perpetrators and would be more appealing to them to achieve positive behavioural changes. The weak and vulnerable school adolescents who are emotionally unstable would be convinced that the school is interested in their emotions and welfare, thus would help in reducing dropout rates among them, which hitherto adversely affected them and their development.

Parents/guardians and other primary caregivers would have the opportunity to interact with their wards on issues affecting the emotional intelligence of their children at home and in life generally. This is because the study would reveal the adverse effects of low emotional intelligence on the school adjustment and progress of their children so that they would be made to understand the relevance of paying attention to issues

affecting their academic performance, hence contributing to ensuring the provision of an enabling environment at home and in school for the smooth running of school activities including the social interactions among students. Parents would understand the need for exhibiting acceptable behaviours at home to their children which will modulate their emotional intelligence at a tender age to serve as role models worthy of being emulated. Parents would learn to watch their utterances and actions as this could have influence on the development of their children. Primary caregivers would understand the relevance of cooperating with other stakeholders in the education of their children, as well as devising means of helping children to develop their emotional intelligence and other emotional and behavioural problems through their child-rearing practices and the upbringing of their children.

It is hoped that the findings of this study would help school teachers by finding effective techniques for increasing adolescents emotional intelligence through less coercive and punitive methods that do not inflict any injury requiring hospitalization on the adolescents. This means that school teachers would be offered the opportunity for replacing corporal punishment with safe behaviour modification techniques for managing behaviour problems and dealing with students in order not to affect their emotions. School teachers could join hands with professional counsellors for proper handling of the cases related to emotional problems. Teachers would apply effective techniques of emotional Intelligence.

School counsellors on the other hand would be sensitized on the need for them to place more emphasis during their counselling sessions towards assisting students in developing their emotional intelligence and to replace their negative emotions with more positive emotions which are acceptable in the society with a view to enhancing their capability to develop and maintain peaceful co-existence among their colleagues and other members of the school community. School counsellors would observe the need for them to attend seminars, conferences and workshops on various behaviour management techniques aim at equipping participants with the required skills of handling problem behaviours among students. School counsellors would be offered the opportunity to select the most effective counselling techniques for emotional intelligence from this study. The findings of the study would make school counsellors more productive in the

discharge of their primary responsibilities. This will help test developers, psychometricians, clinical counselling psychologists, counselling psychologists and personnel counselling psychologists to have confidence in the utilisation of this emotional intelligence test on the adolescent population.

School administrators would be awakened to their primary responsibilities of caring for the welfare of both the strong and the weak among their students. The study would expose school administrators to the happenings of low emotional intelligence among the strong and the weak, exposing them to the negative consequences of low emotional intelligence on the health, wellbeing and performance in school. School administrators would be convinced of the daunting need for establishing functional guidance programmes in schools with befitting counselling centres. They would understand the need for them to join hands with school counsellors in identifying and managing students with low emotional intelligence which affects students' behaviour and performance. The school administrators would be sensitized to the need for mutual cooperation among stakeholders in the education industry for managing emotional problems capable of jeopardizing the attainment of the set goals and objectives of education.

The educational policy-makers would also be awakened to their responsibility of making budgetary allocations to the activities of guidance and counselling. This is because current high rate of insecurity is attributed to the abuse and neglect suffered by children at home and in schools due to insufficient care for their primary needs which affect their emotional intelligence. More professional counsellors would be trained and posted to schools for the prevention and management of crises to ensure safety of lives and properties in schools and the society at large. This study will also be significant to the government in providing schools and student's awareness on the importance of emotional intelligence and other emotional problems like seminars and group counselling will enhance their performance in school.

The outcomes of the study would serve as resource materials for other researchers who want to carry out research in related fields while contributing to the existing literature on emotional intelligence, as it would also enrich the knowledge base on the area of study investigated.

## 1.6 Scope of the Study

This study focuses on development of an indigenous model of emotional intelligence scale among adolescents in southwestern Nigeria. Adolescents who are between the age range 10-16 in Southwestern Nigeria (Oyo, Lagos, Ogun, Osun, Ondo and Ekiti) were the target participants. The data were collected in the six southwestern states in Nigeria. The current sample used self-reported questionnaires, which are not always considered to be reliable in terms of participants' true opinions and the tendency to provide socially desirable responses. This study is also limited in the in terms of it methodology using multiple triangulation research design considering eight dimension which are; self-regulation, managing personal emotion, managing other emotion, emotional creativity, emotional innovation, emotional entrepreneurship, emotional maturity and self-actualization. Also, the study is limited in Southwestern Nigeria (Oyo, Lagos, Ogun, Osun, Ondo and Ekiti).

## 1.7 Operational Definition of Terms

The following terms are operationally defined:

**Emotional Intelligence:** Emotional intelligence is the ability of adolescents in Southwestern Nigeria to understand and manage their emotions, and those of the people around them.

**Confirmatory Factor Analysis:** Confirmatory Factor Analysis (CFA) accommodates the complex survey data with the estimation of the level-specific variance components and the respective measurement models on emotional intelligence among adolescents.

**Test:** A test is an assessment intended to measure adolescents' emotional intelligence, knowledge, skill, aptitude, physical fitness, or classification in many other topics (e.g., beliefs).

**Adolescents:** Adolescence are secondary school students in Southwestern Nigeria at age 10-16.

**Emotional Creativity:** Emotional creativity (EC) is a pattern of cognitive abilities and personality traits related to originality and appropriateness in emotional experience of an adolescents.



**Emotional Innovation:** Emotional innovation is the turning of adolescents' talents inward toward self-articulation and personal growth.

**Emotional Entrepreneurship:** Emotional entrepreneurship is the emotional skills and competence which offers an adolescent the ability to handle various situations effectively.

**Emotional Maturity:** Emotional maturity is defined as how well an adolescents are able to respond to situations, control their emotions and behave in an adult manner when dealing with others.

**Self-Actualization:** Self-Actualization is the realization or fulfilment of an adolescent's talents and potentialities, especially considered as a drive or need present in everyone.

**Emotional instability:** Emotional instability is the extreme functioning in emotions of adolescents going from happy.

**Managing Other Emotion:** Managing other emotion is the ability of an adolescents to shift the negative mood of a group to a more positive and productive mood. The ability to help calm someone down when they are furious, frustrated or irritated in a meeting.

**Managing Personal Emotion:** Managing personal emotion is the ability of an adolescent to be able to handle his or her own emotion.

**Self-Regulation:** Self-regulation is the ability of an adolescents to respond to the ongoing demands of experience with the range of emotions in a manner that is socially tolerable and sufficiently flexible to permit spontaneous reactions as well as the ability to delay spontaneous reactions as needed.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Preamble**

This chapter presents related literature on development of an indigenous model of emotional intelligence scale among adolescents in southwestern Nigeria. This chapter include: Conceptual review, Theoretical framework and Empirical review. Theories that are in line with the study will be reviewed. Review of related studies will be done by linking all the independent variables to the dependent variable of the study and this would be referred to as empirical studies.

#### **2.1 Conceptual Review**

##### **2.1.1 Concept of Emotional intelligence**

The first formal mention of emotional intelligence appears to derive from a German article entitled “Emotional Intelligence and Emancipation” published in the journal in 1966 (Matthews, 2002). However, the first time that the term “emotional intelligence” appeared in the English literature was in an unpublished doctoral dissertation by Payne in 1986 (Matthews, 2002). Since then, Emotional intelligence has captured the interest of both the popular press and of the scientific researchers (Mayer, Caruso, and Salovey, 2000; Petrides and Furnham, 2000, 2001). The concept of emotional intelligence can be traced to the notable research of Thorndike (1920), followed by the respective work of Moss and Hunt (1927), and Gardner (1983), in which they discussed and developed the related concept of social intelligence or multiple intelligence. As early as the 1930s, there have been studies of a possible emotional aspect to intelligence. In 1934, Wechsler (of two well-known intelligence tests) wrote of “non-intellective” aspect of intelligence. Gardner (1983) proposed a conceptualization of interpersonal intelligence the competence to understand other people, and intrapersonal intelligence the competence to understand the self and apply it effectively in life.

Emotions are involved in everything people do: every action, decision and

judgment. Emotionally intelligent people recognize this and use their thinking to manage their emotions rather than being managed by them. In the course of last two decades, Emotional Intelligence (EI) concept has become a very important indicator of a person's knowledge, skills and abilities in workplace, school and personal life (Mayer, Caruso, and Salovey, 2000; Petrides and Furnham, 2000, 2001). The overall result of researches suggest that EI plays a significant role in the job performance, motivation, decision making, successful management and leadership. Thus applying EI methodology in higher education can have lots of benefits for students. It not only fulfills their desire but also makes them more efficient in their field. Everyone experiences and relates their feelings and emotions in day to day life. Emotions have valuable information about relationships, behavior and every aspect of the human life around us. The most recent research shows that emotions are constructive and do contribute to enhance performance and better decision making both at job and in private life.

Gardner's theory's eight currently accepted intelligences are: (Ref: Educational Psychology, (Robert 2009):

- 1.Spatial
- 2.Linguistic
- 3.Logical-mathematical
- 4.Bodily-kinesthetic
- 5.Musical
- 6.Interpersonal
- 7.Intrapersonal
- 8.Naturalistic

The term 'Emotional Intelligence' was coined and defined by Salovey and Mayer (1990). Despite its recent debut, there are already a number of definitions of EI. These conceptualizations can be divided into two streams: 'ability models' in which EI is defined as a set of cognitive abilities in emotional functioning (Mayer and Salovey, 1997) versus 'mixed trait models' that incorporate a wide range of personality characteristics and other traits (Bar-On, 2001; Goleman, 1995, 1998; Petrides and Furnham, 2001) Salovey and Mayer (1990) initially defined emotional intelligence as "the subset 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". They later refined this definition as "the capacity to perceive emotions, to access and generate emotions so as to assist thoughts, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth" (Mayer and Salovey, 1997). This model is referred to in the literature as an ability-based model that is different from other models of emotional intelligence that are referred to as mixed models of emotional intelligence. The ability model of emotional intelligence put forth by Mayer and Salovey (1997) presented emotional intelligence as a cognitive ability. The first branch of the ability model is 'Identifying Emotions'. This branch includes a number of skills, such as the a) ability to identify feelings, b) ability to accurately expressing emotions, and c) ability to differentiate between real and phony emotional expressions.

### **Defining Emotional Intelligence**

There are lots of arguments about the definition of EI. As the field is growing so rapidly that researchers are constantly amending their own definitions. Some definitions are as below:

According to Salovey and Mayer (1990) emotional intelligence is: "the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions." According to Bar-On (1996) emotional intelligence is: "An array of non-cognitive (emotional and social) capabilities, competencies and skills that influence one's ability to succeed in coping with environmental demands and pressures."

According to Six Seconds Team (1997) emotional intelligence is: "The capacities to create optimal results in your relationships with yourself and others." According to Maurice (2001) "Emotional intelligence is the set of abilities that we like to think of as being on the other side of the report card from the academic skills." According to Salovey and Mayer (2002) emotional intelligence is: "The ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional meanings, and to reflectively regulate emotions in ways that promote emotional and intellectual growth."

According to Hein (2005, 2008, 2009) emotional intelligence is: “The mental ability we are born with which gives our emotional sensitivity and potential for emotional management skills that help us maximize our long term health, happiness and survival.”(2005) “Knowing how to separate healthy from unhealthy feelings and how to turn negative feelings into positive ones.”(2008) “Emotional intelligence is the innate potential to feel, use, communicate, recognize, remember, learn from, manage, understand and explain emotions.”(2009)

According to Stock (2007), “Emotional Intelligence (EI) is the ability to acquire and apply knowledge from your emotions and the emotions of others.” You can use the information about what you’re feeling to help you make effective decisions about what to say or do (or not to say or do) next. According to Travis and Jean (2009), “Emotional intelligence is your ability to recognize and understand emotions in yourself and others, and your ability to use this awareness to manage your behaviour and relationships.”

According to Chris (2009)“EQ is achieving Self- and Social Mastery by being smart with core emotions.” According to Wikipedia (the free encyclopedia, 2010) Emotional Intelligence (EI), often measured as an Emotional Intelligence Quotient (EQ), describes a concept that involves the ability, capacity, skill or (in the case of the trait EI model) a self-perceived ability, to identify, assess, and manage the emotions of one’s self, of others, and of groups.

### **Origins of Emotional Intelligence**

The roots of emotional intelligence were traced by Darwin’s early work on the importance of emotional expression for survival. In the 1900s, even though traditional definitions of intelligence emphasized cognitive aspects such as memory and problem-solving, later on several researchers in the intelligence field of study had begun to be aware of the importance of the non-cognitive aspects. When psychologists began to think and write about intelligence, they focused on cognitive aspects, such as memory and problem-solving. However, there were researchers who understand that the non-cognitive aspects were also important in intelligence. In 1920, Thorndike, used the term social intelligence to describe the skill of understanding and managing other people. In other words, he proposed that humans possess several types of intelligence, one form is

being called as social intelligence, or the ability to understand and manage men and women, boys and girls, and also to act wisely in human relations.

In 1940 Wechsler, the originator of the Wechsler Adult Intelligence Scale (WAIS), referred to both non-intellective and intellective elements of intelligence. He described the effects of non-intellective factors on intelligent behavior. The non-intellective elements included affective, personal, and social factors, he later hypothesized that they were essential for predicting one's ability to succeed in life. He further argued that our models of intelligence would not be complete until we can effectively describe these factors. In 1983, Howard Gardner's *Frames of Mind: The Theory of Multiple Intelligences* included both Interpersonal intelligence (the capacity to understand the intentions, motivations and desires of other people) and Intrapersonal intelligence (the capacity to understand oneself, to appreciate one's feelings, fears and motivations). In Gardner's view, traditional types of intelligence, such as IQ, failed to explain cognitive ability fully. Thus, there was a common belief that traditional definitions of intelligence are lacking the ability to explain performance outcomes completely.

Psychologists Mayer and Salovey, introduced the concept of emotional intelligence in the early 1990's. According to them, emotions are internal events that coordinate physiological responses, cognitions, and conscious awareness. They defined emotional intelligence as, the ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to regulate emotions reflectively so as to promote emotional and intellectual growth. As a result of the growing needs of EI, the research on the topic was in process, until the publication of Goleman's (1995) best seller book *Emotional Intelligence: Why It Can Matter More Than IQ* was published and then the term became widely popular. Gibbs' article in *Time* magazine in 1995 highlighted Goleman's book and EI was popular in media. Thereafter, articles on EI began to appear with increasing frequency across a wide range of academic and popular magazines.

In 1996, Bar-On explained that Emotional Intelligence reflects our ability to deal successfully with other people and with our feelings. He developed the Bar-On EQ-I, and this inventory is the first scientifically developed and validated measure of emotional

intelligence that reflects one's ability to deal with daily environmental challenges and helps for one's success in professional and personal life. Bar-On Emotional Quotient Inventory (EQ-i) was published by Multi-Health Systems in 1996. This test covers five areas: intrapersonal, interpersonal, adaptability, stress management and general mood. In 1997, Richardson and Evans explored some methods for teaching social and emotional competence within a culturally diverse society. Their purpose was to help students to connect with each other, in order to assist them in developing interpersonal, intrapersonal, and emotional intelligences, arguing that these intelligences are essential for personal accomplishment.

In 1997, according to Ediger, the emotions, feelings and values are very important for a person's well-being and achievement in one's life. He also states that science teachers should stress on the emotional area that cannot be separated from the cognitive domain. He also said that quality emotions and feelings help students to give their best potential in the classroom. The students who dislike study and think negatively cannot concentrate for a long time on study and have more difficulty in reaching their capacity than others. In 1997, Pool the senior editor of Educational Leadership, stated in an article that emotional well-being is a predictor of success in academic achievement and job success among others.

Finegan (1998), argues that schools should help students to learn the abilities of emotional intelligence. Possessing those abilities, or even some of them, can lead to better achievement from the formal education from the childhood to adolescent in the working place and in society. In 2001, Elias mentioned that teaching emotional and social skills are very important at school, it affects academic achievement positively of students not only during the year they were taught but during the years that follow as well. Teaching these skills has a long term effect on achievement. According to Nelson and Low (2003) emotional intelligence is the single most important variable in personal achievement, career success, leadership and life satisfaction. They feel that an emotionally fit person is capable to identify, understand, experience, and express human emotions in a healthy and productive ways.

Baron (1997) broadly defines EI as addressing the emotional, personal, social, and survival dimensions of intelligence, which are often more important for daily functioning

than the more traditional cognitive aspects of intelligence. Emotional intelligence is concerned with understanding oneself and others, relating to people, and adapting to and coping with the immediate surroundings to be more successful in dealing with environmental demands. In a way, to measure emotional intelligence is to measure one's "common sense" and ability to get along in the world. The 133-item, Bar-On (1997) EQ-i was developed to measure five main elements of emotional intelligence: (a) Intrapersonal, (b) Interpersonal, (c) Adaptability, (d) Stress Management, and (e) General Mood. It also includes a total score. Singh (2001) appears to conceptualize emotional intelligence in much the same manner as Goleman (1995). Singh defines emotional intelligence as a type of social intelligence that consists of the ability to monitor one's own and others emotions, to discriminate between these emotions, and use information effectively to guide one's thinking and actions. His definition includes the dimensions of self-awareness, ability to manage moods, motivation, empathy, and social skills such as cooperation and leadership.

The second branch, 'Emotional Facilitation of Thought' (or Using Emotions), includes the ability to use emotions to redirect attention to important things or events, to generate emotions that support decision making, to use mood swings as a means to consider multiple view points, and nurture different emotions to encourage different approaches to problem solving. The third branch, 'Understanding Emotions', is the ability to understand complex emotions and emotional "chains," how emotions migrate from one stage or phase to another, the ability to recognize the causes/triggers of emotions, and the ability to understand relationships among complexity of emotions. The fourth branch of the ability model is 'Managing Emotions'. Managing Emotions includes the ability to stay aware of one's emotions (both pleasant and non-pleasant), the ability to determine whether an emotion is unique or typical, and the ability to solve emotion driven problems without having to suppress negative emotions (Mayer, Caruso, and Salovey, 1999; Roberts, Zeidner, and Matthews, 2001). In 1990 Mayer, Caruso and Salovey also provided the first demonstration of how the construct may be measured (Mayer 1990).

The MSCEIT has a factor structure congruent with the four-part model of EI and it is both reliable and content valid. The authors argue that the EI measured this way meets



several standard criteria for a new intelligence: It is operationalized as a set of abilities; it is objective in that answers on the test are either right or wrong as determined by consensus or expert scoring; its scores correlate with existing intelligences while also showing unique variance; and scores increase with age (Mayer, Caruso, and Salovey, 1999; Mayer et al., 2002; Mayer and Geher, 1996; Mayer, Salovey, Caruso, and Sitarenios, 2003). Goleman (1995, 1998) defined emotional intelligence as the ability to be aware of and to handle one's emotions in varying situations. He concluded that emotional intelligence includes traits as self-awareness, self-regulation, motivation, empathy, and social skill.

- Self-Awareness

- (i) Emotional awareness: Recognizing one's emotions and their effects.
- (ii) Accurate self-assessment: Knowing one's strengths and limits.
- (iii) Self-confidence: Sureness about one's self-worth and capabilities.

- Self-Regulation

- (i) Self-control: Managing disruptive emotions and impulses.
- (ii) Trustworthiness: Maintaining standards of honesty and integrity.
- (iii) Conscientiousness: Taking responsibility for personal performance
- (iv) Adaptability: Flexibility in handling change.
- (v) Innovativeness: Being comfortable with and open to novel ideas and new information.

- Self-Motivation

- (i) Achievement drive: Striving to improve or meet a standard of excellence.
- (ii) Commitment: Aligning with the goals of the group or organization.
- (iii) Initiative: Readiness to act on opportunities.
- (iv) Optimism: Persistence in pursuing goals despite obstacles and setbacks.

- Social Awareness

- (i) Empathy: Sensing others' feelings and perspective, and taking an active interest in their concerns.

- (ii) Service orientation: Anticipating, recognizing, and meeting customers' needs.
- (iii) Developing others: Sensing what others need in order to develop, and bolstering their abilities.
- (iv) Leveraging diversity: Cultivating opportunities through diverse people.
- (v) Political awareness: Reading a group's emotional currents and power relationships.

• Social Skills

- (i) Influence: Wielding effective tactics for persuasion.
- (ii) Communication: Sending clear and convincing messages.
- (iii) Leadership: Inspiring and guiding groups and people.
- (iv) Change catalyst: Initiating or managing change.
- (v) Conflict management: Negotiating and resolving disagreements.
- (vi) Building bonds: Nurturing instrumental relationships.
- (vii) Collaboration and cooperation: Working with others toward shared goals.
- (viii) Team capabilities: Creating group synergy in pursuing collective goals.

**Advantages of Emotional Intelligence**

The advantages emotional intelligence is as below:

- Improves relationships with human beings; Improves communication with people;
- Makes better empathy skills;
- Acting with integrity;
- Helps you to get respect from others;
- To improve career prospects;
- Managing change more confidently;
- Enjoy the work wholeheartedly;
- Feeling confident and positive in attitude;
- To reduce stress levels;
- To increase creativity;
- To learn from mistakes.

## **Emotional Intelligence in Education**

Given that the key components of the collaborative process are inherently emotional in nature, leaders who are successful in developing collaborative work cultures may be those who are able to manage, rather than deny, their emotional selves” (Slater, 2005). The study indicates the need to address the emotional component in education system followed around the world. As Goleman points out, "One of psychology's open secrets is the relative inability of grades, IQ, or SAT scores, despite their popular mystique, to predict unerringly who will succeed in life. Children of more democratic parents, enjoy better peer competence (Gottman, Katz, and Hooven, 1997; Pearson and Rao, 2003). Parental empathy-related characteristics and emotion-related child-rearing practices relate to children’s competent emotional responding (Eisenberg, Fabes, Schaller, and Miller, 1991). “Nowhere is the discussion of emotional intelligence more pressing than in schools, where both the stakes and the opportunities seem greatest” (Gibbs, 1995). As Kusché and Greenberg support, “although emotional growth takes place throughout life, childhood is a time of especially rapid maturation” (Kusché and Greenberg, 2006). In order to raise an emotionally intelligent student, learning environments should be adaptive and transformative. “Educators can point to all sorts of data to support this new direction. Students who are depressed or angry literally cannot learn. Children who have trouble being accepted by their classmates are 2 to 8 times as likely to drop out” (Gibbs, 1995).

As Low and Nelson argue, “test scores reflect only a small part of learning that is important in academic success, career effectiveness, and personal well-being. We lose the true concept of education when we equate education and resultant learning to information retention, information transfer, and test taking” (Low and Nelson, 2005). What students need to acquire and develop is the ability to think and the way that they need to behave and react in certain situations. They need, in other words, to develop wisdom. “One does not have to be old to be wise. Young children can learn skills that allow them to behave wisely and effectively, for example interpersonal skills, dealing with strong emotions, time management, goal achievement” (Low and Nelson, 2005). Parental modeling, encouragement, facilitation, and rewarding of emotional intelligent-related behaviour predicted children’s attention, clarification, and regulation of feelings (Martinez-Pons,

1999). Ellison (2001) states: “when I was a beginning teacher, there were a number of theories of learning. Educators had little knowledge of how the brain operated. One theory stated that children were empty vessels waiting to be filled. Another theory promoted Skinner’s concept of operant conditioning, the forerunner of behavioural management systems”. We recognize that these theories provide a basis for our understanding of how learning occurs, but our knowledge is broader now and new research techniques have contributed to new thought about the interplay between reason and emotion. According to Caine and Caine (1991), “the task, then is for educators to deeply understand the way in which the brain learns. The more profound the understanding, the easier it is to actually see what is happening in a classroom and to creatively introduce the necessary changes”

In addition to providing a more formal definition of emotional intelligence, Mayer and Salovey's 1990 articles described an emotionally intelligent character: a well-adjusted, genuine, warm, persistent, and optimistic person. Both the character education and socio-emotional learning movements share in common the idea that much of human personality can be modified for the better through learning Gardner while re-emphasizing his theory of multiple intelligences says “One of the most important things I have learned in my years as an academician is the value of emotional intelligence, which incorporates intrapersonal and interpersonal intelligence or abilities” (Gardner1993).

### **Emotional intelligence of adolescents**

Adolescents need their parents in order to function well in and outside the home. A crucial element of this balance is the way in which adolescents develop emotionally and socially. School age is the moment when adolescents need their parents to teach them how to interact with others, with respect to their needs and the needs of others, how to solve various social situations with which they are confronted every day, how to live and to express in a healthy way sadness, worry, fear, anger, without hurting others or themselves (Perera and DiGiacomo, 2013).

The fundamental needs of the adolescents are:

1. Need for emotional security;
2. Need for stable and predictable behaviour from their parents;

3. Need for autonomy;
4. Need for attention, acceptance, and acknowledgment;

### **The Need for Emotional Security**

Adolescents' need for emotional security is satisfied when parents pay attention to the way in which adolescents feel and react in different situations in a manner that helps them understand the way they feel and learn proper ways of expressing their emotions. In other words, the emotional security of the parent-child relationship is translated in the parent's level of involvement in their adolescent's emotional life (Qualter, Gardner, Pope, Hutchinson, and Whiteley, 2012).

### **The Need for stable and predictable behaviour**

Adolescents love predictability and stability. For them, it is very important to know what is going to happen. When they live in an environment where things change every day or parents have different reactions to the same behaviour (e.g. they react depending on their mood), the stress response system of the adolescents is permanently activated (they have their guard on, prepared to face all unpredicted situations). This permanent state of alert sensitizes certain areas of the brain, which are in charge of preparing the body to face threats (Arnold, and Off (2003). This explains why, living in environments where things change frequently, adolescents end up having intense emotional reactions triggered by small things. It is as if we would slowly but continuously rub a piece of glass paper on a part of the skin. Even though at the beginning we won't feel any pain, at a certain point, this continuous action will make a simple touch to feel like a strong sensation of pain. Stress acts in the same way on the brain of adolescents. It sensitizes a set of areas, which are involved in preparing the body to face threats, and makes them easily excitable.

### **Need for attention, appreciation, and acknowledgement**

This fundamental human need is satisfied when parents grant their child interaction moments, when they are concerned with what the child does, when they give importance to the moments when adolescents request their attention. Ignoring adolescents

when they properly request your attention (e.g. the child comes to show to the parent what he/she has drawn and the parent says without looking „I saw it!“) or when they behave properly, because we feel exhausted after a day’s work and we do not have resources to interact with anybody, this teaches adolescents to choose a safer way to get the attention of adults, namely improper behavior (Rivers et al., 2012). They feel too exhausted to send a message of appreciation for the child’s drawing or we ask two or three questions about what the drawing represents, but we do not feel too exhausted to criticize or to scold the child when he/she does something that bothers us. For a child, being ignored is the hardest thing to tolerate. When the child is criticized he/she is the centre of the parents’ attention. From repeated experiences, the child learns that the only thing that takes his/her parents away from their worries or concerns or removes their exhaustion, is an improper behaviour. Even though what the child receives is negative attention, this is a much better alternative to being ignored. Adolescents ask for attention by using improper behaviour when they are not granted attention or when parents rarely and unpredictably pay attention (Billings, Downey, Lomas, Lloyd, and Stough, (2014).

The appreciation and validation as a person are the two aspects that the child learns mainly from the reaction his/her parents have when he/she has a week performance or when they behave different from their parents’ expectations. When our adolescents behave different from what we expect (e.g. throws the toys) we often react by being upset: we no longer look at the child, we do not smile, we do not perform with him/her the other activities he/she likes, you do not read the bedtime story, you do not touch or hug him/ her, by our reaction is a sanction, a punishment for the child’s entity. What the child learns from this life lesson, is that he/she is valuable and loved only when he/she behaves in a good manner. Or one of our fundamental needs is to be loved unconditionally (Billings, Downey, Lomas, Lloyd, and Stough (2014). For the improper behaviour, the parent may apply a logical consequence, but the behaviour towards the child must be identical to the ones we show to the child when he behaves adequately.

### **Need for autonomy and trust**

Adolescents need to learn autonomy. In order to learn this skill they need to have the proper context for learning. In this sense, it is important to negotiate the way in which

you will perceive the time you have at your disposal (Perera and DiGiacomo, 2013). In order to learn autonomy it is useful to allocate time for activities that you carry out together and time for moments in which each person can do what he/she wants (e.g. While you read a book, the child draws or plays). In this way, adolescents learn to pay attention to other people's needs. If you spend all the free time with the child because you feel guilty because you do not spend too much time with him/her, the child learns that only his/her need is important and misses the right moment to learn how to take into consideration the needs of others. Boredom, an emotion that very often adolescents mention, is most often related to their incapacity to build their own game, because they have never had the possibility to learn how to do that (Brackett and Geher (2006).

Adolescents with emotional intelligence are able to:

- Recognize and name their or other people's emotions;
- Express fear and anger, in healthy ways, without hurting others or themselves;
- Identify how another adolescents would in a certain situation;
- Make friends and maintain friendship relationships;
- Start and have a conversation with other people;
- Wait for their turn;
- Comply with social rules attached to a certain context;
- Join other adolescents's game;
- Pay and receive social compliments;
- Properly solve conflicts with other adolescents (by negotiating, by making wise compromise);
- Cooperate with others;
- Ask for help and help others, when necessary.

### **Applicability of EI on Other Factors**

#### **•Motivation and Creativity**

It is not a matter of surprise that moods and emotions affect our mind. When we feel good about ourselves, we find the world around us a great motivator. This motivation

helps us to express our personality better, creative and optimistic. This stage can be achieved by social awareness and proper emotional responses in a given situation. Thus, emotionally intelligent person can motivate his attitude for himself and for others which produces better results at work and in personal life. Moreover the sense of EI creates positive work environment and brings healthy job attitudes also.

#### •**Decision Making**

Many researchers agree that the key to good decision making is the combination of both thinking and feeling in one's decisions. Positive moods and emotions help for better decision making. With positive emotions people can develop problem-solving skills and take good decisions quickly.

#### •**Negotiation**

Everybody knows that negotiation is an emotional process. By proper use of emotions and understanding moods of oneself and others, one can manage their conflict and stressful situations. A person can be successful in negotiations, if he has an active listening techniques and skill of reading non-verbal cues.

#### •**Leadership**

Effective leaders use their emotions to convey their messages. When leaders feel excited, enthusiastic and active, they may be more likely to energize their subordinates and convey a sense of efficacy, competence, optimism, and enjoyment (Robbins, Judge, 2009)28. Therefore, successful leaders are emotionally intelligent.

#### •**Personal Growth**

Research shows that emotionally intelligent people achieve better results at work, school, and personal life. They are flexible enough to accept positive changes in their life for personal growth which can be achieved by developing EI competences.

### **Seven Principles of Emotional Intelligence**

A set of principles that have guided our theorizing about emotional intelligence. Together, these principles guidelines really succinctly represent how we think about emotional intelligence.



### Principle 1: Emotional Intelligence Is a Mental Ability

Like most psychologists, we regard intelligence as the capacity to carry out abstract reasoning: to understand meanings, to grasp the similarities and differences between two concepts, to formulate powerful generalizations, and to understand when generalizations may not be appropriate because of context (Carroll, 1993; Gottfredson, 1997). We agree also that intelligence can be regarded as a system of mental abilities (Detterman, 1982). Regarding how people reason about emotions, we proposed that emotionally intelligent people (a) perceive emotions accurately, (b) use emotions to accurately facilitate thought, (c) understand emotions and emotional meanings, and (d) manage emotions in themselves and others (Mayer and Salovey, 1997).

### Principle 2: Emotional Intelligence Is Best Measured as an Ability

A foundation of our thinking is that intelligences are best measured as abilities by posing problems for people to solve, and examining the resulting patterns of correct answers (Carroll, 1993; Mayer, Panter, and Caruso, 2012). (Correct answers are those that authorities identify within the problem-solving area.) The best answers to a question can be recognized by consulting reference works, convening a panel of experts, or (more controversially for certain classes of problems), by identifying a general consensus among the test-takers (Legree, Psocka, Tremble, and Bourne, 2005; MacCann and Roberts, 2008; Mayer, Salovey, Caruso, and Sitarenios, 2003). People are poor at estimating their own levels of intelligence whether it is their general intelligence or their emotional intelligence (Brackett, Rivers, Shiffman, Lerner, and Salovey, 2006; Paulhus, Lysy, and Yik, 1998). Because people lack knowledge of what good problem-solving actually entails, they estimate their abilities on other bases. These include a mix of general self-confidence, self-esteem, misunderstandings of what is involved in successful reasoning, and wishful thinking. These nonintellectual features add construct-irrelevant variance to people's self-estimated abilities, rendering their judgments invalid as indices of their actual abilities (Joint Committee, 2014).

### Principle 3: Intelligent Problem Solving Does Not Correspond Neatly to Intelligent Behavior

It believe there is a meaningful distinction between intelligence and behavior. A person's behavior is an expression of that adolescent's personality in a given social context (Mischel, 2009). An adolescent's personality includes motives and emotions, social styles, self-awareness, and self-control, all of which contribute to consistencies in behavior, apart from intelligence. Among the Big Five personality traits, for example, extraversion, agreeableness, and conscientiousness correlate near zero with general intelligence. Neuroticism correlates at  $r = -.15$ , and openness about  $r = .30$  (DeYoung, 2011). The Big Five exhibit correlations of similar magnitude with emotional intelligence: Neuroticism correlates  $r = -.17$  with emotional intelligence and openness  $r = .18$ ; extraversion and conscientiousness correlate with emotional intelligence between  $r = .12$  and  $.15$ , and agreeableness,  $r = .25$  (Joseph and Newman, 2010). These correlations indicate the relative independence of intelligences from socioemotional styles. They confirm what everyday observation suggests: that emotionally stable, outgoing, and conscientious people may be emotionally intelligent or not. Similarly, a person may possess high analytical intelligence but not deploy it illustrating a gap between ability and achievement (Duckworth, Quinn, and Tsukayama, 2012; Greven, Harlaar, Kovas, Chamorro-Premuzic, and Plomin, 2009). Intelligence tests tend to measure potential better than the typical performance of everyday behavior.

Many people with high levels of intelligence may not deploy their ability when it would be useful (Ackerman and Kanfer, 2004). For these reasons, the prediction from intelligence to adolescent instances of "smart" behavior is fraught with complications and weak in any single instance (Ayduk and Mischel, 2002; Sternberg, 2004). At the same time, more emotionally intelligent people have outcomes that differ in important ways from those who are less emotionally intelligent. They have better interpersonal relationships both in their everyday lives and on the job as articles in this issue and elsewhere address (Fernández-Berrocal and Extremera, 2016; Izard et al., 2001; Karim and Weisz, 2010; Lopes, 2016; Mayer, Roberts, and Barsade, 2008; Mayer, Salovey, and Caruso, 2008; Nathanson, Rivers, Flynn and Brackett, 2016; Roberts et al., 2006; Rossen and Kranzler, 2009; Trentacosta, Izard, Mostow, and Fine, 2006) Although intelligences

predict some long-term behavioral outcomes, predicting any adolescent behavior is fraught with uncertainty because of the other personality and social variables involved (Funder, 2001; Mischel, 2009).

Principle 4: A Test's Content the Problem Solving Area Involved Must Be Clearly Specified as a Precondition for the Measurement of Human Mental Abilities

**Establishing the content of the area.** To measure emotional intelligence well, tests must sample from the necessary subject matter; the content of the test must cover the area of problem-solving (Joint Committee, 2014). A test of verbal intelligence ought to sample from a wide range of verbal problems in order to assess a test-taker's problem-solving ability. Test developers therefore must cover the key areas of verbal problem-solving required, such as understanding vocabulary, comprehending sentences, and other similar skills. The specification of a problem-solving area vocabulary, sentence comprehension, and the like for verbal reasoning defines the intelligence and its range of application. The content specification is designed to ensure that the test samples a representative group of problems.

**Subject matter differs from ability.** Once the test's content is established, the test can be used to identify a person's mental abilities. People's problem-solving abilities are reflected by the correlational (or covariance) structure of the responses they make to the test items. People's abilities are revealed when a group of scores on test items rise and fall together across a sample of adolescents. Note that the mental abilities measured by a test are independent to some degree from the nature of the problems to be solved. That is, a person's abilities will not necessarily correspond directly to the different types of content in a subject area a matter we consider further in the next principle.

Principle 5: Valid Tests Have Well-Defined Subject Matter That Draws Out Relevant Human Mental Abilities

People exhibit their reasoning abilities as they solve problems within a given subject area. As such, a test's validity depends both on the content it samples and the human mental abilities it elicits. From this perspective, test scores represent an interaction between a person's mental abilities and the to-be-solved problems. If the test content is poorly specified, the items will misrepresent the domain, and any hoped-for research

understanding of mental abilities may be inconclusive. If problem-solving domains overlap too much with other areas, ability factors redundant with other areas may emerge; if the test content is too broad, eclectic sets of ability factors may arise, and if the content is too narrow the test may fail to draw out key mental abilities. A garbage in, garbage out process will replace good measurement. As implied in the previous lines, human abilities do not necessarily map directly onto test content: The abilities people use to solve problems have their own existence independent of the organization of the subject matter involved. In the intelligence field, a test of verbal knowledge may ask a person questions about nonfiction passages, fiction, poetry, and instruction manuals. Despite the diversity of material, people use just one verbal intelligence to comprehend them all. On the other hand, the skill to identify what is missing in a picture and the skill to rotate an object in space (in our minds) may appear to draw on the same visual understanding. However, identifying the missing part of a picture draws primarily on perceptual-organizational intelligence whereas the object-rotation task draws primarily on spatial ability, and these mental abilities are distinct (Wai, Lubinski, and Benbow, 2009). As applied to emotional intelligence, we need both to describe accurately the emotional problem solving that people undertake and the abilities people employ to solve those problems which are two different matters (Joint Committee, 2014).

#### Principle 6: Emotional Intelligence is a Broad Intelligence

Emotional intelligence was view as a “broad” intelligence. The concept of broad intelligences emerges from a hierarchical view of intelligence often referred to as the Cattell–Horn–Carroll or “three-stratum model” (McGrew, 2009). In this model, general intelligence, or *g*, resides at the top of the hierarchy, and it is divided at the second stratum into a series of eight to 15 broad intelligences (Flanagan, McGrew, and Ortiz, 2000; McGrew, 2009). The model is based on factor-analytic explorations of how mental abilities correlate with one another. Such analyses suggest that human thinking can be fruitfully divided into areas such as fluid reasoning, comprehension-knowledge (similar to verbal intelligence), visual-spatial processing, working memory, long-term storage and retrieval, and speed of retrieval. The three-stratum model also includes at its lowest level more specific mental abilities. For example, the broad intelligence, “comprehension-

knowledge” includes the specific ability to understand vocabulary and general knowledge about the world. Broad intelligences fall into subclasses (McGrew, 2009; Schneider and Newman, 2015). One class of broad intelligences reflects basic functional capacities of the brain such as mental processing speed and the scope of working memory. A second class of broad intelligences includes members identified by the sensory system they relate to, including auditory intelligence and tactile/physical intelligence. Still others may reflect subject matter knowledge such as verbal intelligence.

Mental abilities in late adolescence and adulthood may be shaped and strengthened into “aptitude complexes” by educational pursuits and interests to form domain-specific knowledge such as in mathematics, sciences, or government and history (Ackerman and Heggstad, 1997; Rolfhus and Ackerman, 1999). Emotional intelligence fits such descriptions of a broad intelligence. MacCann, Joseph, Newman, and Roberts (2014) collected data on 702 students who took a wide range of intelligence tests, including one of emotional intelligence, over an 8-hour testing period. Using confirmatory factor analysis, MacCann et al. (2014) found that emotional intelligence, indicated by three of the four branches of the Mayer, Salovey, Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, and Caruso, 2002), fits well among other known broad intelligences within the second-stratum of the Cattell–Horn–Carroll model. In a reanalysis of the same data, Legree et al. (2014) were also able to fit emotional intelligence into the Cattell–Horn–Carroll framework; they included all four branches of the MSCEIT as indicators of emotional intelligence by correcting for the different response scales used across the test’s subtasks (Legree et al., 2014).

#### Principle 7: Emotional Intelligence is a Member of the Class of Broad Intelligences Focused on Hot Information Processing

The broad intelligences especially those defined by their subject matter can be divided into hot and cool sets. Cool intelligences are those that deal with relatively impersonal knowledge such as verbal-propositional intelligence, math abilities, and visual-spatial intelligence. It was view that hot intelligences as involving reasoning with information of significance to an adolescent matters that may chill our hearts or make our blood boil. People use these hot intelligences to manage what matters most to them: their

senses of social acceptance, identity coherence, and emotional well-being. Repeated failures to reason well in these areas lead to psychic pain which at intense levels is coprocessed in the same brain centers that process physical pain (Eisenberger, 2015). By thinking clearly about feelings, personality, and social groups, however, people can better evaluate, cope with, and predict the consequences of their own actions, and the behavior of the adolescents around them.

Emotional intelligence falls within this category because emotions are organized responses involving physical changes, felt experiences, cognitions, and action plans all with strong evaluative components (Izard, 2010). Social intelligence is another member of the category (Conzelmann, Weis, and Süß, 2013; Hoepfner and O'Sullivan, 1968; Weis and Süß, 2007; Wong, Day, Maxwell, and Meara, 1995). Social intelligence is "hot" because social acceptance is fundamentally important to us; among social animals, group exclusion is a source of primal pain (Baumeister and Leary, 1995). Finally, personal intelligence an intelligence about personality is a newly proposed member of this group (Mayer, 2008, 2014; Mayer et al., 2012). Personal intelligence is a hot intelligence because our sense of self is a primary source of inner pleasure and pain ranging from self-satisfaction and pride on the positive side to self loathing and suicidal thoughts and action on the negative side (Freud, 1962; Greenwald, 1980).

One method that has been used widely in research to measure EI is the Schutte Emotional Intelligence Scale (SEIS) (1998) (e.g. Carmeli, 2003; Dimitriades, 2007; Grant and Cavanagh, 2007; Hakanen, 2004). An important issue raised by Petrides and Furnham (2000) is whether this scale can be used in research as a face valid, unidimensional measure of EI in organisations. Investigating the psychometric properties of the SEIS would therefore help to answer this question and add to research knowledge on the measurement of EI. Schutte and Malouff (1998) state that reliable and valid measures of EI and its components are important efforts to make theoretical advances in the area of EI; explore the nature and development of EI; predict the future functioning of adolescents, for example in training, programmes, job or marriages; identify adolescents likely to experience problems because of deficits in emotional skills and evaluate the effectiveness designed to increase EI.

The SSEIT, sometimes referred to in the literature as the Assessing Emotions Scale or the Self-Report Emotional Intelligence test, is a self-report measure of emotional intelligence containing 33 items. Developed by Schutte et al. (1998), the SSEIT measures the four facets of emotional intelligence as defined by Salovey and Mayer (2000): 1) the appraisal of emotion in self and others, 2) the expression of emotion, 3) the regulation of emotion in self and others, and 4) the utilization of emotion in problem solving. The SSEIT focuses on average or usual emotional intelligence. In addition, four factor analytic studies identified a four factor solution for the 33 items listed in the Schutte Self Report Emotional Intelligence Test as perception of emotions, social skills or managing others' emotions, utilizing emotions, and managing emotions in self (Ciarrochi, Chan, and Bajar, 2001).

Based on the results of a principal components analysis of a group of items representing branches (Salovey and Mayer, 2000), Schutte et al. (1998) recommended using total scores on the SSEIT to determine a total emotional intelligence score.

#### Schutte Self Report Emotional Intelligence (Four Factors Construct Definition)

The four dimensions are described as the Perception of Emotions, Managing Emotions in Self, Managing Others' Emotions (or social skills), and Utilizing Emotions. Based on these dimensions (Ciarrochi et al., 2001), the subscales are comprised as follows: Perception of Emotion, items 5, 9, 15, 18, 19, 22, 25, 29, 32, and 33; Managing Own Emotions, items 2, 3, 10, 12, 14, 21, 23, 28, and 31; Managing Others' Emotions, items, 1, 4, 11, 13, 16, 24, 26, and 30; and finally, Utilization of Emotion, items 6, 7, 8, 17, 20, and 27. The SSEIT also is referred to as the Assessing Emotions Scale or the Self-Report Emotional Intelligence test. It is a self report measure of emotional intelligence containing 33 items. The SSEIT focuses on average or usual emotional intelligence.

Based on the results of a principal component analysis (Salovey and Mayer, 2000), researchers identified a strong one factor or first factor dimension for emotional intelligence. Schutte et al. (1998), therefore, recommend using the scale as assessing one factor by totaling all 33 items on the SSEIT to get a one factor/dimension for emotional intelligence. Taking only 5 minutes to complete, the survey is comprised of 33 items, using a 5-point Likert scale extending from 1 = "strongly disagree" to 5 = "strongly agree". Total scales scores are computed by reverse coding items 5, 28, and 33, and then

a final summation of all items. Total scores typically range from 33 – 165. High scores on all items collectively indicate high levels of emotional intelligence (Schutte et al., in press). The SSEIT has been used in over 200 publications listed in the PsycINFO database (Schutte et al., in press). In the development of this assessment, the internal consistency was measured by Cronbach's alpha as .90 (Schutte et al., 1998). Researchers also reported a 2-week test-retest reliability for total scale scores of .78.

### **2.1.2 Emotional Creativity**

Creativity is a phenomenon whereby something somehow new and somehow valuable is formed. The created item may be intangible (such as an idea, a scientific theory, a musical composition, or a joke) or a physical object (such as an invention, a printed literary work, or a painting). Scholarly interest in creativity is found in a number of disciplines, primarily psychology, business studies, and cognitive science, but also education, the humanities, technology, engineering, philosophy (particularly philosophy of science), theology, sociology, linguistics, the arts, economics, and mathematics, covering the relations between creativity and general intelligence, personality type, mental and neural processes, mental health, or artificial intelligence; the potential for fostering creativity through education and training; the fostering of creativity for national economic benefit, and the application of creative resources to improve the effectiveness of teaching and learning.

In a summary of scientific research into creativity, Mumford suggested: "Over the course of the last decade, however, we seem to have reached a general agreement that creativity involves the production of novel, useful products" (Mumford, 2003), or, in Robert words, the production of "something original and worthwhile" (Balzac, (2006). Authors have diverged dramatically in their precise definitions beyond these general commonalities: Meusburger reckons that over a hundred different analyses can be found in the literature (BCA (2006). As an illustration, one definition given by Torrance described it as "a process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies, and so on; identifying the difficulty; searching for solutions, making guesses, or formulating hypotheses about the



deficiencies: testing and retesting these hypotheses and possibly modifying and retesting them; and finally communicating the results."

Creativity in general is usually distinguished from innovation in particular, where the stress is on implementation. For example, Teresa and Pratt (2016) defines creativity as production of novel and useful ideas and innovation as implementation of creative ideas, while the OECD and Eurostat state that "Innovation is more than a new idea or an invention. An innovation requires implementation, either by being put into active use or by being made available for use by other parties, firms, adolescents or organisations." There is also an emotional creativity (Craft, (2005) which is described as a pattern of cognitive abilities and personality traits related to originality and appropriateness in emotional experience.

#### Aspects

Theories of creativity (particularly investigation of why some people are more creative than others) have focused on a variety of aspects. The dominant factors are usually identified as "the four Ps" process, product, person, and place (according to Rhodes, Dorst, and Cross, (2001). A focus on process is shown in cognitive approaches that try to describe thought mechanisms and techniques for creative thinking. Theories invoking divergent rather than convergent thinking (such as Guilford), or those describing the staging of the creative process (such as Wallas) are primarily theories of creative process. A focus on creative product usually appears in attempts to measure creativity (psychometrics, see below) and in creative ideas framed as successful memes. The psychometric approach to creativity reveals that it also involves the ability to produce more (Flaherty, (2005). A focus on the nature of the creative person considers more general intellectual habits, such as openness, levels of ideation, autonomy, expertise, exploratory behavior, and so on. A focus on place considers the circumstances in which creativity flourishes, such as degrees of autonomy, access to resources, and the nature of gatekeepers. Creative lifestyles are characterized by nonconforming attitudes and behaviors as well as flexibility.

#### "Four C" model

Kaufman and Beghetto introduced a "four C" model of creativity; mini-c ("transformative learning" involving "personally meaningful interpretations of

experiences, actions, and insights"), little-c (everyday problem solving and creative expression), Pro-C (exhibited by people who are professionally or vocationally creative though not necessarily eminent) and Big-C (creativity considered great in the given field). This model was intended to help accommodate models and theories of creativity that stressed competence as an essential component and the historical transformation of a creative domain as the highest mark of creativity. It also, the authors argued, made a useful framework for analyzing creative processes in adolescents (Pink, (2005).

The contrast of terms "Big C" and "Little c" has been widely used. Kozbelt, Beghetto and Runco use a little-c/Big-C model to review major theories of creativity. Boden distinguishes between h-creativity (historical) and p-creativity (personal). Robinson and Anna Craft have focused on creativity in a general population, particularly with respect to education. Craft makes a similar distinction between "high" and "little c" creativity and cites Ken Robinson as referring to "high" and "democratic" creativity. Mihaly has defined creativity in terms of those adolescents judged to have made significant creative, perhaps domain-changing contributions. Simonton has analysed the career trajectories of eminent creative people in order to map patterns and predictors of creative productivity.

Creativity can be expressed in a number of different forms, depending on unique people and environments. A number of different theorists have suggested models of the creative person. One model suggests that there are four "Creativity Profiles" that can help produce growth, innovation, speed, etc.

- (i) Incubate (Long-term Development)
- (ii) Imagine (Breakthrough Ideas)
- (iii) Improve (Incremental Adjustments)
- (iv) Invest (Short-term Goals)

Research by Batey of the Psychometrics at Work Research Group at Manchester Business School has suggested that the creative profile can be explained by four primary creativity traits with narrow facets within each

- (i) "Idea Generation" (Fluency, Originality, Incubation and Illumination)
- (ii) "Personality" (Curiosity and Tolerance for Ambiguity)
- (iii) "Motivation" (Intrinsic, Extrinsic and Achievement)

(iv) "Confidence" (Producing, Sharing and Implementing)

This model was developed in a sample of 1000 working adults using the statistical techniques of Exploratory Factor Analysis followed by Confirmatory Factor Analysis by Structural Equation Modelling (Vandervert, (2003).

An important aspect of the creativity profiling approach is to account for the tension between predicting the creative profile of an adolescent, as characterised by the psychometric approach, and the evidence that team creativity is founded on diversity and difference (Vandervert, (2003b). One characteristic of creative people, as measured by some psychologists, is what is called divergent production. Divergent production is the ability of a person to generate a diverse assortment, yet an appropriate amount of responses to a given situation. One way of measuring divergent production is by administering the Torrance Tests of Creative Thinking. The Torrance Tests of Creative Thinking assesses the diversity, quantity, and appropriateness of participants responses to a variety of open-ended questions (Vandervert, (2011).

Other researchers of creativity see the difference in creative people as a cognitive process of dedication to problem solving and developing expertise in the field of their creative expression. Hard working people study the work of people before them and within their current area, become experts in their fields, and then have the ability to add to and build upon previous information in innovative and creative ways. In a study of projects by design students, students who had more knowledge on their subject on average had greater creativity within their projects (Vandervert and Schimpf, (2007). Other researchers emphasize how creative people are better at balancing between divergent and convergent production, which depends on an adolescent's innate preference or ability to explore and exploit ideas.

The aspect of motivation within a person's personality may predict creativity levels in the person. Motivation stems from two different sources, intrinsic and extrinsic motivation. Intrinsic motivation is an internal drive within a person to participate or invest as a result of personal interest, desires, hopes, goals, etc. Extrinsic motivation is a drive from outside of a person and might take the form of payment, rewards, fame, approval from others, etc. Although extrinsic motivation and intrinsic motivation can both increase

creativity in certain cases, strictly extrinsic motivation often impedes creativity in people (DeGraff and Lawrence (2002).

From a personality-traits perspective, there are a number of traits that are associated with creativity in people (Gielen, (2013). Creative people tend to be more open to new experiences, are more self-confident, are more ambitious, self-accepting, impulsive, driven, dominant, and hostile, compared to people with less creativity. From an evolutionary perspective, creativity may be a result of the outcome of years of generating ideas. As ideas are continuously generated, the need to evolve produces a need for new ideas and developments. As a result, people have been creating and developing new, innovative, and creative ideas to build our progress as a society.

In studying exceptionally creative people in history, some common traits in lifestyle and environment are often found. Creative people in history usually had supportive parents, but rigid and non-nurturing. Most had an interest in their field at an early age, and most had a highly supportive and skilled mentor in their field of interest. Often the field they chose was relatively uncharted, allowing for their creativity to be expressed more in a field with less previous information. Most exceptionally creative people devoted almost all of their time and energy into their craft, and after about a decade had a creative breakthrough of fame. Their lives were marked with extreme dedication and a cycle of hard-work and breakthroughs as a result of their determination (Gielen, (2013).

Another theory of creative people is the investment theory of creativity. This approach suggest that there are many adolescent and environmental factors that must exist in precise ways for extremely high levels of creativity opposed to average levels of creativity. In the investment sense, a person with their particular characteristics in their particular environment may see an opportunity to devote their time and energy into something that has been overlooked by others. The creative person develops an undervalued or under-recognised idea to the point that it is established as a new and creative idea. Just like in the financial world, some investments are worth the buy in, while others are less productive and do not build to the extent that the investor expected. This investment theory of creativity views creativity in a unique perspective compared to

others, by asserting that creativity might rely to some extent on the right investment of effort being added to a field at the right time in the right way (Gielen, (2013).

### **2.1.3 Emotional Innovation**

Emotional innovation is the turning of our talents inward toward self-articulation, toward personal growth. At the center of emotional innovation is personal artistry. Any one of us can be an artist in the work we do if we approach it creatively. That requires us to think of ourselves as artists, which in turn elevates our standards within our work (Lijster (2018). Innovation is the practical implementation of ideas that result in the introduction of new goods or services or improvement in offering goods or services. However, many scholars and governmental organizations have given their own definition of the concept. Some common element in the different definitions is a focus on newness, improvement and spread. It is also often viewed as taking place through the provision of more-effective products, processes, services, technologies, art works or business models that innovators make available (Bhasin, (2012) to markets, governments and society. Innovation is related to, but not the same as, invention: innovation is more apt to involve the practical implementation of an invention (i.e. new improved ability) to make a meaningful impact in a market or society, and not all innovations require a new invention.

Innovation is the multi-stage process whereby organizations transform ideas into new/improved products, service or processes, in order to advance, compete and differentiate themselves successfully in their marketplace" Innovation is production or adoption, assimilation, and exploitation of a value-added novelty in economic and social spheres; renewal and enlargement of products, services, and markets; development of new methods of production; and the establishment of new management systems. It is both a process and an outcome (Edison, Ali, and Torkar (2014).

According to Rogers, innovation includes original invention and creative use and defines innovation as a generation, admission and realization of new ideas, products, services and processes (Rogers, (2003). Two main dimensions of innovation were degree of [novelty] (i.e. whether an innovation is new to the firm, new to the market, new to the industry, or new to the world) and kind of innovation (i.e. whether it is processor product-

service system innovation). In recent organizational scholarship, researchers of workplaces have also distinguished innovation to be separate from creativity, by providing an updated definition of these two related but distinct constructs:

In general, innovation is distinguished from creativity by its emphasis on the implementation of creative ideas in an economic setting. Amabile and Pratt in 2016, drawing on the literature, distinguish between creativity ("the production of novel and useful ideas by an adolescent or small group of adolescents working together") and innovation ("the successful implementation of creative ideas within an organization"), and as such, they consider both part of the same process.

## **Types**

Several frameworks have been proposed for defining types of innovation.

### **Sustaining vs disruptive innovation**

One framework proposed by Christensen draws a distinction between sustaining and disruptive innovations (Hughes, Lee, Tian, Newma and Legood (2018). Sustaining innovation is the improvement of a product or service based on the known needs of current customers (e.g. faster microprocessors, flat screen televisions). Disruptive innovation in contrast refers to a process by which a new product or service creates a new market (e.g. transistor radio, free crowdsourced encyclopedia, etc.), eventually displacing established competitors (Amabile, Pratt and Michael (2016). According to Christensen, disruptive innovations are critical to long-term success in business. Disruptive innovation is often enabled by disruptive technology. Marco and Karim define foundational technology as having the potential to create new foundations for global technology systems over the longer term. Foundational technology tends to transform business operating models as entirely new business models emerge over many years, with gradual and steady adoption of the innovation leading to waves of technological and institutional change that gain momentum more slowly.

### **Four types model**

Another frameworks that is common in Innovation management courses is suggested by Henderson and Clark. They divide Innovation into four types;

- **Radical innovation:** "establishes a new dominant design and, hence, a new set of core design concepts embodied in components that are linked together in a new architecture."
- **Incremental innovation:** "refines and extends an established design. Improvement occurs in adolescent components, but the underlying core design concepts, and the links between them, remain the same."
- **Architectural innovation:** "innovation that changes only the relationships between them"
- **Modular Innovation:** "innovation that changes only the core design concepts of a technology"

### **Non-economic innovation**

The classical definition of innovation being limited to the primary goal of generating profit for a firm, has led others to define other types of innovation such as: social innovation, sustainable or green innovation, and responsible innovation (Blank (2019).

#### Process of innovation

One of the early models included only 3 basic phases for innovation. According to Utterback (1971), these phases were: 1) idea generation, 2) problem solving, and 3) implementation. By the time one completed phase 2, one had an invention, but until one got it to the point of having an economic impact, one didn't have an innovation. Diffusion wasn't considered a phase of innovation heavy. Focus at this point in time was on manufacturing.

All organizations can innovate, including for example hospitals, universities, and local governments (Satell, (2017). The organization requires a proper structure in order to retain competitive advantage. Organizations can also improve profits and performance by providing work groups opportunities and resources to innovate, in addition to employee's core job tasks. It is necessary to create and nurture an environment of innovation. Executives and managers have been advised to break away from traditional ways of thinking and use change to their advantage. The world of work is changing with the increase in the use of technology and both companies and businesses are becoming

increasingly competitive. Companies will have to downsize or reengineer their operations to remain competitive. This will affect employment as businesses will be forced to reduce the number of people employed while accomplishing the same amount of work if not more (Christensen, Raynor, and Rory (2015).

### **Sources of innovation**

Innovation may occur as a result of a focus effort by a range of different agents, by chance, or as a result of a major system failure. According to Peter F. Drucker, the general sources of innovations are different changes in industry structure, in market structure, in local and global demographics, in human perception, mood and meaning, in the amount of already available scientific knowledge, etc.

In the simplest linear model of innovation the traditionally recognized source is manufacturer innovation. This is where an agent (person or business) innovates in order to sell the innovation. Specifically, RandD measurement is the commonly used input for innovation, in particular in the business sector, named Business Expenditure on RandD (BERD) that grew over the years on the expenses of the declining RandD invested by the public sector (Christensen and Overdorf, (2000).

Another source of innovation, only now becoming widely recognized, is end-user innovation. This is where an agent (person or company) develops an innovation for their own (personal or in-house) use because existing products do not meet their needs. MIT economist Eric von Hippel has identified end-user innovation as, by far, the most important and critical in his classic book on the subject, "The Sources of Innovation".

The robotics engineer Engelberger asserts that innovations require only three things:

1. a recognized need
2. competent people with relevant technology
3. financial support

Innovation processes usually involve: identifying customer needs, macro and meso trends, developing competences, and finding financial support. The Kline chain-linked model of innovation places emphasis on potential market needs as drivers of the



innovation process, and describes the complex and often iterative feedback loops between marketing, design, manufacturing, and RandD.

#### **2.1.4 Emotional Entrepreneurship**

Entrepreneurship is the creation or extraction of value (Diochon, Anderson and Alistair (2011). With this definition, entrepreneurship is viewed as change, generally entailing risk beyond what is normally encountered in starting a business, which may include other values than simply economic ones. More narrow definitions have described entrepreneurship as the process of designing, launching and running a new business, which is often initially a small business, or as the "capacity and willingness to develop, organize and manage a business venture along with any of its risks to make a profit." The people who create these businesses are often referred to as entrepreneurs. While definitions of entrepreneurship typically focus on the launching and running of businesses, due to the high risks involved in launching a start-up, a significant proportion of start-up businesses have to close due to "lack of funding, bad business decisions, government policies, an economic crisis, lack of market demand, or a combination of all of these (Belicove and Mikal (2012)." In the field of economics, the term entrepreneur is used for an entity which has the ability to translate inventions or technologies into products and services. In this sense, entrepreneurship describes activities on the part of both established firms and new businesses.

#### **Perspectives on entrepreneurship**

##### **Elements**

Entrepreneurship is an act of being an entrepreneur, or "the owner or manager of a business enterprise who, by risk and initiative, attempts to make profits". Entrepreneurs act as managers and oversee the launch and growth of an enterprise. Entrepreneurship is the process by which either an adolescent or a team identifies a business opportunity and acquires and deploys the necessary resources required for its exploitation. Early-19th-century French economist Jean-Baptiste Say provided a broad definition of entrepreneurship, saying that it "shifts economic resources out of an area of lower and into an area of higher productivity and greater yield". Entrepreneurs create something

new, something different they change or transmute values (Gaddefors and Anderson, (2017). Regardless of the firm size, big or small, they can partake in entrepreneurship opportunities. The opportunity to become an entrepreneur requires four criteria. First, there must be opportunities or situations to recombine resources to generate profit. Second, entrepreneurship requires differences between people, such as preferential access to certain adolescents or the ability to recognize information about opportunities. Third, taking on risk is a necessity. Fourth, the entrepreneurial process requires the organization of people and resources.

The entrepreneur is a factor in and the study of entrepreneurship reaches back to the work of Cantillon and Smith in the late 17th and early 18th centuries. However, entrepreneurship was largely ignored theoretically until the late 19th and early 20th centuries and empirically until a profound resurgence in business and economics since the late 1970s. In the 20th century, the understanding of entrepreneurship owes much to the work of economist Joseph Schumpeter in the 1930s and other Austrian economists such as Menger, Ludwig and Friedrich. According to Schumpeter, an entrepreneur is a person who is willing and able to convert a new idea or invention into a successful innovation. Entrepreneurship employs what Schumpeter called "the gale of creative destruction" to replace in whole or in part inferior innovations across markets and industries, simultaneously creating new products including new business models. In this way, creative destruction is largely responsible for the dynamism of industries and long-run economic growth. The supposition that entrepreneurship leads to economic growth is an interpretation of the residual in endogenous growth theory and as such is hotly debated in academic economics. An alternative description posited by Kirzner suggests that the majority of innovations may be much more incremental improvements such as the replacement of paper with plastic in the making of drinking straws (Hisrich, (2011).

The exploitation of entrepreneurial opportunities may include:

- Developing a business plan
- Hiring the human resources
- Acquiring financial and material resources
- Providing leadership
- Being responsible for both the venture's success or failure

- Risk aversion

Economist Schumpeter (1883–1950) saw the role of the entrepreneur in the economy as "creative destruction" – launching innovations that simultaneously destroy old industries while ushering in new industries and approaches. For Schumpeter, the changes and "dynamic disequilibrium brought on by the innovating entrepreneur [were] the norm of a healthy economy". While entrepreneurship is often associated with new, small, for-profit start-ups, entrepreneurial behavior can be seen in small-, medium- and large-sized firms, new and established firms and in for-profit and not-for-profit organizations, including voluntary-sector groups, charitable organizations and government (Clifford, (2013). Entrepreneurship may operate within an entrepreneurship ecosystem which often includes:

- Government programs and services that promote entrepreneurship and support entrepreneurs and start-ups
- Non-governmental organizations such as small-business associations and organizations that offer advice and mentoring to entrepreneurs (e.g. through entrepreneurship centers or websites)
- Small-business advocacy organizations that lobby governments for increased support for entrepreneurship programs and more small business-friendly laws and regulations
- Entrepreneurship resources and facilities (e.g. business incubators and seed accelerators)
- Entrepreneurship education and training programs offered by schools, colleges and universities
- Financing (e.g. bank loans, venture capital financing, angel investing and government and private foundation grants)[20][need quotation to verify]

In the 2000s, usage of the term "entrepreneurship" expanded to include how and why some adolescents (or teams) identify opportunities, evaluate them as viable, and then decide to exploit them (Scott, (2000). The term has also been used to discuss how people might use these opportunities to develop new products or services, launch new firms or industries, and create wealth. The entrepreneurial process is uncertain because opportunities can only be identified after they have been exploited. Entrepreneurs exhibit

positive biases towards finding new possibilities and seeing unmet market needs, and a tendency towards risk-taking that makes them more likely to exploit business opportunities.

### **Types of entrepreneurship**

#### **Ethnic**

The term "ethnic entrepreneurship" refers to self-employed business owners who belong to racial or ethnic minority groups in the United States and Europe. A long tradition of academic research explores the experiences and strategies of ethnic entrepreneurs as they strive to integrate economically into mainstream U.S. or European society. Classic cases include Jewish merchants and tradespeople in large U.S. cities in the 19th and early 20th centuries as well as Chinese and Japanese small business owners (restaurants, farmers, shop owners) on the West Coast. In the 2010s, ethnic entrepreneurship has been studied in the case of Cuban business owners in Miami, Indian motel owners of the U.S. and Chinese business owners in Chinatowns across the United States. While entrepreneurship offers these groups many opportunities for economic advancement, self-employment and business ownership in the United States remain unevenly distributed along racial/ethnic lines. Despite numerous success stories of Asian entrepreneurs, a recent statistical analysis of U.S. census data shows that whites are more likely than Asians, African-Americans and Latinos to be self-employed in high prestige, lucrative industries (Chaudhary, (2015).

#### **Institutional**

The American-born British economist Penrose has highlighted the collective nature of entrepreneurship. She mentions that in modern organizations, human resources need to be combined to better capture and create business opportunities. The sociologist DiMaggio (1988) has expanded this view to say that "new institutions arise when organized actors with sufficient resources [institutional entrepreneurs] see in them an opportunity to realize interests that they value highly". The notion has been widely applied.

## **Cultural**

According to Rea and Volland, cultural entrepreneurship is "practices of adolescent and collective agency characterized by mobility between cultural professions and modes of cultural production", which refers to creative industry activities and sectors. In their book *The Business of Culture* (2015), Rea and Volland identify three types of cultural entrepreneur: "cultural personalities", defined as "adolescents who build their own personal brand of creativity as a cultural authority and leverage it to create and sustain various cultural enterprises"; "tycoons", defined as "entrepreneurs who build substantial clout in the cultural sphere by forging synergies between their industrial, cultural, political, and philanthropic interests"; and "collective enterprises", organizations which may engage in cultural production for profit or not-for-profit purposes (Lounsbury, and Glynn, (2001).

### **Strategies**

Strategies that entrepreneurs may use include:

- Innovation of new products, services or processes
- Continuous process improvement (CPI)
- Exploration of new business models
- Use of technology
- Use of business intelligence
- Use of economical strategics
- Development of future products and services
- Optimized talent management
- Entrepreneurial marketing strategies for interactive and innovative networking

### **2.1.5 Self-Regulation**

Self-actualization, in Maslow's hierarchy of needs, is the highest level of psychological development, where personal potential is fully realized after basic bodily and ego needs have been fulfilled. Self-actualization was coined by the organismic theorist Kurt Goldstein for the motive to realize one's full potential: "the tendency to actualize itself as fully as possible is the basic drive the drive of self-actualization." Carl Rogers similarly wrote of "the curative force in psychotherapy man's tendency to

actualize himself, to become his potentialities to express and activate all the capacities of the organism."(Maslow (1943).

Maslow defined self-actualization to be "self-fulfillment, namely the tendency for him [the individual] to become actualized in what he is potentially. This tendency might be phrased as the desire to become more and more what one is, to become everything that one is capable of becoming." He used the term to describe a desire, not a driving force, that could lead to realizing one's capabilities. He did not feel that self-actualization determined one's life; rather, he felt that it gave the individual a desire, or motivation to achieve budding ambitions (Gleitman, Fridlund, Alan and Reisberg, 2004). Maslow's idea of self-actualization has been commonly interpreted as "the full realization of one's potential" and of one's "true self."

A more explicit definition of self-actualization according to Maslow is "intrinsic growth of what is already in the organism, or more accurately of what is the organism itself. Self-actualization is growth-motivated rather than deficiency-motivated." This explanation emphasizes the fact that self-actualization cannot normally be reached until other lower order necessities of Maslow's hierarchy of needs are satisfied. While Goldstein defined self-actualization as a driving force, Maslow uses the term to describe personal growth that takes place once lower order needs have essentially been met, one corollary being that, in his opinion, "self-actualisation rarely happens ... certainly in less than 1% of the adult population." The fact that "most of us function most of the time on a level lower than that of self-actualization" he called the psychopathology of normality (Schacter, Daniel, Gilbert, Daniel and Wegner, 2011). Maslow's usage of the term is now popular in modern psychology when discussing personality from the humanistic approach.

### **History and development of the concept**

Maslow's work is considered to be part of humanistic psychology, which is one of several methods used in psychology for studying, understanding, and evaluating personality. The humanistic approach was developed because other approaches, such as the psychodynamic approach made famous by Sigmund Freud, focused on unhealthy individuals that exhibited disturbed behavior; whereas the

humanistic approach focuses on healthy, motivated people and tries to determine how they define the self while maximizing their potential (Schacter, Daniel, Gilbert, Daniel and Wegner, 2011). Humanistic psychology in general and self-actualisation in particular helped change our view of human nature from a negative point of view man is a conditioned or tension reducing organism to a more positive view in which man is motivated to realize his full potential. This is reflected in Maslow's hierarchy of needs and in his theory of self-actualization.

Instead of focusing on what goes wrong with people, Maslow wanted to focus on human potential, and how we fulfill that potential. Maslow (1943, 1954) stated that human motivation is based on people seeking fulfillment and change through personal growth. Self-actualized people are those who are fulfilled and doing all they are capable of. It refers to the person's desire for self-fulfillment, namely to the tendency for him to become actualized in what he is potentially. "The specific form that these needs will take will of course vary greatly from person to person. In one individual it may take the form of the desire to be an ideal mother, in another it may be expressed athletically, and in still another it may be expressed in painting pictures or in inventions."<sup>1</sup>

According to Maslow, people have lower order needs that in general must be fulfilled before high order needs can be satisfied: 'five sets of needs – physiological, safety, belongingness, esteem, and finally self-actualization'. As Abraham Maslow noted, the basic needs of humans must be met (e.g. food, shelter, warmth, security, sense of belonging) before a person can achieve self-actualization. Yet, Maslow argued that reaching a state of true self-actualization in everyday society was fairly rare. Research shows that when people live lives that are different from their true nature and capabilities, they are less likely to be happy than those whose goals and lives match. For example, someone who has inherent potential to be a great artist or teacher may never realize their talents if their energy is focused on attaining the basic needs of humans (Feist, Feist, Gregory and Jess (2009). As a person moves up Maslow's hierarchy of needs, they may eventually find themselves reaching the summit self-actualization.

Maslow's hierarchy of needs begins with the most basic necessities deemed "the physiological needs" in which the individual will seek out items like food and water, and must be able to perform basic functions such as breathing and sleeping. Once these needs

have been met, a person can move on to fulfilling "the safety needs", where they will attempt to obtain a sense of security, physical comfort and shelter, employment, and property (Koltko-Rivera and Mark, 2006). The next level is "the belongingness and love needs", where people will strive for social acceptance, affiliations, a sense of belongingness and being welcome, sexual intimacy, and perhaps a family. Next are "the esteem needs", where the individual will desire a sense of competence, recognition of achievement by peers, and respect from others.

### **Characteristics of self-actualizers**

A self-actualizer is a person who is living creatively and fully using his or her potentials. It refers to the desire for self-fulfillment, namely, to the tendency for him to become actualized in what he is potentially. Maslow based his theory partially on his own assumptions or convictions about human potential and partially on his case studies of historical figures whom he believed to be self-actualized, including Albert Einstein and Henry David Thoreau. He considered self-actualizing people to possess "an unusual ability to detect the spurious, the fake, and the dishonest in personality, and in general to judge people correctly and efficiently." (Goldstein, (1971) Maslow examined the lives of each of these people in order to assess the common qualities that led each to become self-actualized. In his studies, Maslow found that self-actualizers really do share similarities. He also believed that each of these people had somehow managed to find their core-nature that is unique to them, and is one of the true goals of life. Whether famous or unknown, educated or not, rich or poor, self-actualizers tend to fit the following profile. Maslow's self-actualizing characteristics are:

- Efficient perceptions of reality. Self-actualizers are able to judge situations correctly and honestly. They are very sensitive to the superficial and dishonest.
- Comfortable acceptance of self, others and nature. Self-actualizers accept their own human nature with all its flaws. The shortcomings of others and the contradictions of the human condition are accepted with humor and tolerance.
- Reliant on own experiences and judgement. Independent, not reliant on culture and environment to form opinions and views.
- Spontaneous and natural. True to oneself, rather than being how others want.



- Task centering. Most of Maslow's subjects had a mission to fulfill in life or some task or problem 'beyond' themselves (instead of outside themselves) to pursue. Humanitarians such as Albert Schweitzer are considered to have possessed this quality.
- Autonomy. Self-actualizers are free from reliance on external authorities or other people. They tend to be resourceful and independent.
- Continued freshness of appreciation. The self-actualizer seems to constantly renew appreciation of life's basic goods. A sunset or a flower will be experienced as intensely time after time as it was at first. There is an "innocence of vision", like that of a child.
- Profound interpersonal relationships. The interpersonal relationships of self-actualizers are marked by deep loving bonds.
- Comfort with solitude. Despite their satisfying relationships with others, self-actualizing people value solitude and are comfortable being alone.
- Non-hostile sense of humor. This refers to the ability to laugh at oneself.
- Peak experiences. All of Maslow's subjects reported the frequent occurrence of peak experiences (temporary moments of self-actualization). These occasions were marked by feelings of ecstasy, harmony, and deep meaning. Self-actualizers reported feeling at one with the universe, stronger and calmer than ever before, filled with light, beauty, goodness, and so forth.
- Socially compassionate. Possessing humanity.
- Few friends. Few close intimate friends rather than many perfunctory relationships.
- Gemeinschaftsgefühl. According to Maslow, the self-actualizers possess "Gemeinschaftsgefühl", which refers to "social interest, community feeling, or a sense of oneness with all humanity."

#### Kurt Goldstein's

'Kurt Goldstein first introduced the concept of the organism as a whole,' which is built on the assumption that "every individual, every plant, every animal has only one inborn goal to actualize itself as it is." Kurt Goldstein's book, *The Organism: A Holistic Approach to Biology Derived from Pathological Data in Man* (1939), presented self-

actualization as "the tendency to actualize, as much as possible, [the organism's] individual capacities" in the world.

The tendency toward self-actualization is "the only drive by which the life of an organism is determined."<sup>1</sup> However, for Goldstein self-actualization cannot be understood as a kind of goal to be reached sometime in the future. At any moment, the organism has the fundamental tendency to actualize all its capacities and its whole potential, as it is present in that exact moment, under the given circumstances (Koltko-Rivera and Mark, 2006).

### **Carl Rogers' concept**

Carl Rogers used the term "self-actualization" to describe something distinct from the concept developed by Maslow: the actualization of the individual's sense of 'self.' In Rogers' theory of person-centered therapy, self-actualization is the ongoing process of maintaining and enhancing the individual's self-concept through reflection, reinterpretation of experience, allowing the individual to recover, develop, change, and grow. Self-actualization is a subset of the overall organismic actualizing tendency, and begins with the infant learning to differentiate what is "self" and what is "other" within its "total perceptual field," as their full self-awareness gradually crystallizes (Rogers, (2015). Interactions with significant others are key to the process of self-actualization:

As a result of interaction with the environment, and particularly as a result of evaluational interaction with others, the structure of the self is formed an organized, fluid but consistent conceptual pattern of perceptions of characteristics and relationships of the 'I' or the 'me', together with the values attached to these concepts (Rogers, 2015). The process of self-actualization is continuous as the individual matures into a socially competent, interdependent autonomy, and is ongoing throughout the life-cycle. When there is sufficient tension between the individual's sense of self and their experience, a psychopathological state of incongruence can arise, according to Rogers, "individuals are culturally conditioned, rewarded, reinforced, for behaviors which are in fact perversions of the natural directions of the unitary actualizing tendency." In Rogers' theory self-actualization is not the end-point; it is the process that can, in conducive circumstances

(in particular the presence of positive self-regard and the empathic understanding of others), lead to the individual becoming more "fully-functioning".

### **2.1.6 Emotional Maturity**

In psychology, maturity is the ability to respond to the environment being aware of the correct time and location to behave and knowing when to act, according to the circumstances and the culture of the society one lives in (Steinberg, 2007). Adult development and maturity theories include the purpose in life concept, in which maturity emphasizes a clear comprehension of life's purpose, directedness, and intentionality, which contributes to the feeling that life is meaningful. The status of maturity is distinguished by the shift away from reliance on guardianship and the oversight of an adult in decision-making acts. Maturity has different definitions across legal, social, religious, political, sexual, emotional, and intellectual contexts (Johnson, Blum, Robert and Jay, 2009). The age or qualities assigned for each of these contexts are tied to culturally-significant indicators of independence that often vary as a result of social sentiments. The concept of psychological maturity has implications across both legal and social contexts, while a combination of political activism and scientific evidence continue to reshape and qualify its definition. Because of these factors, the notion and definition of maturity and immaturity is somewhat subjective.

Emotional maturity is a prerequisite for a contented life and can be a pivotal factor in how we deal with the world around us. So what is this magical character trait and how can it be achieved? When we think about maturity, the first thing that comes to mind is usually age. However, when it comes to emotional maturity, the age of a person is not always an accurate indicator. Instead, emotional maturity relates to an individual's ability to both manage and understand their emotions. There are many dimensions to emotional maturity, but to put it simply, emotional maturity helps us to cope with the difficult situations life throws at us. As such, being emotionally mature can help one to navigate the modern world and find fulfilment and happiness within it (Kaur and Singh (2016).

On the flip side, if you're wondering 'what is emotional immaturity?' this is also an important question. It can be difficult to identify emotional immaturity in a person at first, but as relationships develop this can become a factor that is challenging to deal

with. In this article, we take a look at some key pointers that will help you to identify emotional maturity in yourself and others (Pajouhandeh (2013)). We will also explore some practices that can help you to cultivate an active awareness of your emotions and help you to develop your emotional maturity.

## **How to identify emotional maturity**

### **1. Having an awareness of where you came from**

No matter how much we may try to deny it, we are profoundly affected by our surroundings and environment. Where we grew up, our family background and our community all influence our inert biases and prejudices. Having an awareness of how these biases, prejudices and potential privileges influence decisions and actions is a key indicator of emotional maturity. Through this awareness, emotionally mature people are better able to see the world from a different perspective and question themselves when they think their ingrained beliefs may be tainting their viewpoint.

### **2. Being able to admit when you are wrong and taking responsibility for your actions**

While it is not easy to admit when you're wrong, another key sign of emotional maturity is the ability to do so. Admitting when you are wrong not only demonstrates that you take responsibility for your own actions, it also shows that you are not quick to blame others for your own mistakes. An obsession with always being right, no matter what the cost, is an indicator of emotional immaturity. Apologising takes courage, and in recognising our own weaknesses, we can demonstrate our emotional intelligence.

The same goes for receiving criticism, an emotionally mature person is able to receive criticism and not take it as a personal attack. Rather, they can take the feedback on board and aim to learn from it instead.

### **3. Practising self-forgiveness and not dwelling on past mistakes**

The ability to admit when you are wrong goes hand in hand with letting go of previous mistakes. Rather than punishing yourself for what went wrong in the past, or clinging to feelings of regret, a key aspect of emotional maturity is

learning to let go. You recognise that constantly punishing yourself for previous errors is counter-intuitive and, instead, realise that you are only human and forgive yourself. Being kind to yourself is a key part of emotional maturity and allows you to learn from mistakes rather than dwelling on them. Indeed, forgiving yourself for past mistakes is an important step in achieving a contented life not least because when we make mistakes we tend to learn a lot from them.

**4. Showing empathy to others**

As well as being kind to themselves, people with high levels of emotional maturity demonstrate equal kindness to others. This is done through the ability to empathise, as well as being able to show care and consideration for the feelings of those around you. In the same way that an emotionally mature person is aware of their own prejudices and biases, they are also able to see when specific circumstances and challenges affect the actions of others. It is often easy to spot an emotionally mature person as people are naturally drawn to them thanks to their ability to listen without judgement and show empathy to others.

**5. Being honest with yourself and asking for help**

A large part of emotional maturity comes from being in tune with your emotions and being honest with yourself about how you are feeling. It is incredibly tempting to ignore feeling a particular emotion or memory that we find uncomfortable and even painful. However, in doing so, we banish these emotions from our psyche and allow them to take control of us in different ways. Emotional maturity means acknowledging that perfection is impossible, everyone is partial to feeling difficult emotions such as fear, anger, and embarrassment. The most important thing is to be honest with yourself about what you're feeling and not being afraid to ask for help in times of difficulty.

**6. Taking a calm approach and rationalising fears and anxieties**

It is impossible to never feel anxious or afraid, however, it is how we deal with these emotions that determine our level of emotional maturity. If anxiety is controlling your activities or thought patterns this can have a severe effect on your well-being. While it is certainly not easy, a sign of increasing emotional maturity is not always envisaging the worst-case scenario. Being emotionally mature

means that you can rationalise feelings of anxiety and fear by recognising that sometimes things do go wrong, but largely you can get through these difficult times and there is always a plan B whatever the situation you are facing.

## **7. The ability to detach your emotions from your reactions**

As we have learned, a great deal of emotional maturity comes from being aware of, and having a handle on, your emotions. This ability can have a profound effect on your interactions with others as, instead of feeling an emotion and reacting immediately, you are able to create a distance between your initial emotion and your immediate reaction. This ability to react more carefully is an example of practising mindfulness in your day to day life as you observe your initial emotion, recognise it, and think about how you should react rather than allowing your instinct to dictate your response and saying the first thing that comes to mind. This practice can go a long way towards maintaining positive relationships and is both a sign, and huge benefit, of being an emotionally intelligent and mature person.

### **2.1.7 Adolescents**

Adolescence, transitional phase of growth and development between childhood and adulthood. The world Health organization (WHO) defines an adolescent as any person between ages 10 and 19. This age range falls within WHO's definition of *young people*, which refers to adolescents between ages 10 and 24. Adolescence (from Latin *adolescere*, meaning to grow up) is a transitional stage generally occurs during the period from puberty to legal adulthood (age of majority). Adolescence is usually associated with the teenage years, but its physical, psychological or cultural expressions may begin earlier and end later (Roberts, Michelle (2005). For example, puberty now typically begins during preadolescence, particularly in females. Physical growth (particularly in males) and cognitive development can extend into the early twenties. Thus, age provides only a rough marker of adolescence, and scholars have found it difficult to agree upon a precise definition of adolescence.

A thorough understanding of adolescence in society depends on information from various perspectives, including psychology, biology, history, sociology, education, and

anthropology. Within all of these perspectives, adolescence is viewed as a transitional period between childhood and adulthood, whose cultural purpose is the preparation of children for adult roles (Larson, and Wilson, (2004). It is a period of multiple transitions involving education, training, employment, and unemployment, as well as transitions from one living circumstance to another. The end of adolescence and the beginning of adulthood varies by country. Furthermore, even within a single nation state or culture, there can be different ages at which an adolescent is considered mature enough for society to entrust them with certain privileges and responsibilities. Such privileges and responsibilities include driving a vehicle, having legal sexual relations, serving in the armed forces or on a jury, purchasing and drinking alcohol, voting, entering into contracts, finishing certain levels of education, marriage, and accountability for upholding the law. Adolescence is usually accompanied by an increased independence allowed by the parents or legal guardians, including less supervision as compared to preadolescence (Coleman, Roker and Debi 1998).

In studying adolescent development, adolescence can be defined biologically, as the physical transition marked by the onset of puberty and the termination of physical growth; cognitively, as changes in the ability to think abstractly and multi-dimensionally; or socially, as a period of preparation for adult roles. Major pubertal and biological changes include changes to the sex organs, height, weight, and muscle mass, as well as major changes in brain structure and organization. Cognitive advances encompass both increment in knowledge and in the ability to think abstractly and to reason more effectively. The study of adolescent development often involves interdisciplinary collaborations. For example, researchers in neuroscience or bio-behavioral health might focus on pubertal changes in brain structure and its effects on cognition or social relations. Sociologists interested in adolescence might focus on the acquisition of social roles (e.g., worker or romantic partner) and how this varies across cultures or social conditions. Developmental psychologists might focus on changes in relations with parents and peers as a function of school structure and pubertal status.<sup>[17]</sup> Some scientists have questioned the universality of adolescence as a developmental phase, arguing that traits often considered typical of adolescents are not in fact inherent to the teenage years.

## **Growth spurt**

The adolescent growth spurt is a rapid increase in the adolescent's height and weight during puberty resulting from the simultaneous release of growth hormones, thyroid hormones, and androgens (Steinberg, (2008). Males experience their growth spurt about two years later, on average, than females. During their peak height velocity (the time of most rapid growth), adolescents grow at a growth rate nearly identical to that of a toddler about 4 inches (10.3 cm) a year for males and 3.5 inches (9 cm) for females. In addition to changes in height, adolescents also experience a significant increase in weight (Marshall, 1978). The weight gained during adolescence constitutes nearly half of one's adult body weight. Teenage and early adult males may continue to gain natural muscle growth even after puberty (Susman, and Rogol, (2004).

The accelerated growth in different body parts happens at different times, but for all adolescents it has a fairly regular sequence. The first places to grow are the extremities the head, hands and feet followed by the arms and legs, then the torso and shoulders (Tanner, (1972). This non-uniform growth is one reason why an adolescent body may seem out of proportion. During puberty, bones become harder and more brittle. At the conclusion of puberty, the ends of the long bones close during the process called epiphysis. There can be ethnic differences in these skeletal changes. For example, in the United States of America, bone density increases significantly more among black than white adolescents, which might account for decreased likelihood of black women developing osteoporosis and having fewer bone fractures there (Roe, Mora, Costin and Goodman (1991).

Another set of significant physical changes during puberty happen in bodily distribution of fat and muscle. This process is different for females and males. Before puberty, there are nearly no sex differences in fat and muscle distribution; during puberty, boys grow muscle much faster than girls, although both sexes experience rapid muscle development. In contrast, though both sexes experience an increase in body fat, the increase is much more significant for girls. Frequently, the increase in fat for girls happens in their years just before puberty. The ratio between muscle and fat among post-



pubertal boys is around three to one, while for girls it is about five to four. This may help explain sex differences in athletic performance (Smoll and Schutz (1990).

Pubertal development also affects circulatory and respiratory systems as adolescents' heart and lungs increase in both size and capacity. These changes lead to increased strength and tolerance for exercise. Sex differences are apparent as males tend to develop "larger hearts and lungs, higher systolic blood pressure, a lower resting heart rate, a greater capacity for carrying oxygen to the blood, a greater power for neutralizing the chemical products of muscular exercise, higher blood hemoglobin and more red blood cells" (Peterson and Taylor (1980). Despite some genetic sex differences, environmental factors play a large role in biological changes during adolescence. For example, girls tend to reduce their physical activity in preadolescence and may receive inadequate nutrition from diets that often lack important nutrients, such as iron (Goran. et al. (1998). These environmental influences in turn affect female physical development.

In many societies, however, adolescence is narrowly equated with puberty and the cycle of physical changes culminating in reproductive maturity. In other societies adolescence is understood in broader terms that encompass psychological, social, and moral terrain as well as the strictly physical aspects of maturation. In these societies the term *adolescence* typically refers to the period between ages 12 and 20 and is roughly equivalent to the word *teens*. During adolescence, issues of emotional (if not physical) separation from parents arise. While this sense of separation is a necessary step in the establishment of personal values, the transition to self-sufficiency forces an array of adjustments upon many adolescents. Furthermore, teenagers seldom have clear roles of their own in society but instead occupy an ambiguous period between childhood and adulthood. These issues most often define adolescence in Western cultures, and the response to them partly determines the nature of an adolescent's adult years. Also during adolescence, the adolescent experiences an upsurge of sexual feelings following the latent sexuality of childhood. It is during adolescence that the adolescent learns to control and direct sexual urges. Some specialists find that the difficulties of adolescence have been exaggerated and that for many adolescents the process of maturation is largely peaceful and untroubled. Other specialists consider adolescence to be an intense and often stressful developmental period characterized by specific types of behaviour.

## **Physical and Psychological Transition**

Stereotypes that portray adolescents as rebellious, distracted, thoughtless, and daring are not without precedent. Young person's experience numerous physical and social changes, often making it difficult for them to know how to behave. During puberty young bodies grow stronger and are infused with hormones that stimulate desires appropriate to ensuring the perpetuation of the species. Ultimately acting on those desires impels adolescents to pursue the tasks of earning a living and having a family. Historically, many societies instituted formal ways for older adolescents to help young people take their place in the community. Initiations, vision quests, the Hindu samskara life-cycle rituals, and other ceremonies or rites of passage helped young men and women make the transition from childhood to adulthood. An outstanding feature of such coming-of-age rites was their emphasis upon instruction in proper dress, deportment, morality, and other behaviours appropriate to adult status.

The Kumauni hill tribes of northern India offer a vivid example of a culture that traditionally celebrates distinct stages in every child's life. When a girl reaches puberty, her home is decorated with elaborate representations of the coming of age of a certain goddess who, wooed by a young god, is escorted to the temple in a rich wedding procession. Anthropologist Lynn Hart, who lived among the Kumauni, noted that each child grows up at the centre of the family's attention knowing that his or her life echoes the lives of the gods. Although Kumauni teenagers may act in ways that bewilder their elders, tribal traditions ease the passage through this stage of life, helping young people to feel a connection to their community.

## **Social Constraints**

From a biological perspective, adolescence should be the best time of life. Most physical and mental functions, such as speed, strength, reaction time, and memory, are more fully developed during the teenage years. Also in adolescence, new, radical, and divergent ideas can have profound impacts on the imagination. Perhaps more than anything else, teenagers have a remarkable built-in resiliency, seen in their exceptional

ability to overcome crises and find something positive in negative events. Studies have found that teens fully recover from bad moods in about half the time it takes adults to do so. Despite this resilience, however, for some teens these years are more stressful than rewarding in part because of the conditions and restrictions that often accompany this period in life.

### **Restrictions on physical movement**

Teenagers spend countless hours doing things they would prefer not to do, whether it be working or spending hours behind school desks processing information and concepts that often come across as abstract or irrelevant. Even excellent students say that most of the time they are in school they would rather be “somewhere else.” Many Western adolescents prefer to spend their time with friends in settings with minimal adult supervision.

The layouts of contemporary American communities especially suburban ones cause some teens to spend as many as four hours each day just getting to and from school, activities, work, and friends’ houses, yet getting from place to place is not something they have control over until they obtain a driver’s license (an event that became a major rite of passage for adolescents in much of the developed world). But even with access to a car, many teenagers lack appropriate places to go and rewarding activities in which to participate. Many engage with digital devices or digital media or spend time with peers in their free time. Adolescents generally find that activities involving physical movement sports, dance, and drama, for example are among the most pleasurable and gratifying. Ironically, the opportunities for participation in such activities have dwindled, largely because budget concerns have led schools to cut many nonacademic subjects such as physical education. In some American public schools, extracurricular activities have been greatly curtailed or no longer exist.

### **Absence of meaningful responsibility**

In the 1950s the increasingly important teenage market became a driving force in popular music (especially rock music), film, television, and clothing. Indeed, in those countries experiencing the post-World War II economic boom, adolescence was transformed by the emergence of teenagers as consumers with money to spend. In the

contemporary developed world, adolescents face a bewildering array of consumer choices that include television programs, movies, magazines, CDs, cosmetics, computers and computer paraphernalia, clothes, athletic shoes, jewelry, and games. But while many teenagers in these relatively affluent countries have no end of material amusements and distractions, they have few meaningful responsibilities, in sharp contrast both to their counterparts in countries struggling merely to survive and to earlier generations. Alexander the Great (356–323 BCE) was still a teenager when he set out to conquer a large part of the known world at the head of his father’s Macedonian armies. Lorenzo de’ Medici (1449–92) was an adolescent when his father sent him to Paris to work out subtle financial deals with the king of France. On a less exalted level, until a few generations ago, boys as young as age five or six were expected to work in factories or mines for 70 or more hours a week. In almost all parts of the world, girls were expected to marry and take on the responsibilities of running a household as early as possible.

In 1950 German-born American psychoanalyst Erik H. Erikson described adolescence in modern Western societies as a “moratorium,” a period of freedom from responsibilities that allows young people to experiment with a number of options before settling on a lifelong career. Such a moratorium may be appropriate in a culture marked by rapid changes in vocational opportunities and lifestyles. If young people are excluded from responsibilities for too long, however, they may never properly learn how to manage their own lives or care for those who depend on them.

Of course some adolescents create astonishing opportunities for themselves. William Hewlett and David Packard were teens when each began experimenting with electronic machines, and they founded the Hewlett-Packard Company when they were only in their mid 20s. As an adolescent, Microsoft Corporation cofounder Bill Gates was already formulating the business strategy that just a few years later would dumbfound the IBM colossus and make him one of the wealthiest men in the world. By and large, however, most teens play a waiting game, expecting to start “really living” only after they leave school. As useful as these years can be in preparing teens for their future roles in society, this isolation from “real” life can be enormously frustrating. In order to feel alive and important, then, many teenagers express themselves in ways that seem senseless to the rest of the population.

### **Isolation from adults**

In many public schools in the United States, student-teacher ratios of between roughly 12 and 25 (depending on whether the school is private or public) mean that the classroom atmosphere is influenced considerably more by peers than by teachers. At home teenagers spend at least several hours each day without parents or other adults present. Moreover, during the little time when adolescents are at home with their parents, the family typically watches television or the children disappear to study, play games, listen to music, or communicate with friends on computers, phones, or other devices. Estrangement from parents has clear effects. Teens who do little and spend little time with their parents are likely to be bored, uninterested, and self-centred. Lack of positive interaction with adults is particularly problematic in urban settings that had once enjoyed a lively “street-corner society,” where men traditionally shared their experiences with younger ones in a setting that was casual and relaxed. This vital facet in the socialization of young men has largely disappeared to the detriment of adolescent lives and communities. In its place, peer influence can be counterproductive by reinforcing a sense of underachievement or sanctioning deviant behaviour.

### **Deviance**

With little power and little control over their lives, teens often feel that they have marginal status and therefore may be driven to seek the respect that they feel they lack. Without clear roles, adolescents may establish their own pecking order and spend their time pursuing irresponsible or deviant activities. For example, unwed teen motherhood is sometimes the result of a desire for attention, respect, and control, while most gang fights and instances of juvenile homicide occur when teenagers (boys and girls alike) feel that they have been slighted or offended by others. Such deviance can take many forms. Insecurity and rage often lead to vandalism, juvenile delinquency, and illegal use of drugs and alcohol. Violence and crime, of course, are as old as humankind.

Contemporary juvenile violence is often driven by the boredom young people experience in a barren environment. Even the wealthiest suburbs with the most lavish amenities can be “barren” when viewed from an adolescent’s perspective. Ironically, suburban life is meant to protect children from the dangers of the big city. Parents choose

such locations in the hope that their children will grow up happy and secure. But safety and homogeneity can be quite boring. When deprived of meaningful activities and responsible guidance, many teens find that the only opportunities for “feeling alive” are stealing a car, breaking a school window, or ingesting a mind-altering drug. A middle-class adolescent caught with jewelry that he had stolen from a neighbour’s house claimed that the act of stealing had been fun. Like other teenagers, by “fun” he meant something exciting and slightly dangerous that takes nerve as well as skill. In parts of Asia and Africa, similarly, rebel groups have conscripted teens who go on to find excitement and self-respect behind machine guns. Millions of them have died prematurely as a result.

Behavioral scientists have gained valuable insight into the conditions that cause teenage strife. In many cases, adults are in the position to alleviate some of the frictions that make intergenerational relations more strained than they need to be. Research indicates that those adolescents who have the opportunity to develop a relationship with an adult role model (parental or otherwise) are more successful than their peers in coping with the everyday stresses of life.

### **2.1.8 Confirmatory factor analysis**

In statistics, confirmatory factor analysis (CFA) is a special form of factor analysis, most commonly used in social research (Kline, (2010)). It is used to test whether measures of a construct are consistent with a researcher's understanding of the nature of that construct (or factor). As such, the objective of confirmatory factor analysis is to test whether the data fit a hypothesized measurement model. This hypothesized model is based on theory and/or previous analytic research (Preedy, and Watson, (2009)). CFA was first developed by Jöreskog (1969) and has built upon and replaced older methods of analyzing construct validity such as the MTMM Matrix as described in Campbell and Fiske (1959).

Confirmatory factor analysis (CFA) is a multivariate statistical procedure that is used to test how well the measured variables represent the number of constructs. Confirmatory factor analysis (CFA) and exploratory factor analysis (EFA) are similar techniques, but in exploratory factor analysis (EFA), data is simply

explored and provides information about the numbers of factors required to represent the data. In exploratory factor analysis, all measured variables are related to every latent variable ((Kline, (2010). But in confirmatory factor analysis (CFA), researchers can specify the number of factors required in the data and which measured variable is related to which latent variable. Confirmatory factor analysis (CFA) is a tool that is used to confirm or reject the measurement theory.

In confirmatory factor analysis, the researcher first develops a hypothesis about what factors they believe are underlying the measures used (e.g., "Depression" being the factor underlying the Beck Depression Inventory and the Hamilton Rating Scale for Depression) and may impose constraints on the model based on these a priori hypotheses. By imposing these constraints, the researcher is forcing the model to be consistent with their theory. For example, if it is posited that there are two factors accounting for the covariance in the measures, and that these factors are unrelated to one another, the researcher can create a model where the correlation between factor A and factor B is constrained to zero. Model fit measures could then be obtained to assess how well the proposed model captured the covariance between all the items or measures in the model. If the constraints the researcher has imposed on the model are inconsistent with the sample data, then the results of statistical tests of model fit will indicate a poor fit, and the model will be rejected. If the fit is poor, it may be due to some items measuring multiple factors. It might also be that some items within a factor are more related to each other than others (Kline, (2010).

For some applications, the requirement of "zero loadings" (for indicators not supposed to load on a certain factor) has been regarded as too strict. A newly developed analysis method, "exploratory structural equation modeling", specifies hypotheses about the relation between observed indicators and their supposed primary latent factors while allowing for estimation of loadings with other latent factors as well (Asparouhov, and Muthén, (2009). To test measurement invariance across participants from various groups, researchers use a statistical technique called "multi group confirmatory factory analysis" (CFA; Milfont and Fischer, 2015). Essentially, multi group CFA is an extension of the typical CFA; however, instead of fitting a single model to your data set, you divide the data set into groups (e.g., young adult, middle-aged adult, and older adult), determine

model fit for each group separately, and then make multi-group comparisons. This procedure allows researchers to examine whether respondents from different groups interpret the same measure in a conceptually similar way (Bialosiewicz, Murphy, and Berry, 2013).

The three typical phases of measurement invariance testing are as follows.

### **Configural Invariance**

Using age as an example, a configural invariance test allows you to examine whether the overall factor structure stipulated by your measure fits well for all age groups in your sample. As with a typical CFA, you start by specifying the relationships between each item in the measure you're using and the latent factor(s) that the items are stipulated to measure. Take, for example, the five-item Satisfaction with Life Scale (Diener, Emmons, Larsen and Griffin, 1985). The latent construct of "life satisfaction" is indicated by each of the five scale items (e.g., "in most ways, my life is close to ideal"). The strength of each scale item-latent factor relationship is termed "factor loading" and each item's origin value is termed "item intercept" (similar to the concepts of beta-coefficient and y-intercept, respectively, in linear regression analysis). To test configural invariance, you fit the model you have specified onto each of the age groups, leaving all factor loadings and item intercepts free to vary for each group. You then compare model fit across all age groups a good multi-group model fit suggests that the overall factor structure holds up similarly for all ages.

### **Metric Invariance**

The next step is to test for metric invariance to examine whether the factor loadings are equivalent across the groups. This time, you constrain the factor loadings to be equivalent across groups, while still allowing the item intercepts to vary freely as before. A good multi-group model fit indicates metric invariance if constraining the factor loadings in this way results in a poorer fit, it suggests that the factor loadings are not similar across age groups.

Ascertaining metric invariance allows you to substantiate multi-group comparisons of factor variances and covariances, since metric invariance indicates that



each item of the scale loads onto the specified latent factor in a similar manner and with similar magnitude across groups. As such, you can assume that differences in factor variances and covariances are not attributable to age-based differences in the properties of the scales themselves.

### **Scalar Invariance**

The final step is to test for scalar invariance to examine whether the item intercepts are equivalent across groups. In this case, you constrain the item intercepts to be equivalent, just as you did with the factor loadings in the previous step. If this results in a poorer multi-group model fit, you can conclude that the item intercepts are not similar for people of different ages.

Ascertaining scalar invariance allows you to substantiate multi-group comparisons of factor means (e.g., t-tests or ANOVA), and you can be confident that any statistically significant differences in group means are not due to differences in scale properties at different ages. These steps are necessarily sequential, and scientists typically stop testing when any of these steps produces evidence of non-invariance. Scientists would then examine the factor loadings and item intercepts on an item-by-item basis to determine which items are the main contributors toward measurement non-invariance. Although additional steps can offer an even stricter test of measurement invariance, researchers generally agree that assessing configural, metric, and scalar invariance is sufficient for establishing measurement invariance (Bialosiewicz et al., 2013; Milfont and Fischer, 2015).

Testing for measurement invariance plays an integral role in psychological research, ensuring that comparisons across various groups of participants are both meaningful and valid. Chan (2011) states that “we cannot assume the same construct is being assessed across groups by the same measure” without tests of measurement invariance. Measurement invariance testing is, therefore, a critical addition to our arsenal of statistical procedures that help to increase the robustness and validity of our research, regardless of field or discipline.

### **General Purpose – Procedure**

1. **Defining adolescent construct:** First, we have to define the adolescent constructs. The first step involves the procedure that defines constructs theoretically. This involves a pretest to evaluate the construct items, and a confirmatory test of the measurement model that is conducted using confirmatory factor analysis (CFA), etc.
2. **Developing the overall measurement model theory:** In confirmatory factor analysis (CFA), we should consider the concept of unidimensionality between construct error variance and within construct error variance. At least four constructs and three items per constructs should be present in the research.
3. **Designing a study to produce the empirical results:** The measurement model must be specified. Most commonly, the value of one loading estimate should be one per construct. Two methods are available for identification; the first is rank condition, and the second is order condition.
4. **Assessing the measurement model validity:** Assessing the measurement model validity occurs when the theoretical measurement model is compared with the reality model to see how well the data fits. To check the measurement model validity, the number of the indicator helps us. For example, the factor loading latent variable should be greater than 0.7. Chi-square test and other goodness of fit statistics like RMR, GFI, NFI, RMSEA, SIC, BIC, etc., are some key indicators that help in measuring the model validity.

### **Alternative estimation strategies**

Although numerous algorithms have been used to estimate CFA models, maximum likelihood (ML) remains the primary estimation procedure (Flora, Curran and Patrick (2004). That being said, CFA models are often applied to data conditions that deviate from the normal theory requirements for valid ML estimation. For example, social scientists often estimate CFA models with non-normal data and indicators scaled using discrete ordered categories (Millsap, Yun-Tein, Jenn (2004). Accordingly, alternative algorithms have been developed that attend to the diverse data conditions applied researchers encounter. The alternative estimators have been characterized into two general type: (1) robust and (2) limited information estimator.

When ML is implemented with data that deviates away from the assumptions of normal theory, CFA models may produce biased parameter estimates and misleading conclusions (Li, Cheng-Hsien (2015). Robust estimation typically attempts to correct the problem by adjusting the normal theory model  $\chi^2$  and standard errors (Bandalos (2014). For example, Satorra and Bentler (1994) recommended using ML estimation in the usual way and subsequently dividing the model  $\chi^2$  by a measure of the degree of multivariate kurtosis. An added advantage of robust ML estimators is their availability in common SEM software (e.g., LAVAAN).

Unfortunately, robust ML estimators can become untenable under common data conditions. In particular, when indicators are scaled using few response categories (e.g., disagree, neutral, agree) robust ML estimators tend to perform poorly (Li, Cheng-Hsien (2015). Limited information estimators, such as weighted least squares (WLS), are likely a better choice when manifest indicators take on an ordinal form. Broadly, limited information estimators attend to the ordinal indicators by using polychoric correlations to fit CFA models. Polychoric correlations capture the covariance between two latent variables when only their categorized form is observed, which is achieved largely through the estimation of threshold parameters (Yang-Wallentin, Fan; Jöreskog, Luo, Hao (2010).

### **Exploratory factor analysis**

Both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) are employed to understand shared variance of measured variables that is believed to be attributable to a factor or latent construct. Despite this similarity, however, EFA and CFA are conceptually and statistically distinct analyses. The goal of EFA is to identify factors based on data and to maximize the amount of variance explained (Suhr, (2006). The researcher is not required to have any specific hypotheses about how many factors will emerge, and what items or variables these factors will comprise. If these hypotheses exist, they are not incorporated into and do not affect the results of the statistical analyses. By contrast, CFA evaluates a priori hypotheses and is largely driven by theory. CFA analyses require the researcher to hypothesize, in advance, the number of factors, whether or not these factors are correlated, and which items/measures load onto and reflect which factors (Thompson, (2004). As such, in contrast to exploratory factor analysis, where all

loadings are free to vary, CFA allows for the explicit constraint of certain loadings to be zero.

EFA is often considered to be more appropriate than CFA in the early stages of scale development because CFA does not show how well your items load on the non-hypothesized factors (Kelloway, (1995). Another strong argument for the initial use of EFA, is that the misspecification of the number of factors at an early stage of scale development will typically not be detected by confirmatory factor analysis. At later stages of scale development, confirmatory techniques may provide more information by the explicit contrast of competing factor structures.

EFA is sometimes reported in research when CFA would be a better statistical approach. It has been argued that CFA can be restrictive and inappropriate when used in an exploratory fashion (Browne, (2001). However, the idea that CFA is solely a “confirmatory” analysis may sometimes be misleading, as modification indices used in CFA are somewhat exploratory in nature. Modification indices show the improvement in model fit if a particular coefficient were to become unconstrained. Likewise, EFA and CFA do not have to be mutually exclusive analyses; EFA has been argued to be a reasonable follow up to a poor-fitting CFA model.

### **Structural equation modeling**

Structural equation modeling software is typically used for performing confirmatory factor analysis. LISREL, EQS, AMOS, Mplus and lavaan package in R are popular software programs. CFA is also frequently used as a first step to assess the proposed measurement model in a structural equation model. Many of the rules of interpretation regarding assessment of model fit and model modification in structural equation modeling apply equally to CFA. CFA is distinguished from structural equation modeling by the fact that in CFA, there are no directed arrows between latent factors. In other words, while in CFA factors are not presumed to directly cause one another, SEM often does specify particular factors and variables to be causal in nature. In the context of SEM, the CFA is often called 'the measurement model', while the relations between the latent variables (with directed arrows) are called 'the structural model'.

## **Evaluating model fit**

In CFA, several statistical tests are used to determine how well the model fits to the data. Note that a good fit between the model and the data does not mean that the model is “correct”, or even that it explains a large proportion of the covariance. A “good model fit” only indicates that the model is plausible (Schermelleh-Engel, Moosbrugger, and Müller (2003). When reporting the results of a confirmatory factor analysis, one is urged to report: a) the proposed models, b) any modifications made, c) which measures identify each latent variable, d) correlations between latent variables, e) any other pertinent information, such as whether constraints are used (Jackson, Gillaspay, and Purc-Stephenson (2009). With regard to selecting model fit statistics to report, one should not simply report the statistics that estimate the best fit, though this may be tempting.

Though several varying opinions exist, Kline (2010) recommends reporting the Chi-squared test, the Root mean square error of approximation (RMSEA), the comparative fit index (CFI), and the standardised root mean square residual (SRMR).

### **Absolute fit indices**

Absolute fit indices determine how well the a priori model fits, or reproduces the data. Absolute fit indices include, but are not limited to, the Chi-Squared test, RMSEA, GFI, AGFI, RMR, and SRMR (Hooper, Coughlan, and Mullen (2008).

### **Chi-squared test**

The chi-squared test indicates the difference between observed and expected covariance matrices. Values closer to zero indicate a better fit; smaller difference between expected and observed covariance matrices (Gatignon, 2010). Chi-squared statistics can also be used to directly compare the fit of nested models to the data. One difficulty with the chi-squared test of model fit, however, is that researchers may fail to reject an inappropriate model in small sample sizes and reject an appropriate model in large sample sizes. As a result, other measures of fit have been developed.

### **Root mean square error of approximation**

The root mean square error of approximation (RMSEA) avoids issues of sample size by analyzing the discrepancy between the hypothesized model, with optimally chosen parameter estimates, and the population covariance matrix (Hooper, Coughlan, and

Mullen (2008). The RMSEA ranges from 0 to 1, with smaller values indicating better model fit. A value of .06 or less is indicative of acceptable model fit.

### **Root mean square residual and standardized root mean square residual**

The root mean square residual (RMR) and standardized root mean square residual (SRMR) are the square root of the discrepancy between the sample covariance matrix and the model covariance matrix (Hooper, Coughlan and Mullen (2008)). The RMR may be somewhat difficult to interpret, however, as its range is based on the scales of the indicators in the model (this becomes tricky when you have multiple indicators with varying scales; e.g., two questionnaires, one on a 0–10 scale, the other on a 1–3 scale). The standardized root mean square residual removes this difficulty in interpretation, and ranges from 0 to 1, with a value of .08 or less being indicative of an acceptable model (Hu, Bentler and Peter, (1999)).

### **Goodness of fit index and adjusted goodness of fit index**

The goodness of fit index (GFI) is a measure of fit between the hypothesized model and the observed covariance matrix. The adjusted goodness of fit index (AGFI) corrects the GFI, which is affected by the number of indicators of each latent variable. The GFI and AGFI range between 0 and 1, with a value of over .9 generally indicating acceptable model fit (Baumgartner and Hombur (1996)).

### **Relative fit indices**

Relative fit indices (also called “incremental fit indices” and “comparative fit indices”) compare the chi-square for the hypothesized model to one from a “null”, or “baseline” model. This null model almost always contains a model in which all of the variables are uncorrelated, and as a result, has a very large chi-square (indicating poor fit) (Baumgartner and Hombur (1996)). Relative fit indices include the normed fit index and comparative fit index.

### **Normed fit index and non-normed fit index**

The normed fit index (NFI) analyzes the discrepancy between the chi-squared value of the hypothesized model and the chi-squared value of the null model (Bentler, and Bonett, (1980)). However, NFI tends to be negatively biased. The non-normed fit

index (NNFI; also known as the Tucker-Lewis index, as it was built on an index formed by Tucker and Lewis, in 1973) resolves some of the issues of negative bias, though NNFI values may sometimes fall beyond the 0 to 1 range. Values for both the NFI and NNFI should range between 0 and 1, with a cutoff of .95 or greater indicating a good model fit.

### **Comparative fit index**

The comparative fit index (CFI) analyzes the model fit by examining the discrepancy between the data and the hypothesized model, while adjusting for the issues of sample size inherent in the chi-squared test of model fit, and the normed fit index (Bentler, and Bonett, (1980). CFI values range from 0 to 1, with larger values indicating better fit. Previously, a CFI value of .90 or larger was considered to indicate acceptable model fit. However, recent studies have indicated that a value greater than .90 is needed to ensure that misspecified models are not deemed acceptable (Hu and Bentler, 1999). Thus, a CFI value of .95 or higher is presently accepted as an indicator of good fit (Hu and Bentler, 1999).

### **Identification and underidentification**

To estimate the parameters of a model, the model must be properly identified. That is, the number of estimated (unknown) parameters ( $q$ ) must be less than or equal to the number of unique variances and covariances among the measured variables;  $p(p + 1)/2$ . This equation is known as the "t rule". If there is too little information available on which to base the parameter estimates, then the model is said to be underidentified, and model parameters cannot be estimated appropriately (Babyak, and Green (2010).

#### **2.1.9 Emotional instability**

Emotional instability is the capacity to maintain ones emotional balance under stressful circumstances. It is the opposite of emotional stability and neuroticism. Emotionally stable persons tolerate minor stresses and strains of day to day living without becoming emotionally upset, anxious, nervous, tense, or angry. They are able to maintain composure under minor emotional stress. They are fairly constant in their basic mood, and they generally revert quickly to that state following those occasions when they have

experienced considerable stress or have been exceptionally provoked. The unstable person, on the other hand, is subject to fairly wide, frequent, and often unpredictable mood shifts that may swing from pole to pole. Emotional instability enables the person to develop an integrated and balanced way of perceiving the problems of life. This organizational ability and structured perception helps one to develop reality-oriented thinking, judgment and evaluation ability. One develops feelings, perceptions and attitudes that help in understanding the realities of life and conditions and circumstances that create miserable situations in life. Such understanding helps one promote high ego strength. This balance is playing a role in several natures and emotions, like pessimism/optimism, anxiety/calmness, aggression/tolerance, dependence/autonomy, emotion/logic, apathy/empathy.

Emotions have an influential value in life, control on emotions is essential for prosperous life. A person who fails to control his or her emotions faces lot of problems in day to day life. Even emotional instability results happy and adjustable life therefore emotional instability is an important aspect of human life. Emotional instability is one of the seven important indicators of mental health (Matheen, 2011). Emotional instability is the process in which the personality is continuously striving for greater sense of emotional health, both intra-physically and intrapersonally (Smitson, 1974). Emotional stable individuals are calm and happy, they are satisfied with their life; they deal with the situation in perfect way and solve their problems easily. In present days where people live with highly ambitious and competitive society to work hard for prosperous life they do lot for the betterment of life but on another side emotional pressure is increasing also in students who has a tough competition from their class till getting job, they lose their control over their emotions which results imbalanced and maladjusted personality. Because of their uncontrolled emotions their family suffers lot even they fail in making and maintaining relationships. Also our students who have no control on their emotions misbehave with their classmates, roommates, teachers etc. thus they became dangerous for the society. Thus emotional instability is essential for educational growth and development; teachers should taught students how to make control, maintain, and develop emotions as emotions are present in every activity and they are prime movers of thought and conduct. That is why researchers conduct huge number of researches to



highlight the importance and various aspects of emotions. Here the investigator reviews few of them.

Emotional instability refers to rapid, often exaggerated changes in mood, where strong emotions or feelings (uncontrollable laughing or crying, or heightened irritability or temper) occur. These very strong emotions are sometimes expressed in a way that is not related to the person's emotional state. When a person is emotionally labile emotions can be out of proportion to the situation or environment the person is in. For example, a person may cry, even when they are not unhappy - they may cry just in response to strong emotions or feelings, or it may happen "out of the blue" without warning (Leichsenring, Leibing, Kruse and Leweke (2011). Emotional instability can be caused by chemical imbalances in the brain, such as a decrease in serotonin (as seen in depression) and also fluctuating levels of dopamine and serotonin (as seen in conditions such as bipolar disorder). Environmental causes can also create emotional instability. Causes such as grief and loss, abuse, abandonment, and detachment can cause emotional instability. This disorder is about 5 times more common among first-degree biological relatives of those with the disorder than in the general population. There is also an increased familial risk for substance-related disorders, antisocial personality disorder, and mood disorders.

The causes of emotional instability are unclear but seem to involve genetic, neurological, environmental, and social factors. It occurs about five times more often in a person who has an affected close relative. Adverse life events appear to also play a role. The underlying mechanism appears to involve the frontolimbic network of neurons. EI is recognized by the Diagnostic and Statistical Manual of Mental Disorders (DSM) as a personality disorder, along with nine other such disorders.<sup>[5]</sup> The condition must be differentiated from an identity problem or substance use disorders, among other possibilities (Cloninger, 2005).

Emotional instability is typically treated with psychotherapy, such as cognitive behavioral therapy (CBT) or dialectical behavior therapy (DBT). DBT may reduce the risk of suicide in the disorder. Therapy for emotional instability can occur one-on-one or in a group. While medications cannot cure emotional instability, they may be used to help with the associated symptoms. Despite no evidence of their (Stoffers-Winterling, Storebø

and Lieb (2020) effectiveness, SSRI antidepressants and quetiapine remain widely prescribed for the condition. Severe cases of the disorder may require hospital care.

About 1.6% of people have emotional instability in a given year, with some estimates as high as 6%. Women are diagnosed about three times as often as men. The disorder appears to become less common among older people. Up to half of those with emotional instability improve over a ten-year period. Those affected typically use a high amount of healthcare resources.

The prevalence of emotional instability is about 2% of the general population. It is seen in 10% of psychiatric outpatients, and 20% of psychiatric inpatients. This disorder is more frequent in females (about 75%) than males. Emotional instability and impulsivity are very common in adolescents, but most adolescents grow out of this behavior (Chapman, 2019). Unfortunately, for some, this emotional instability and impulsivity persists and intensifies into adulthood; thus they become diagnosed with this disorder. The course of this disorder is quite variable. The most common pattern is one of chronic instability in early adulthood. This disorder is usually worse in the young-adult years and it gradually decreases with age. During their 30s and 40s, the majority of individuals with this disorder attain greater stability in their relationships and vocational functioning. After about 10 years, about half of individuals with this disorder no longer meet the full criteria for Borderline Personality Disorder.

Whilst the condition is not very common, emotional instability is classed as a serious mental health problem due to the high incidence of self-harming and suicidal tendencies. Most people suffering from emotional instability disorder suffer from very low self-esteem, which has a knock-on effect on all areas of life and many sufferers are prone to bouts of extreme depression and a chronic sense of emptiness. If left untreated, the patient can begin to withdraw from the world and give in to their internal pain, distress and emotional numbness (Aviram, Brodsky and Stanley, 2006).

Signs and symptoms

Emotional instability is characterized by nine signs and symptoms. To be diagnosed, a person must meet at least five of the following:

- Frantic efforts to avoid real or imagined abandonment
- Unstable and chaotic interpersonal relationships, often characterized by alternating between extremes of idealization and devaluation, also known as "splitting"
- Markedly disturbed sense of identity and distorted self-image
- Impulsive or reckless behaviors (e.g., impulsive or uncontrollable spending, unsafe sex, substance use disorders, reckless driving, binge eating)
- Recurrent suicidal gestures or self harm
- Intense or uncontrollable emotional reactions and rapidly shifting between different emotional states
- Chronic feelings of emptiness
- Inappropriate, intense anger or difficulty controlling anger
- Transient, stress-related paranoid ideation or severe dissociative symptoms

Overall, the most distinguishing symptoms of emotional instability are pervasive patterns of instability in interpersonal relationships and self-image, alternating between extremes of idealization and devaluation of others, along with varying moods and difficulty regulating strong emotional reactions. Dangerous or impulsive behavior is also correlated with the disorder. Other symptoms may include feeling unsure of one's identity, morals, and values; having paranoid thoughts when feeling stressed; depersonalization; and, in moderate to severe cases, stress-induced breaks with reality or psychotic episodes. Individuals with EI often have comorbid conditions, such as depressive and bipolar disorders, substance use disorders, eating disorders, post-traumatic stress disorder, and attention-deficit/hyperactivity disorder (Blom JD (2010).

Patients suffering from emotional instability are subject to mercurial mood swings, often for no apparent reason. Such changeable mood patterns can play havoc with close personal relationships, which makes living with a person suffering from emotional instability disorder very challenging. A fear of abandonment is another common symptom of emotional instability disorder. This particular symptom is often related to the underlying cause of the disorder: a traumatic childhood characterized by parental neglect,

abuse, and rejection. Abandonment issues in adulthood lead to very intense and emotional relationships where the sufferer is often insecure and likely to cling on to dysfunctional relationships with people who treat them badly.

Many patients suffering from emotional instability exhibit destructive behavioral traits. These can take on many different forms and include the likes of alcohol and drug abuse, gambling and compulsive shopping addictions, to the development of eating disorders and inappropriate or high-risk sexual behavior. Alcohol and drug abuse often occur as a direct result of the other symptoms of Emotional instability. Frequent bouts of depression and a sense of emptiness can cause the patient to seek solace in alcohol and drugs as a way of numbing the intense pain. Unfortunately, this is never the answer and self-medicating only serves to exacerbate interpersonal relationship problems and underlying emotional issues.

Emotional instability patients are often very impulsive and likely to make rash decisions without thinking their actions through. This type of behavior pattern can include embarking on or ending relationships very quickly, or even rushing from one job to another.

In chronic cases of emotional instability disorder, patients can become delusional and suffer from paranoia, psychotic episodes and hallucinations. These can include paranoid delusions about the people around them, hearing voices in their head, and an extreme sense of disconnection from the world.

## **2.2 Theoretical Framework**

### **2.2.1 Rationale for the selection of EI measures for the study**

In The Encyclopedia of Applied Psychology, Spielberger (2004) states there are currently three major conceptual models of emotional intelligence: (1) the Salovey-Mayer model which defines this construct as the ability to perceive, understand, manage, and use emotions to facilitate thinking, measured by an ability based measure; (2) the Goleman model which views the construct as an array of skills and competencies that drive managerial performance, measured, by a multi-rater assessment; and (3) the Bar-On model which describes a crosssection of interrelated emotional and social competencies, skills and facilitators that impact intelligent behaviour, measured by self-report. The

Ability models regard emotional intelligence as a pure form of mental ability and thus as a pure intelligence. In contrast, mixed models of emotional intelligence combine mental ability with personality characteristics such as optimism and well-being (Mayer, 1999). Currently, the only ability model of emotional intelligence is that proposed by John Mayer and Peter Salovey. Two mixed models of emotional intelligence have been proposed, each within a somewhat different conception. Reuven Bar-On has put forth a model based within the context of personality theory, emphasizing the co-dependence of the ability aspects of emotional intelligence with personality traits and their application to personal well-being. In contrast, Daniel Goleman proposed a mixed model in terms of performance, integrating an adolescent's abilities and personality and applying their corresponding effects on performance in the workplace (Goleman, 2001).

On the basis of review of literature concerning different conceptualizations and measurements, two major theoretical perspectives and their associated measures were identified: Petrides and Furnham (2001, 2003) four-dimensional trait-based model of well-being, self-control, emotionality, and sociability, and; Salovey and Mayer's (1990; Mayer and Salovey, 1997) four-dimensional ability model of emotional perception, appraisal, and expression, emotional facilitation of thinking, understanding emotions, and regulating emotions. Three major EI instruments based on these models include the Trait Emotional Intelligence Questionnaire (TEIQue; Petrides, Pérez-Gonzalez et al., 2007), the Mayer-Salovey- Caruso Emotional Intelligence Test (MSCEIT; Mayer et al., 2002), and a self-report measure based on the Mayer and Salovey's (1990, 1997) model - the Self-Report Emotional Intelligence Test (SREIT; Schutte et al., 1998). The decision to choose these three measures (TEIQue, MSCEIT, and SREIT) was based on following criteria.

1. The measure belongs to one of the three categories defined by Joseph and Newman (2010), that is, Self-report ability measures, Self-report mixed measures and Performance-based measures.
2. The measure taps the well-known (and well-established) EI theory or model (mixed versus ability EI).
3. The measure has received considerable research attention such that there is information on one or more types of test validity available in the peer-reviewed

journals.

4. The measure has also been used and tested in cultures other than the countries where it has been developed.
5. The measure focuses on adolescent EI and is measured free of context (is not developed to measure EI only within adolescents) and can thus be meaningfully compared to other such measures.
6. The measure can also be used for EI assessment in schools, for example, to diagnose the developmental needs of students.
7. The measure has been approved for use in current study by the jury of four judges in each sample. The jury consists of two students and two university professors.
8. The three measures have not been used together in the same study.
9. Finally, time and cost constraints lead us to choose these measures for the study.

### **2.2.2 Salovey and Mayer's (1990) EI Model**

Peter Salovey and John Mayer first coined the term "emotional intelligence" in 1990 (Salovey and Mayer, 1990) and have since continued to conduct research on the significance of the construct. They propose that adolescents differ in their ability to process information of an emotional nature and in their ability to relate emotional processing to a wider cognition. They then posit that this ability is seen to manifest itself in certain adaptive behaviours (Mayer, Salovey, and Caruso, 2000). Mayer and Salovey's conception of emotional intelligence is based within a model of intelligence, that is, it strives to define emotional intelligence within the confines of the standard criteria for a new intelligence (Mayer, Salovey, Caruso, and Sitarenios, 2003).

They further mentioned that emotional intelligence is based on a model of intelligence. It proposes that emotional intelligence is comprised of two areas: experiential (ability to perceive, respond, and manipulate emotional information without necessarily understanding it) and strategic (ability to understand and manage emotions without necessarily perceiving feelings well or fully experiencing them). He had developed four branches for this model. (Mayer and Salovey, 1997).

The first branch, emotional perception, is the ability to be self-aware of emotions and to express emotions and emotional needs accurately to others. Emotional perception also includes the ability to distinguish between honest and dishonest expressions of emotion. The second branch, emotional assimilation, is the ability to distinguish among the different emotions such as feelings which identify those that are influencing their thought processes. The third branch, emotional understanding, is the ability to understand complex emotions (such as feeling two emotions at once) and the ability to recognize transitions from one to the other. Last and the fourth branch, emotional management, is the ability to connect or disconnect from an emotion depending on its usefulness in a given situation. Salovey and Mayer's (2000) conception of EI strives to define EI within standard criteria for a new intelligence. Thus, the ability based model views emotions as useful source of information that helps one to work in social environment.

#### **Mayer and Salovey's (1997) four branch model of emotional intelligence**

This model of EI includes four types of abilities:

1. Perceiving emotions the ability to identify and interpret emotions in faces, pictures and voices including the ability to identify one's own emotions.
2. Using emotions the ability to use emotions to facilitate various cognitive activities, such as thinking and problem solving. The emotionally intelligent person can be benefited in his or her changing moods in any work.
3. Understanding emotions the ability to comprehend emotion language and to appreciate complicated relationships among emotions. For example, understanding emotions include the ability to be sensitive to slight variations between emotions, and the ability to recognize and describe how emotions grow over time.
4. Managing emotions the ability to regulate emotions in both ourselves and in others. Therefore, the emotionally intelligent person can tie together emotions, even negative ones, and manage them to achieve intended goals.

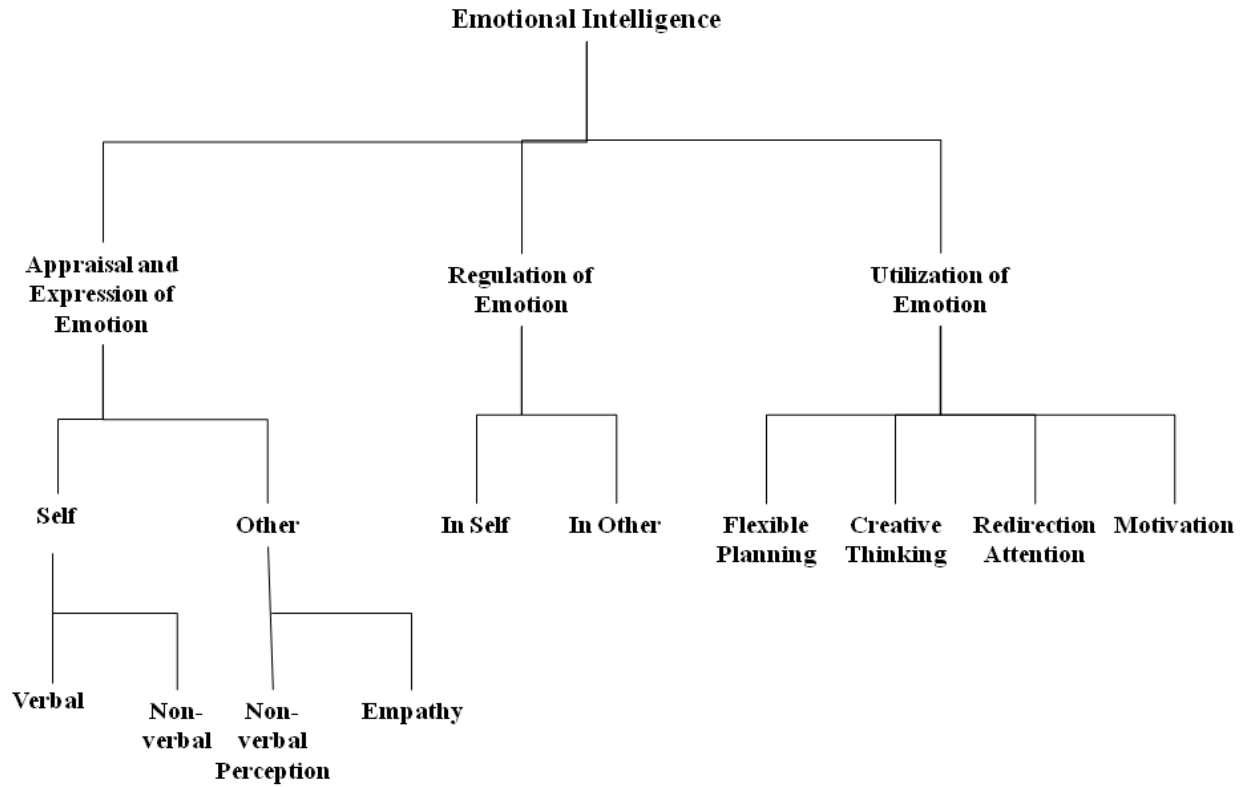
### **Measures of Mayer and Salovey's Model**

Mayer and Salovey began testing the validity of their four-branch model of emotional intelligence with the Multibranch Emotional Intelligence Scale (MEIS). Composed of 12 subscale measures of emotional intelligence, evaluations with the Multibranch Emotional Intelligence Scale indicate that emotional intelligence is a distinct intelligence with 3 separate sub factors: emotional perception, emotional understanding, and emotional management. There were, however, certain limitations to the Multibranch Emotional Intelligence Scale. Not only was it a lengthy test (402 items) but it also failed to provide satisfactory evidence for the integration branch of the Four Branch Model (Mayer, Salovey, and Caruso, 2002). For these and other reasons, Mayer and Salovey decided to design a new ability measure of emotional intelligence. The current measure of Mayer and Salovey's model of emotional intelligence, the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) was normed on a sample of 5,000 men and women. The MSCEIT is designed for adolescents 17 years of age or older and aims to measure the four abilities outlined in Salovey and Mayer's model of emotional intelligence. With less than a third of the items of the original Multibranch Emotional Intelligence Scale, the Mayer-Salovey-Caruso Emotional Intelligence Test is comprised of 141 items.



## The Ability EI components

Fig 2.1. Mayer and Salovey's Model



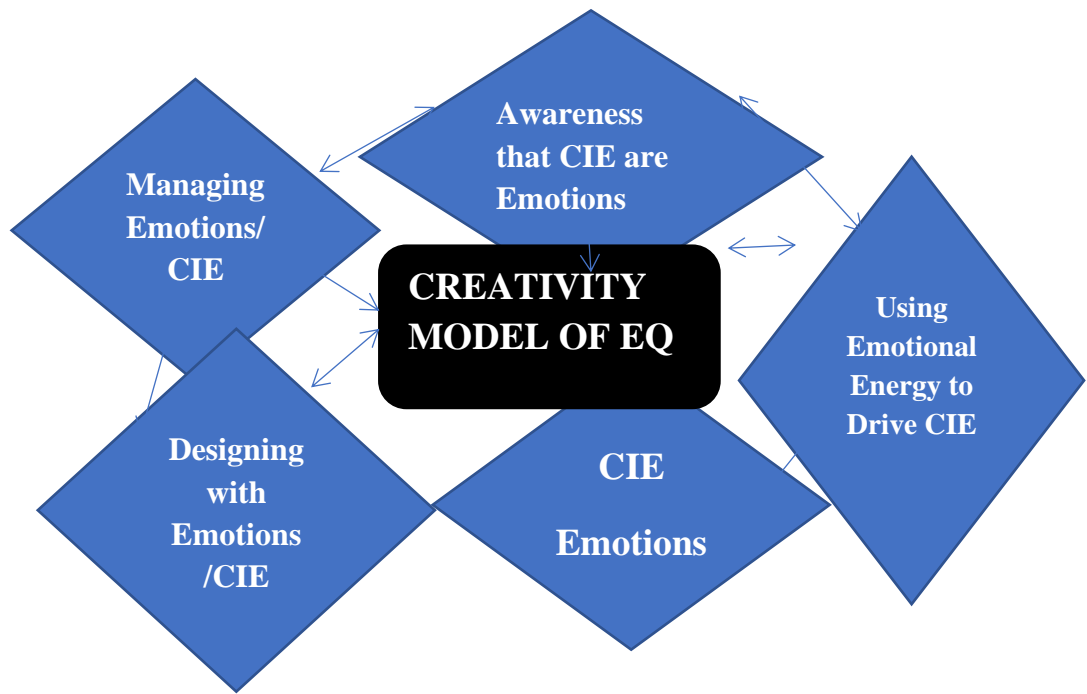
Petrides and Furnham (2001) conceptualized EI in terms of personality. They organized in a single framework all affect related aspects of personality and labeled their model as Trait Emotional Intelligence Model. According to Petrides (2009), Focusing on personality traits relating to emotions yields emotional intelligence. Focusing on traits relating to social behaviour yields social intelligence, etc. Through this strategy, the faux intelligences can be integrated into existing personality taxonomies, which is where they belong conceptually. Petrides and Furnham (2001) proposed a distinction between two EI constructs: trait emotional intelligence (or trait emotional self-efficacy) and ability EI (or cognitive EI). Trait EI refers to a constellation of behavioral dispositions and self-perceptions concerning one's ability to recognize, process, and utilize emotion-laden information. It encompasses empathy, impulsivity, and assertiveness as well as elements of social intelligence and personal intelligence (Petrides and Furnham, 2003).

### **2.2.3 Akinboye's 5 Branch Creativity of Emotional Intelligence Model**

Emotional intelligence describes the human adaptive capacity to sense, understand and effectively apply the energy and power of emotions as the driving force for personal and social adjustments, learning, creativity, innovation, entrepreneurship, leadership, team skills, conflict resolution, and stress coping". It is through the driving energy of positive emotions that we can conduct our personal and social relationships, learning, leadership, team work, creativity, and innovation, entrepreneurial, intellectual and technical activities effectively (Akinboye 2009)

Akinboye's Emotional Intelligence creativity model is designed to fill the vacuum of creativity dimensional aspect of emotional intelligence. His model was developed to orchestrate the inseparability of creativity and emotions. In fact creativity and its applied derivatives are emotions in their own right, each element of the five branch model are as follows:

- Awareness of Emotion
- Knowing Emotion
- Applying Emotions
- Creative designs with the energy of Emotion
- Managing Emotions



**Fig 2.2. Akinboye Creativity Model of EQ**

**Awareness of Emotion:** Awareness of different emotions including creativity, innovation and entrepreneurship as emotion. It is the ability to identify emotions in self and in others. One must be able to develop emotional personal competence and emotional social competence.

**Knowing Emotions:** Knowing creativity, innovation and entrepreneurship emotions. It is the ability to know complex emotion and how one emotion leads to another. This ability to make sense of the meaning of feelings is important in building effective relationship as it guides one to strategically use emotion.

**Applying Emotions:** Applying emotions to develop Emotional Personal Competency and Emotional Social Competency. This refers to the ability of an adolescent to be able to apply emotions and to use the energy and the power of emotion in problem-solving, leadership effectiveness, personal and social relationships, stress coping, creativity, innovation, entrepreneurship, life-long learning, conflict management and empathy.

**Designing with Emotion:** This involves the following:

- Designing and developing salable values
- Designing and developing innovative researches, developing new services and values
- Designing and developing new products
- Designing and developing new wealth
- Adding value to the existing services, products, processes and enterprises

Designs and construct with the energy and power of emotion to do whatever we want to do as human (research, leadership, worship, responsible human behavior, education, conflict management, health etc.) is better with the energy and power of emotion. Design and construct better things with the energy and power of creativity emotions.

**Managing Emotions:** Choosing carefully how to respond to emotions in self and in others as basis for self-control, relationship management, personal and social competence. Understanding how to manage emotions in a way to develop creativity is a precious discovery.

#### **2.2.4 Bar-On: A Mixed Model of Emotional Intelligence**

The director of the Institute of Applied Intelligences in Denmark and consultant for a variety of institutions and organizations in Israel, Reuven Baron developed one of the first measures of emotional intelligence that used the term "Emotion Quotient". Bar-On's model of emotional intelligence relates to the potential for performance and success, rather than performance or success itself, and is considered process-oriented rather than outcome-oriented (Baron, 2002). In his model, Bar-On outlines 5 components of emotional intelligence: intrapersonal, interpersonal, adaptability, stress management, and general mood

Bar-On's model of emotional intelligence relates to the potential for performance and success, rather than performance or success itself, and is considered process-oriented rather than outcome-oriented (Bar-On, 2002). It focuses on (1) a group of emotional and social abilities, including the ability to be aware of, understand, and express oneself, and the ability to be aware of, understand, and relate to others, (2) the ability to deal with strong emotions, and the ability to adapt to change and solve problems of a social or personal nature (Bar-On, 1997). Bar-On mentioned that emotional intelligence develops over time and that it can be improved through training, programming and therapy (Bar-On, 2002).

Bar-On found that adolescents with higher than average E.Q.'s are in general more successful in meeting environmental demands and pressures and deficiency in emotional intelligence can mean a lack of success and the existence of emotional problems. In general, Bar-On considers emotional intelligence and cognitive intelligence to contribute equally to a person's general intelligence, which then offers an indication of one's potential to succeed in life (Bar-On, 2002).

Bar-On conceptual model: (i) the ability to understand emotions as well as express our feelings and ourselves; (ii) the ability to understand others feelings and relate with people; (iii) the ability to manage and control our emotions; (iv) the ability to manage change and solve problems of an intrapersonal and interpersonal nature; (v) the ability to generate positive mood and be self-motivated. These meta-factors of the conceptual model of emotional-social intelligence are referred as follows in the Bar-On measures of

this model. Each of these 5 meta-factors comprises a number of closely related competencies, skills and facilitators (15 in all), are listed and briefly defined below.

**Intrapersonal** (self-awareness and self-expression):

- Self-Regard (being aware of, understanding and accepting ourselves) .
- Emotional Self-Awareness (being aware of and understanding our emotions)
- Assertiveness (expressing our feelings and ourselves nondestructively)
- Independence (being self-reliant and free of emotional dependency on others)
- Self-Actualization (setting and achieving goals to actualize our potential)

**Interpersonal** (social awareness and interaction):

- Empathy (being aware of and understanding how others feel)
- Social Responsibility (identifying with and feeling part of our social groups)
- Interpersonal Relationship (establishing mutually satisfying relationships)

**Stress Management** (emotional management and control):

- Stress Tolerance (effectively and constructively managing our emotions)
- Impulse Control (effectively and constructively controlling our emotions)

**Adaptability** (change management):

- Reality Testing (validating our feelings and thinking with external reality)
- Flexibility (coping with and adapting to change in our daily life)
- Problem solving (generating effective solutions to problems of anintra personal and interpersonal nature).

**General Mood** (self-motivation):

- Optimism (having a positive outlook and looking at the brighter side of life)
- Happiness (feeling content with ourselves, others and life)

**Measures of Bar-On's Model**

Reuven Bar-On's measure of emotional intelligence, the Bar-On Emotion Quotient Inventory (EQ-i), is a self-report measure of emotional intelligence for adolescents sixteen years of age and over. One hundred and thirty three items are used to obtain a Total EQ (Total Emotion Quotient) and to produce five composite scales corresponding to the 5 main components of the Bar-On model: Intrapersonal EQ, Interpersonal EQ, Adaptability EQ, Stress Management EQ, and General Mood EQ. Bar-On has developed several versions of the Emotion Quotient Inventory to be used with various populations

and in varying situations. In addition, the original EQ-i is available in several languages, including Spanish, French, Dutch, Danish, Swedish, Norwegian, Finnish, and Hebrew (Bar-On, 2002).

### **2.2.5 Goleman: A Mixed Model of Emotional Intelligence**

Daniel Goleman, a psychologist and science writer who has previously written on brain and behaviour research for the New York Times, discovered the work of Salovey and Mayer in the 1990's. Inspired by their findings, he began to conduct his own research in the area and eventually wrote *Emotional Intelligence* (1995), the landmark book which familiarized both the public and private sectors with the idea of emotional intelligence. Goleman's model outlines four main emotional intelligence constructs. The first, self-awareness, is the ability to read one's emotions and recognize their impact while using gut feelings to guide decisions. Self-management, the second construct, involves controlling one's emotions and impulses and adapting to changing circumstances. The third construct, social awareness, includes the ability to sense, understand, and react to other's emotions while comprehending social networks. Finally, relationship management, the fourth construct, entails the ability to inspire, influence, and develop others while managing conflict (Goleman, 1998). The organization of the competencies under the various constructs is not random; they appear in synergistic clusters or groupings that support and facilitate each other (Boyatzis, Goleman, and Rhee, 1999).

#### **Measures of Goleman's Model**

Several measurement tools have been developed based on Goleman's model of emotional intelligence and its corresponding competencies. Included among these are the Emotional Competency Inventory (ECI; Boyatzis, 1994), the Emotional Intelligence Appraisal (EIA; Bradberry, Greaves, Emmerling, et al., 2003), and the Work Profile Questionnaire - Emotional Intelligence Version (WPQei; Performance Assessment Network, 2000).



**Fig 2.3. Goleman's Model**

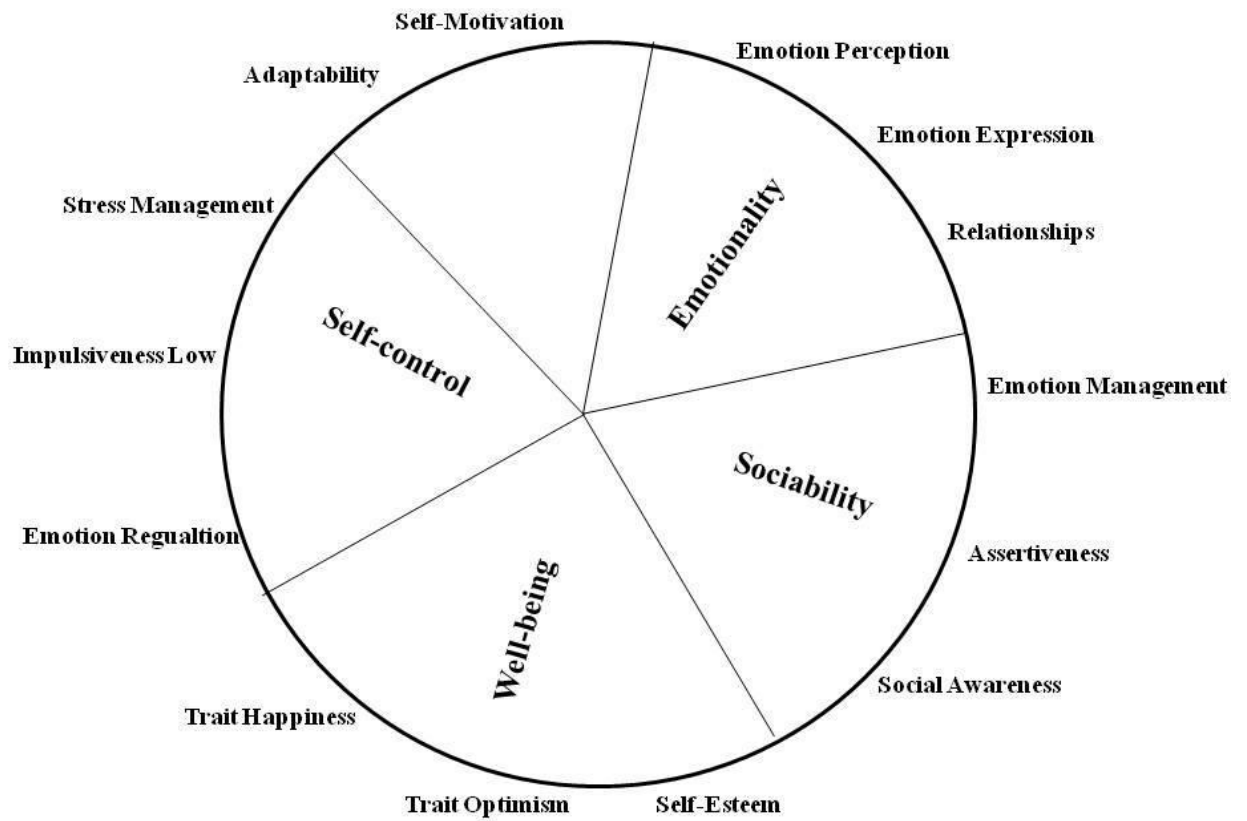
Goleman's conceptual model of emotional intelligence and corresponding emotional competencies. The constructs and competencies fall under one of four categories: the recognition of emotions in oneself or others and the regulation of emotion in oneself or others. Goleman's new model outlines four main Emotional Intelligence constructs:

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



### **2.2.6 Petrides and Furnham's (2001) Trait EI Model**

Based on the content analysis of emotional intelligence literature, Petrides and Furnham (2001) presented the first systematically derived sampling domain of trait EI. The rationale was to include those elements (facets) that are common to various EI models. They identified 15 facets as common.



**Fig 2.4. Petrides and Furnham's (2001) Trait EI Model**

The first trait EI factor Well-being reflects a generalized sense of wellbeing, extending from past achievements to future expectations. This factor includes the facets of: (a) Trait Happiness (cheerful and satisfied with their lives); (b) Trait Optimism (confident and likely to look on the bright side of life); (c) Self-Esteem (successful and self-confident).

The second trait EI factor Self-control refers to the ability to control impulses and regulate external pressures and stress. This factor includes three facets: (a) Emotion Regulation (capable of controlling their emotions); (b) Stress Management (capable of withstanding pressure and regulating stress); and (c) Impulsiveness (low) (reflective and less likely to give in to their urges).

The third trait EI factor Emotionality refers to being in touch with one's own and other people's feelings. People high on emotionality can perceive and express emotions and use these qualities to develop and sustain close relationships with important others. This factor includes four facets of: (a) Emotion Perception (self and others) (clear about their own and other people's feelings); (b) Emotion Expression (capable of communicating their feelings to others); (c) Relationships (capable of maintaining fulfilling personal relationships); and (d) Trait Empathy (capable of taking someone else's perspective).

The fourth factor Sociability emphasizes social relationships and social influence. The focus is on the adolescent as an agent in social contexts, rather than on personal relationships with family and close friends (Petrides, 2009). This factor includes facets of: (a) Social Awareness (accomplished networkers with superior social skills); (b) Emotion Management (others) (capable of influencing other people's feelings); (c) Assertiveness (forthright, frank, and willing to stand up for their rights). Finally, the facets Adaptability (flexible and willing to adapt to new conditions) and Self-Motivation (driven and unlikely to give up in the face of adversity) do not belong to any particular factor.

### **2.2.7 Generalizability Theory**

Generalizability theory, or G theory, is a statistical framework for conceptualizing, investigating, and designing reliable observations. It is used to determine the reliability (i.e., reproducibility) of measurements under specific conditions. It is particularly useful for assessing the reliability of performance assessments. It was originally introduced in Cronbach, Nageswari, and Gleser, (1963).

In G theory, sources of variation are referred to as facets. Facets are similar to the "factors" used in analysis of variance, and may include persons, raters, items/forms, time, and settings among other possibilities. These facets are potential sources of error and the purpose of generalizability theory is to quantify the amount of error caused by each facet and interaction of facets. The usefulness of data gained from a G study is crucially dependent on the design of the study. Therefore, the researcher must carefully consider the ways in which he/she hopes to generalize any specific results. Is it important to generalize from one setting to a larger number of settings? From one rater to a larger number of raters? From one set of items to a larger set of items? The answers to these questions will vary from one researcher to the next, and will drive the design of a G study in different ways (Brennan, 2001).

G theory grew out of the recognition that the undifferentiated error in classical test theory (Feldt and Brennan, 1989) provided too gross a characterization of the potential and/or actual sources of measurement error. In classical test theory measurement error is undifferentiated random variation; the theory does not distinguish among various possible sources. G theory pinpoints the sources of systematic and unsystematic error variation, disentangles them, and estimates each one. Moreover, in contrast to the classical parallel-test assumptions of equal observed-score means, variances, and covariances, G theory assumes only randomly parallel tests sampled from the same universe. Finally, whereas classical test theory focuses on relative (rank-order) decisions (e.g., student admission to selective colleges), G theory distinguishes between relative ("norm-referenced") and absolute ("criterion-" or "domain-referenced") decisions for which a behavioral measurement is used. In G theory, a behavioral measurement (e.g., a test score) is conceived of as a sample from a universe of admissible observations. This universe consists of all possible observations that decision makers

consider to be acceptable substitutes (e.g., scores sampled on Occasions 2 and 3) for the observation in hand (scores on Occasion 1). A measurement situation has characteristic features such as test form, test item, rater, and/or test occasion. Each characteristic feature is called a facet of a measurement. A universe of admissible observations, then, is defined by all possible combinations of the levels of the facets (e.g., items, occasions).

In addition to deciding which facets the researcher generally wishes to examine, it is necessary to determine which facet will serve as the object of measurement (e.g. the systematic source of variance) for the purpose of analysis. The remaining facets of interest are then considered to be sources of measurement error. In most cases, the object of measurement will be the person to whom a number/score is assigned. In other cases it may be a group or performers such as a team or classroom. Ideally, nearly all of the measured variance will be attributed to the object of measurement (e.g. individual differences), with only a negligible amount of variance attributed to the remaining facets (e.g., rater, time, setting) (Brennan, 2001).

The results from a G study can also be used to inform a decision, or D, study. In a D study, we can ask the hypothetical question of "what would happen if different aspects of this study were altered?" For example, a soft drink company might be interested in assessing the quality of a new product through use of a consumer rating scale. By employing a D study, it would be possible to estimate how the consistency of quality ratings would change if consumers were asked 10 questions instead of 2, or if 1,000 consumers rated the soft drink instead of 100. By employing simulated D studies, it is therefore possible to examine how the generalizability coefficients (similar to reliability coefficients in Classical test theory) would change under different circumstances, and consequently determine the ideal conditions under which our measurements would be the most reliable (Shavelson, and Webb, 1991).

### **Comparison with classical test theory**

The focus of classical test theory (CTT) is on determining error of the measurement. Perhaps the most famous models of CTT is the equation, where  $X$  is the observed score,  $T$  is the true score, and  $e$  is the error involved in measurement. Although  $e$  could represent many different types of error, such as rater or instrument error, CTT only allows us to

estimate one type of error at a time. Essentially it throws all sources of error into one error term. This may be suitable in the context of highly controlled laboratory conditions, but variance is a part of everyday life. In field research, for example, it is unrealistic to expect that the conditions of measurement will remain constant. Generalizability theory acknowledges and allows for variability in assessment conditions that may affect measurements. The advantage of G theory lies in the fact that researchers can estimate what proportion of the total variance in the results is due to the individual factors that often vary in assessment, such as setting, time, items, and raters.

Another important difference between CTT and G theory is that the latter approach takes into account how the consistency of outcomes may change if a measure is used to make absolute versus relative decisions. An example of an absolute, or criterion-referenced, decision would be when an individual's test score is compared to a cut-off score to determine eligibility or diagnosis (i.e. a child's score on an achievement test is used to determine eligibility for a gifted program). In contrast, an example of a relative, or norm-referenced, decision would be when the individual's test score is used to either (a) determine relative standing as compared to his/her peers (i.e. a child's score on a reading subtest is used to determine which reading group he/she is placed in), or (b) make intra-individual comparisons (i.e. comparing previous versus current performance within the same individual). The type of decision that the researcher is interested in will determine which formula should be used to calculate the generalizability coefficient (similar to a reliability coefficient in CTT) (Wiley, 2000).

## **2.3 Empirical Review**

### **2.3.1 Emotional intelligence**

Various studies also show that not only an objective emotional link between parents and children is important, but also subjective assessment of the said link by the child himself or, from the time perspective, when the said child becomes an adult. In other words, relation between EI dimensions (perception, understanding and control of emotions) and subjectively perceived warmth of parents in the childhood is observed (Ryan, Deci, Grolnick, and LaGuardia, 2006; Sillick and Schutte, 2006; Asghari and Besharat, 2011). Nastasa and Sala (2012) confirm that cold communication in the family

negatively correlates with EI level. The adopted communication style in parent interaction with children may cause unbridled emotions of their child later. E.g., studies show that aggressiveness, inability to restrain, though most likely is determined by various factors, may be linked to the communication style in the family. Cleveland (2014) has established that aggressiveness of girls correlates with authoritarianism in the family, while EI and aggressiveness correlation is negative; the said two factors explain one fifth of social aggression cases. 12–19 year old teenager satisfaction with their parents study performed by Asghari and Besharat, 2011 showed that parents with higher EI are able to guarantee emotionally warmer climate in the family, which in its turn has an impact on children's and teenagers' EI development.

In 2012, Nizielski et al. investigated the role of teacher emotional intelligence (EI) on student misconduct and found that teacher EI was negatively related to student misconduct. They concluded that a teacher's ability to effectively regulate his or her emotions allows for the physical and behavioral expression of emotions in a manner that positively influences student behavior. Perry and Ball's (2007) previous findings support that conclusion. Perry and Ball found that compared to teachers with low EI, teachers with high EI respond very differently to situations that involve negative emotions. Although research has established that teacher EI is related to student behavior, teacher EI may also be associated with other educational factors (Nizielski et al., 2012). Some studies have focused on how teacher EI is associated with self-efficacy. These studies indicate a significant positive relationship between the two variables (Ignat, 2010).

In 2012, Allen, Ploeg, and Kaasalainen also investigated the relationship between teacher EI and teacher effectiveness, with results that were in stark contrast. In their study, the population under investigation was clinical nursing faculty members of an undergraduate nursing program in Canada. The authors point out that effective clinical teaching as they define it in their study "is associated with enhanced student learning". While results of Allen et al.'s (2012) study indicate that a positive relationship between teacher EI and student academic progress is possible, there are several limitations that may affect validity and generalizability.

Tucker and Yost (2006) concluded that emotional intelligence is not the opposite of intelligence as measured by GPA. Amirtha and Kadiravan (2006) found that gender, age and qualification influenced the emotional intelligence of school teachers. Bharwaney (2008) finds in his study that emotional intelligence competencies can be developed in students. The result says that teachers play the central role in cultivating character by inculcating self-discipline and empathy. At present, we need emotionally intelligent teacher educators to inculcate values for quality education.

More so, Perry and Ball 2007 had compared to teachers with low EI, teachers with high EI respond very differently to situations that involve negative emotions. Although research has established that teacher EI is related to student behavior, teacher EI may also be associated with other educational factors (Nizielski et al., 2012). For example, is it because of the characteristics of the group members, the environment in which they are tested, or the characteristics of the test design and questions? As student populations in public schools become more diverse, and tests assume more central roles in determining adolescent success or access to opportunities, the question of bias and how to eliminate it has grown in importance (Taylor, 2011).

While there have been many studies that focus on EI in schools, the vast majority of them have investigated the student population. Overall, these studies have found significant positive relationships between student EI and various outcomes such as academic performance, psychological functioning, social competence, and appropriate classroom behavior (Billings, Downey, Lomas, Lloyd, and Stough, 2014; Esturgó-Deu and Sala-Roca, 2010; Lanciano and Curci, 2014).

Further, EI has been used as a predictor of ability by parents as it has been found to be a predictor of life satisfaction, healthy psychological adaptation, positive interactions with peers and family and higher parental warmth (Warwick and Nettelbeck, 2004). EI has also been used in education to lay the foundations to build the culture of a school committed to learning (Parker et al., 2004). Another study by Reiff et al. (2001) showed that students with learning disabilities had lower EI scores than their non-disabled counterparts.



Moreover, some research has examined the association between parenting and children's levels of emotional intelligence. Gottman, Katz, and Hooven (1997) found that parents' attitudes, beliefs, and responses to their children's emotional expressions are related to children's emotional abilities. Martinez-Pons (1999) found that adolescents' perceptions of their parents' reinforcement, praise, and education of emotion-related behavior were related to the adolescents' self-reported trait emotional intelligence. Liau, Liau, Teoh, and Liau (2003) found parental monitoring and supervision are related to children's trait emotional intelligence. Also, Alegre and Benson (2010) detect that parental availability and control are related to late adolescents' trait emotional intelligence. Alegre (2012) as well reveal that the quality and quantity of time and interchanges which the mothers consumed with their children are affected their EI. Because it develops modeling and participates attention and close collaboration, above all, it reflects good parenting practices.

### **2.3.2 Emotional Creativity and emotional intelligence**

Creativity is also related to a number of emotional traits. For instance, creative accomplishment in the arts is related to affective disorders. Prevalence rates of affective disorders in samples of eminent artists range from 38%–43%, as compared to 2%–8% in the general population (Andreassen, 2007). Several studies suggested that the primary reason for the relationship between affective disorders and creativity might be in the experience of strong positive emotions or mild manic states. Positive or hypomanic moods increase awareness and enhance breadth and flexibility of thinking. People put in a positive mood produce more original word associations (Isen et al., 2005) and perform more successfully on tests of creative ability than people put in negative or neutral mood states. Furthermore, students who score higher on trait hypomania describe themselves as unique and creative and report engaging in more artistic or fantasy activities (Eckblad and Chapman, 2006).

Also, EI is associated with more positive social interactions and is inversely related to illicit drug and alcohol use, and aggression (e.g., Brackett and Mayer, 2003; Brackett et al., 2004). Emotional creativity is largely unrelated to cognitive intelligence (Averill and Thomas-Knowles, 1991) and is significantly correlated with a greater

number of emotional experiences (such as traumatic events and daily hassles and disappointments) and creativity in laboratory tasks requiring expression of emotion (e.g., writing a love narrative and making an expressionistic drawing; Averill, 2011; Gutbezahl and Averill, 1996).

Furthermore, EI and EC have been studied in relation to personality traits and shown to be distinguishable by their personality correlates. Similar to cognitive intelligence, EI only weakly correlates with personality traits (Brackett and Mayer, 2003; Brackett et al., 2004). Most consistently, EI is related to Agreeableness ( $r$ s between .20 and .25 over different studies; Mayer, Salovey, and Caruso, 2004). Both EI and Agreeableness address emotional attributes that contribute to the quality of social relationships, but they also have some important differences. Emotional intelligence refers to successful reasoning about emotions but does not imply an interest or willingness to apply this skill in a relationship context, and Agreeableness concerns a social orientation of cooperativeness and caring but does not have to be based in accurate perception and reasoning with emotions. On the other hand, EC is more strongly correlated with personality traits (Averill, 2011). Most centrally, the Novelty component of EC is moderately to highly correlated with Openness to Experience. In addition, Extraversion correlates with self-perceived Effectiveness, an aspect of EC that emphasizes open expression of emotion in social settings, and Neuroticism positively correlates with Novelty and negatively with Effectiveness (Averill, 2011).

The findings of a number of studies (like Batool and Khalid, 2011; Pugh, 2002) have concluded that participants who are involved in self-destructive behaviours are found to have lower emotional intelligence whereas those with higher emotional intelligence were involved in positive outcomes like prosocial behaviour, parental warmth with good peer and family relations (for example, Afolabi, 2013). According to Brackett and Mayer, (2003, emotional intelligence influences adolescent academic performance and such adolescents in this group are said to be more of extrovert, sociable, friendly, easy going and talkative than introvert. However, in a rather negative form, people with low emotional intelligence tend to find it difficult to transit from high school to university, even those that eventually transit become very lonely, reclusive, some drop out of school, while others just get by.

Other researchers (like Afolabi, 2004; Mayer, Salovey, and Caruso, 2000) were of the opinion that emotional intelligence could not be a single trait or ability but a composite of specialized reasoning abilities. Thus, an adolescent perceives emotions as consisting of recognizing and interpreting the importance of emotional states including their relations to other sensory experiences. This suggests that understanding one's emotions and that of others is an important aspect of understanding emotional development and management. This is why Afolabi, Awosola, and Omole (2010) concluded that "an adolescent's emotional intelligence is an indicator of how he or she perceives, understands and regulates emotions". In this research, Salovey and Mayer's (1990) original model of emotional intelligence was used as a basis for the development of this selfreport measure of emotional intelligence as an encompassing model that is expected to provide a reliable basis for a measure of adolescent's actual level of emotional intelligence.

### **2.3.3 Emotional Innovation and emotional intelligence**

Mumford et al (2002) considered the innovative behavior as presentation and examined some novel ideas including regulation processes and problem analysis, discovery of ideas, development and combination of ideas and their testing in theoretical terms and finally the study of their benefit. Orhan and Dinçer (2012) studied the relationship between emotional intelligence and innovative work behaviors in Turkish banking sector and reported that there was a significant relationship between emotional intelligence and emotional innovation. In addition to that, there was a significant difference between private and governmental banks in terms of emotional intelligence and emotional innovation.

Several studies have been carried out in the field of emotional intelligence. Rahim and Minors (2003), tested three dimensions of emotional intelligence (self-awareness, self-regulation and empathy) with the attention of managers to the products quality, services, and the behavior to solve the problems of subordinates at the time of conflicts' outbreak to study the effect of emotional intelligence on the quality and ability to solve the problem. Their research indicated that self-regulation had direct relation in view of quality, it means, the more the self-regulating is fostered among the managers, the more

attention is focused on the service quality. In addition, considering the results of their research the empathy had considerable effect on quality. The self-regulation and empathy also had relatively high interactive effect on quality.

Kobe et al. (2001) performed a survey on emotional intelligence effect and social intelligence in developing the ability of leadership. They reported indicated that both emotional intelligence and social intelligence were effective variables in developing the leadership ability in adolescents. Also in Iran, Rezaeiyan and Koshtegar (2009) considered the relationship of emotional intelligence and the organizational commitment in the form of a design. They reported that the emotional intelligence had significant relationship with organizational commitment of employees. Among the dimensions of emotional intelligence, the relation management had the maximum effect on organizational commitment. Zeinivand (2009) studied the relationship between emotional intelligence and the performance of middle class teachers and reported that there was a significant relationship among the self-management components, social-awareness and relation management as well as the teachers' performance.

Results showed that overall emotional intelligence score predicted positive and significant creativity these results with the results of (Luther, Cicchetti, and Becker, 2000; Aljosscha, Andreas and Roland, 2006; Reindel and Robert, 2006 and Batesteni, 2001) that people with higher emotional intelligence have more creative power, is to align. According to specialists in neurology, in fact, reasoning, decision making can intersect with each other affection, excitement in the brain. Collection systems in the brain that are targeted to the thought process that we call it the argument that the choices that we answered the call decision, is dedicated. The total brain systems of emotions, feelings and emotions are so excited to have a large impact on the reasoning of our mental life interact. (Wentzel, 1997) The results showed that the two dimensions of emotional intelligence to understand the emotions of the projected picture is generally positive and significant predictor of creativity are other words that others can better understand their sentiments and emotions, may higher than the creativity. Another finding was that the creativity is a significant negative predictor of emotional control. These results with findings reported by (Rego, Sosa, Pynchon, saver, Correa, 2007; Moore, 2007; Salovey, Stroud, Woolery and Epel, 2002) Is consistent.

The results showed that overall emotional intelligence in predicting fluid is developed to explain these findings can be said of (Mayer, Caruso, and Salovey, 1999; Salovey, Bedell, Detweiller, and Mayer, 2000). Later facilitated by emotion as a source for creative thinking, decision making, problem solving. The Salovey, Caruso, Mayer, and Salovey (1997) because people think they can take good decisions, it is necessary that the dimensions of emotional intelligence in order to be high. It should be emotional intelligence as an important principle in strengthening families, schools, place of work was developed with. Also be pointed out that because people with high emotional intelligence emotional parts of their brains are thinking centres.

### **2.3.4 Emotional Entrepreneurship and emotional intelligence**

Tischeler et al (2002) highlighted that people with high emotional intelligence tend to be much happier and more successful. Davis and Whitney (2012) confirmed that emotional intelligence has a significant relationship with entrepreneurial intent. A study conducted by Goleman (1991) implied that adolescent can in a way improve and increase their emotional intelligence with a proper education and training system. For instance, Harris and Gibson (2008) argued that both the level of entrepreneurial attitude and emotional intelligence; could be increased by undergoing an entrepreneurship education and training programmes. Anderson and Jack (2008) stated that entrepreneurship education programmes could influence the students' entrepreneurial attitudes by enhancing their awareness towards entrepreneurship as an alternative career choice and by encouraging favourable attitudes toward entrepreneurship.

David and Whitney (2012). This study is believed to be able to provide information about the role of emotional intelligence as one of mechanisms that can polish the internal competence of students in Sabah. As a conclusion, emotional intelligence is believed to be one of the key factors in determining the entrepreneurial intention of adolescents, which lead them to participate in entrepreneurial activities.

Bradberry (2015), a key author on EI, stated, "Decades of research now point to emotional intelligence as the critical factor that sets star performers apart from the rest of the pack" (para. 1). At his company, Talent Smart, researchers found that EI is the strongest predictor of workplace performance. This is essential for both entrepreneurs

and intrapreneurs. The good news about EI is that this can be learned or improved on. Prior studies have indicated that EI may predict career success. Information available has shown that EI can predict job performance and job satisfaction. It was posited that EI may also affect entrepreneurship, in terms of entrepreneurial behaviors and success. The results of this study revealed that adolescent differences in entrepreneurship may only be partially attributed to EI (Ahmetoglu, Leutner, and Chamon-Preuzic, 2011) Entrepreneurs continually succeed in their efforts in the workplace. Australian entrepreneurs were examined in terms of the EI abilities. In-depth structured interviews were used. Results of the study showed that participants exhibited higher EQ levels than the norm. The study confirmed this fact EI is a prime factor in an entrepreneur's success (Cross and Travaglione, 2005).

Boren (2010) explained the essentials of EI, however, an essential element of the entrepreneurial experience is client management and retention. Client relations are key to grow any business, thus a strong EI can benefit an entrepreneur. Entrepreneurs are not working alone, but building relationships all the time. Boren included a self-assessment on EI. Current research on EI centers around affections-feelings and emotions. Entrepreneurs who tend to be more passionate about their work tend to be more successful than others. However, the ability to manage customers and employees are also important. Being able to assess both the verbal and non-verbal aspects of both employees and customers plays a key role in understanding of their key wants and needs (Chin, Raman, Yeow, and Eze, 2012).

In recent years, the concept of EI has been embraced by the scientific community. Mortan, Ripoll, and Carvalo (2014) studied the effect of EI on entrepreneurial intention and self-efficacy. EI has been affiliated with outcomes of life, such as better psychological well-being, high-quality social relationships, and increased career success. Results of previous studies showed that EI predicts work performance, job satisfaction, work commitment, and job involvement.

McLaughlin (2012) wrote her dissertation on *An emotional business: The role of emotional intelligence in entrepreneurial success*. Specifically the results dealt with the social interactions related to entrepreneurial situations such as “negotiation, obtaining

and organizing resources, identifying and exploiting opportunities, managing stress, obtaining and maintaining customers, and providing leadership” (para. Abstract).

Awad and Ali (2012) confirmed that a managers’ EI, employee creativity, and organizational atmosphere had a positive direct effect on a person’s entrepreneurial orientation. More interestingly, EI directly affected relationships within the organization, which, in turn, positively affected employee creativity. Encouraging an entrepreneurial orientation within an organization may contribute to an increase in an organization’s success.

Ngah, Wahyukaton, Salleh, and Sarmidy (2016) studied the effects EI on entrepreneurs in Malaysia and Indonesia. EI skills are important to entrepreneurs because of their need to manage social interactions with other adolescents. Such interactions include but not limited to activities such as gaining and maintaining customers, presenting to investors, negotiating, as well as attracting, selecting, and handling employees, suppliers, and partners. Ngah et al. (2016) defined as a set of adolescent social abilities or skills to discriminate, monitor, and use-self and other’s emotions to regulate one’s thinking and action. The effects EI are important to entrepreneurs because of their need to manage social interactions with other adolescents. Such interactions include but not limited to activities such as gaining and maintaining customers, presenting to investors, negotiating, as well as attracting, selecting, and handling employees, suppliers, and partners. Ngah et al. (2016) asserted that EI is well known to be a combination of competencies. Those competencies enable adolescent’s ability to monitor and manage his or her emotions, to properly determine the emotional state of others and to influence opinions. Ngah et al. (2016) found that being aware and understanding their emotions helps entrepreneurs channel positive or negative effects into appropriately identifying and solving problems relevant to their lives.

### **2.3.5 Self-regulation and emotional intelligence**

Another study, this time about the nature and degree of SA and personal growth initiative in school teachers was done by Rapheal and Paul (2014). To carry out the study, the researchers used the Self-actualization scale, and also the Personal Growth initiative scale by Robitscheck. Their data analysis revealed that there is a significant positive

relationship between these two variables. What is more, the results also indicated that the more the teachers' years of service and ages are the higher their SA scores will be. Sa'nchez-Ruiz et al. (2011) concluded that there existed a strong relationship between creativity and EI.

In addition, Pajouhandeh (2013) carried out an investigation to assess the relationship between personal development and SA in university students. They were evaluated by Kettle's 16 Factor Test and SA Inventory (SAI). The participants of his study were grouped into two groups of high and low self-actualization. The correlation coefficient depicted that there was a positive correlation between personality development and SA. Moreover, a significant difference between these two groups was found. That is, those who belonged to the group, who had high self-actualization, did better on 16 Factor Test as well.

Moreover, Cameron (2012) discussed creativity within the workplace and its relationship to participants' self-actualization and also their motivation. The results of the study showed no significant difference in SA across career groups who were highly creative or less creative, while those who were in the middle had the highest scores on SA. Moreover, the results showed that those whose career needs high creativity were more intrinsically motivated than others. Herbst (2003) studied seventy-one employees to find the relationship between selfactualization and EI. She finally came to the conclusion that in order to reach self-actualization, one should try to overcome fears and negative thoughts. The author indicated that those who want to reach this goal should develop their EI.

Self-actualization was more strongly related to Plasticity than the mere absence of deprivation (Stability), which dovetailed with a number of other findings in this study. In terms of curiosity, the strongest independent predictor of self-actualization (by far) was Joyous Exploration, and in a regression model, Deprivation Sensitivity (which reflects more of an obsessive drive to solve problems) was not independently predictive of self-actualization. In terms of psychological needs, self-actualization was much more strongly related to the satisfaction of the basic needs proposed by Self-Determination Theory (relatedness, competence, and autonomy; Ryan and Deci, 2000) than the absence of deprivation of these needs. Taken together, this total pattern of data supports Maslow's



(1950, 1962/1998) contention that self-actualized individuals are more motivated by growth and exploration than by fulfilling deficiencies in basic needs.

Self-actualization also showed strong linkages to multiple aspects of wellbeing. Not only was self-actualization strongly correlated with greater life satisfaction, but self-actualization also demonstrated strong correlations with all of the facets of Ryff's (1989) model of psychological well-being: self-acceptance, positive relations, personal growth, autonomy, environmental mastery, and purpose. The study also found support for Maslow's observation that self-actualized individuals are more likely to report self-transcendent experiences (Revelle, and Wilt, 2013). However, self-actualization was strongly correlated with the unity aspect of the self-transcendent experience, but not the sense of loss of self. This more granular finding within the domain of self-transcendence supports Maslow's contention that self-actualizing individuals are able to paradoxically merge with a common humanity while at the same time able to maintain a strong identity and sense of self.

### **2.3.6 Emotional maturity and emotional intelligence**

Lakshmi and Krishnamurthy (2011) conducted study on the Emotional Maturity of higher secondary school students. This study reveals that the majority of Higher Secondary Students in Coimbatore District are in Emotionally Unstable condition. There exists significant difference between all the sub-samples except the age group of Higher Secondary Students. The findings of this study will be an eye opening to the researchers, curriculum practitioners and parents.

Mohamedayup and Mani (2012) conducted study on higher secondary students' personal problems, study involvement and academic achievement. Results were statistically analyzed through 't' test, and 'f' test. Gender has an impact on students' personal problems, study involvement and academic achievement. Students Personal Problems, Study Involvement and Academic Achievement are related to each other.

Subramanian and Veliappan (2013) conducted study on Emotional Maturity of high school students. The investigator found that the high school boys and private high school students are emotionally matured. Maharishi and Parameswari (2013) conducted study on influence of Emotional Intelligence on Study Involvement among Adolescents.

The results show that there is no significant difference between male and female on study involvement. The results show that private school students have more study involvement compared to the government school students

Maharishi and Parameswari (2013) conducted study on influence of Emotional Intelligence on Study Involvement among Adolescents. The results show that there is no significant difference between male and female on study involvement. The results show that private school students have more study involvement compared to the government school students. Kumar (2014) conducted study on Emotional Maturity of Adolescent students in relation to their family Relationship. The result revealed that there is a significant difference in emotional maturity of boys and girls adolescent. The result also reveals that there is a significant relation between emotional maturity and family relationship of adolescent students. This shows that family relationship determines emotional maturity of adolescent students.

Nath (2015) conducted study on Emotional Maturity of secondary school students in Dhemaji District of Assam. The finding of the study reported that there are real differences on emotional maturity in respect of government and private as well as rural and urban secondary school students. But it reported that there is no significant difference between male and female secondary school students of Dhemaji district.

Wani and Masih (2015) conducted study on Emotional Maturity across Gender and Level of Education. The findings of the study revealed that majority of the post graduate students and research scholars of the university are emotionally unstable. The findings also showed that male students are emotionally immature than females on personality disintegration dimension of emotional maturity. Significant difference was also found between post graduates and research scholars on personality disintegration dimension of emotional maturity. On other dimensions of emotional maturity no difference was found between males and females and post graduates and research scholars. University students must be taught to identify their level of emotional maturity, as they are at the highest seat of learning.

Dutta, Chetia and Soni (2015) conducted study on a comparative study on Emotional Maturity of secondary school students in Lakhimpur and Sonitpur districts of Assam. The finding of the study reported that there was not any significant difference in

various areas of emotional maturity of government and private school students; no significant difference in the emotional maturity level of boys and girls school students; and there is no significant difference between in the emotional maturity level of rural and urban secondary school students of both districts of Assam.

Divya, Jain, M and Pasrija, P (2015) Conducted study on Emotional Maturity and Self Concept among senior secondary school students. The findings revealed that significant difference was found in the Emotional Maturity and Self-Concept among students in relation to type of school. Kalaiselvan and Maheswari (2016) conducted study on Emotional Maturity among the Post Graduate Students. The major findings of the study revealed that 45.5 per cent of the respondents have moderate level of emotional maturity.

Brahmbhat (2016) conducted study on Emotional Maturity among higher secondary school students. The major findings of the study revealed that significant difference is existed between male and female students of higher secondary school on emotional maturity. Male students have found to be more Emotionally Mature than female students of higher secondary school. It also reveals that significant difference is existed between urban and rural students of higher secondary school on emotional maturity. Male urban students of higher secondary school have found to be more Emotionally Mature than remaining groups of students of higher secondary school

Kaur and Singh (2016) conducted study on Study of Self and Emotional Maturity of senior secondary school students. The findings of the study revealed that there exists significant difference between the self-esteem and emotional maturity of senior secondary school students. Further results revealed that there exists no significant difference between the self-esteem of male and female senior secondary school student and there exists significant difference between the emotional maturity of male and female senior secondary school students.

### **2.3.7 Emotional instability and emotional intelligence**

Mohammad Amin Wani and it all., (2016) Emotional instability among Annamalai university students. In addition, result indicates that the study revealed the no significant difference found between mean scores of emotional instability of boys and

girls. Sheema Aleem (2005) Emotional instability among college youth. Result shows that male students are found to be more emotional stable than female students.

Shaikh et al., (2016) found no significant difference between the levels of emotional instability among boys and girls. Zapata (2015) researched emotional instability and emotional maturity among students and found significant difference between levels of emotional instability and emotional maturity. Arora and Kaur (2014) investigated emotional instability among 200 adolescents in relation to parent child relationship. They found no significant relationship between protecting, loving, object reward and neglecting dimensions of parent child relationship and emotional instability.

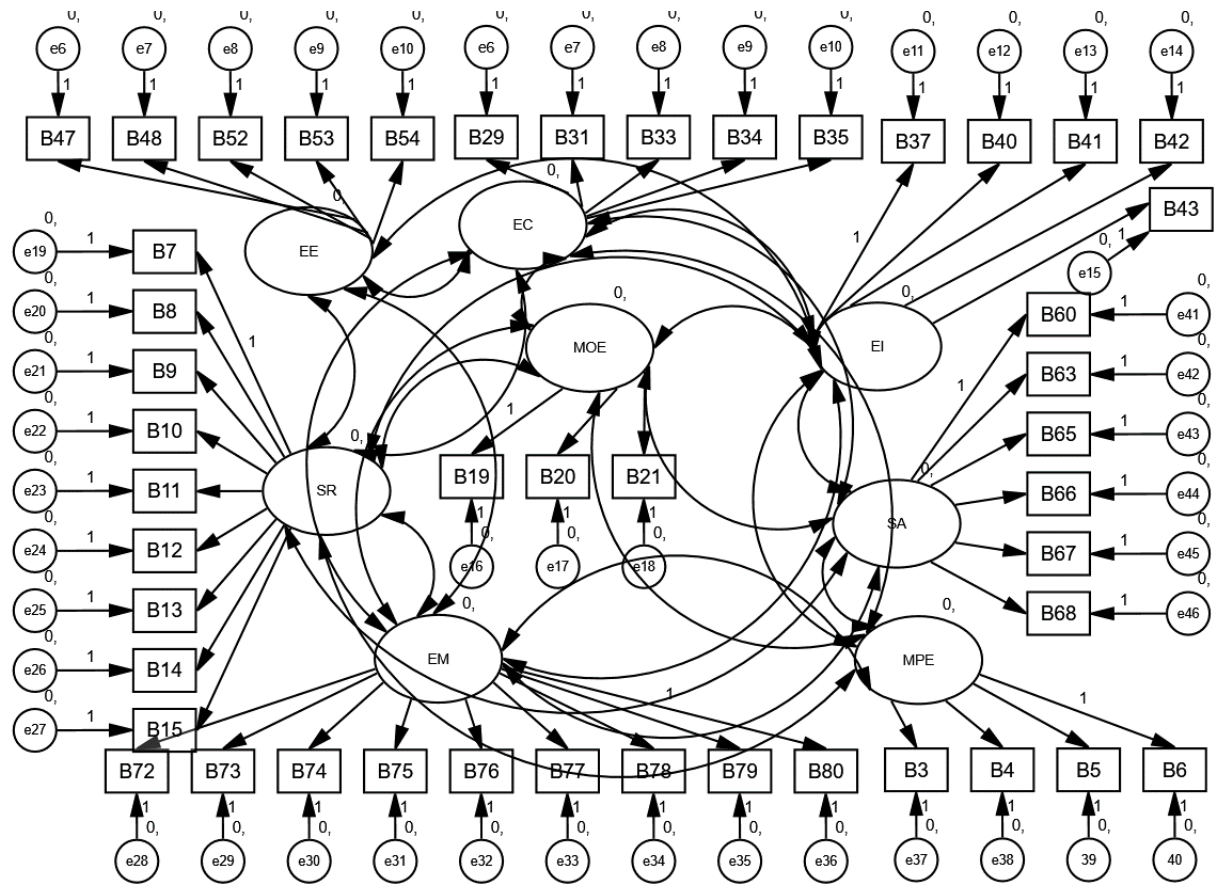
Jasoria et al., (2014) revealed that neglecting parent child relationship significantly negatively correlated with emotional instability of the child. Similarly emotional maturity showed negative correlation with indifferent parent child relationship and neglecting parent child relationship. Renu and Sharma (2014) investigate functioning of emotion and positive health among adults. They found significant relationship between the dimensions of positive health and dimensions of functioning of emotions.

Tarannum and Khatoon (2009) uncovered that gender emerged as the significant predictor of emotional instability. Sharma (2006) assessed the emotional instability among students with visually disabled in relation to study habits. Results revealed that children with high emotional instability have better study habits than their counterparts with low emotional instability. Aleem (2005) examined emotional instability among college youth. Findings show that male students are more emotionally stable than female students. Qureshi et al., (1998) revealed that significant differences were found between undergraduate and postgraduate students in respect to emotional instability.

Kaur (2013) conducted a comparative study of emotional maturity of senior secondary school students and investigated the emotional maturity of adolescents of Chandigarh. The findings of the study revealed that there was not any significant difference in various areas of emotional maturity of govt. and private school students. Bharati Roy and Smritikana Mitra (2012) made a study on the "Pattern of adjustment among early and late adolescent school students" examined the adjustment problems among early and late adolescent school students using Bell adjustment inventory adopted by Mohsin - Shamshad. The test was administered on a sample of sixty adolescents (30

early adolescents and 30 late adolescents). The study revealed that early and late adolescents group differed significantly from each other in the home, health and social areas of adjustment. Girls showed better adjustment than boys.

Basu (2012) aimed to investigate the adjustment abilities of secondary school students and found that there exist highly significant differences between the adjustment of secondary school students when compared on the basis of type of family. Aleem (2005) examines difference between the mean scores of male and female students on emotional instability and revealed that male students are found to be more emotionally stable than female students. Hay and Ashman (2003) investigated gender differences associated with the development of adolescents' sense of general self-concept and emotional instability were investigated with 655 adolescents. Relationships with parents were important for males' emotional instability, but not females. Peer relations were more influential in the formation of adolescents' emotional instability than parental relationships. Kasinath (2003) studied the male and female student's adjustment with academic achievement and found better social and emotional adjusted students had good academic scores.



**Figure 2.5: Hypothesised Conceptual Model**

**Keys:**

- Self-regulation = (SR),
- Managing personal emotion = (MPE),
- Managing other emotion = (MOE),
- Emotional creativity = (EC),
- Emotional innovation = (EI),
- Emotional entrepreneur = (EE)
- Self-Actualization = (SA)
- Emotional Maturity = (EM)

## **HYPOTHESISED CONCEPTUAL MODEL**

The conceptual model of this study comprises the independent variable and dependent variables (emotional intelligence, self-regulation, managing personal emotion, managing other emotion, emotional creativity, emotional innovation, emotional entrepreneurship, self-actualization and emotional maturity). The model shows the eight dimensions which are the latent variables that cannot be measured directly; self-regulation (SR), managing personal emotion (MPE), managing other emotion (MOE), emotional creativity (EC), emotional innovation (EI), emotional entrepreneur (EE), self-actualization (SA) and emotional maturity (EM) loading on the observed variables which are easily measured (items; SR1, SR2, SR3, SR4; MPE1, MPE2, MPE3, MPE4; MOE1, MOE2, MOE3, MOE4; EC1, EC2, EC3, EC4; EI1, EI2, EI3, EI4; EE1, EE2, EE3, EE4; SA1, SA2, SA3, SA4; EM1, EM2, EM3 and EM4). The model enable to show the covariance between the dimensions i.e. all the dimensions have connections. e1-e24 shows the error on each of the items i.e. the confirmatory factor model will enable the test developer to detect the error of each of the items in order to know where each of the items should be placed in the dimensions.

## **CHAPTER THREE**

### **METHODOLOGY**

The following chapter outlines the key aspects related to how this research was designed and conducted. The specific research design selected for the study is discussed. Then, the population under investigation is defined and sampling procedures are explained. The collection of data, including instruments (issues surrounding validity, reliability, and generalisability as well as the protection of participants are addressed) that was utilized and procedures that was followed, are also outlined. Finally, the method for data analysis is discussed.

#### **3.1 Research Design**

This study adopted the Multitrait-multimethod (MTMM) research design to achieve the development of an indigenous model of emotional intelligence scale. This design is appropriate because it is used in establishing construct validation as proposed by Campbell and Fiske in 1959. To apply MTMM designs, researchers assess multiple traits (i.e. Dimensions of Emotional Intelligence) for a group of individuals using multiple methods that are maximally different. A further justification of this design as advised by the scholars, was that the correlation coefficients among the multiple constructs produced are to be compared to evaluate convergent and discriminant validity. This design therefore enabled the researcher to explore development of an indigenous model of emotional intelligence scale among adolescents in southwestern Nigeria.

#### **3.2 Population of the Study**

The targeted population for this study comprises all adolescents who were between the ages of 10-16 in Southwestern Nigeria. The study used adolescents in that age range because most in-school adolescents who are senior secondary school students, can be easily reached, they can read, as well as understand the construct of emotional intelligence.



### **3.3 Research Setting**

This study was carried out among secondary school adolescents in the southwestern state, Nigeria. South west. Ondo, Osun, Oyo, Lagos, and Ogun are the six states that make up Nigeria's South-West geopolitical zone. There are eighteen (18) LGAs in Ondo State, thirty (30) in Osun State, thirty-three (33) in Oyo State, sixteen (16) in Ekiti State, twenty (20) in Lagos State, and twenty (20) in Ogun State, respectively. According to the 2006 population census, there are approximately 38 million people living in the region. It is mostly Yoruba-speaking, but even within the same state, there are other dialects.

### **3.4 Sample and Sampling Technique**

Multistage sampling procedure was used in selecting participants of this study because of the large population of adolescents in Southwestern Nigeria. The selection of a sample size of 1,440 used for this study, involved four stages. The samples were randomly sorted in this order of magnitude in four stages;

**Stage one:** Southwestern States (Oyo, Lagos, Ogun, Osun, Ondo and Ekiti states)

**Stage two:** 12 selected Local Government Areas

**Stage three:** 24 schools from the selected Local Government Areas in each state

**Stage four:** Participant (adolescents)

The first stage involved the total enumeration of all the six states in Southwestern Nigeria (Oyo State, Lagos State, Ogun State, Osun State, Ondo State and Ekiti State) which led to the second stage, the use of convenience sampling techniques in the selection of two local governments from each of the six Southwestern states, totaling 12 local government areas - Oyo State (Ibadan Southwest and Afijio), Lagos State (Somolu and Epe), Ogun State (Ado/Odo-Ota and Abeokuta South), Osun State (Ife Central and Ife East), Ondo State (Ondo West and Ondo East), as well as Ekiti State (Irepodun-Ifelodun and Ado-Ekiti). The third stage involved the use of simple random sampling in the selection of two schools from each of the selected Local Governments Areas, totaling 24 schools. At the final stage, simple randomly sampling was used in the selection of 60 participants from each of the 24 schools totaling 1,440.

The selected schools were:

1. St. Davids Grammar School, Lagere, Ile-Ife, Osun State.

2. St. Murumba Grammar School, Lagere, Ile-Ife, Osun State.
3. Ife City College, Ile-Ife, Osun State.
4. St. Philips Anglican Grammar School, Arubidi, Osun State.
5. Golden Anchor High School II, Kajola Street, Ladilak, Bariga, Lagos State.
6. Bright Future International College, 26, Bajulaye Road, Somolu, Lagos State.
7. Pobuna Senior Secondary Grammar School, Epe, Lagos State.
8. Odomola Senior Secondary School, Epe, Lagos State.
9. Ibadan Boys High School, Oke-Bola, Ibadan, Oyo State.
10. Oladipo Alayande School of Science, Oke-Bola, Ibadan, Oyo State.
11. Fiditi Grammar School, Fiditi, Oyo State.
12. Methodist Secondary School, Fiditi, Oyo State.
13. Olaoluwa Muslim Grammar School, Ado-Ekiti, Ekiti State.
14. Ikingbinsin/Olohunda Community High School, Ado-Ekiti, Ekiti State.
15. Ekiti Baptist High School, Igede-Ekiti, Ekiti State.
16. Eyemoye Comprehensive High School, Iyin-Ekiti, Ekiti State.
17. Asero High School, Abeokuta, Ogun State.
18. Egba Comprehensive High School, Asero, Abeokuta, Ogun State.
19. Sango High School, Sango-Ota, Ogun State.
20. AUD Comprehensive High School, Lafenwa, Abeokuta, Ogun State.
21. St. Joseph College, Ondo, Ondo State.
22. Temidire Community Grammar School, Igbo-Oja, Ondo, Ondo State.
23. Holy Trinity Grammar School, Ondo State.
24. St. Monica Girls Grammar School, Ondo State.

### **3.5 Research Instruments**

Data was collected through questionnaire which was used to collect information from respondents for the study. The questionnaires were designed using simple language so respondents (adolescents) could give responses to the survey questions with ease. The questionnaire was split into four (4) sections: which consists of Sections A to D. Section ‘A’ contained information on the bio-data/socio-demographic characteristics of

participants like gender, age, religion and ethnicity. Section 'B' contained information on indigenous emotional intelligence test by the researcher, section 'C' contained information on Schutte Emotional Intelligence for the determination of convergence validity and Section 'D' contained information on emotional instability test for the determination of divergence validity. The researcher tested for reliability of the scales through a pilot study conducted on 144 participants. The pilot study was carried out in Ibadan North Local Government Area of Oyo State, a local government not involved in the main study.

### **Emotional Intelligence Scale**

An emotional intelligence scale was developed by the researcher, as a method of measuring general Emotional Intelligence (EI), using eight sub-scales: self-regulation, managing one's emotion, managing others' emotion, emotional creativity, emotional innovation, emotional entrepreneurship, self-actualisation and emotional maturity. The emotional intelligence test included different self-report items using 5 likert format scale for responses: 1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 = agree and 5 = strongly agree. Each sub-test score was graded and then added to give participant's total score. Samples of the items were: *"I am clearly able to see how my feelings impact my performance and I believe I can persuade my classmates to agree on a plan"*.

### **Schutte Self-Report Emotional Intelligence Test (SSEIT)**

The Schutte Self-Report Emotional Intelligence Test (SSEIT) was developed by Schutte (1998), as a method of measuring general Emotional Intelligence (EI), using four sub-scales: emotion perception, utilising emotions, managing self-relevant emotions, and managing others' emotions. The SSEIT includes a 33-item self-report using a 1 (strongly agree) to 5 (strongly disagree) scale for responses; 1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 = agree and 5 = strongly agree. Each sub-test score was graded and then added to give participant's total score. Schutte and her colleagues reported a reliability rating of 0.90 for their emotional intelligence scale. Pilot study was

carried out using 144 respondents (adolescents) and a reliability coefficient (Cronbach alpha) of  $\alpha = .81$  reported.

### **Emotional instability Scale**

Emotional instability scale was developed by Caprara, and Pastorelli (1993). The emotional instability scale a method of measuring fluctuations in emotions among adolescents. The emotional instability includes different items self-report using 5 likert format scale for responses; 1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 = agree and 5 = strongly agree. Samples of the items are; I make trouble for others and I interrupt others while they are talking. The test developer reported a reliability coefficient of .77. Pilot study was carried out using 144 respondents (adolescents) and reports reliability coefficient (Cronbach alpha) of  $\alpha = .73$ .

## **3.6 Item generation**

### **Generation of Initial Pool of Items**

Eighty (80) items were initially generated using the deductive and inductive approach. The deductive approach also referred to as logical partitioning, is based on the description of the relevant domains and the identification of items of emotional intelligence scale (Boateng, 2018). This was informed through literature review and assessment of existing scales and indicators of emotional intelligence scale. The 80 initial items were generated following eight dimensions (managing personal emotion, self-regulation, managing others' emotion, emotional creativity, emotional innovation, self-actualisation and emotional maturity) of emotional intelligence scale with special interest in the mixed models of emotional intelligence viz-a-viz Nigeria perspective of the construct.

The inductive approach, also known as classification, involves the generation of items from the responses of individuals (Hinkin, 1995). This was achieved after the first administration of the emotional intelligence scale on 1440 respondents across Southwestern Nigeria. The 80 items were subjected to exploratory factor analysis using the Principal Axis Factoring (PAF) and Oblimin Rotation which loaded on 7 factors as

against the initial 8 factors generated through the deductive approach. 66 items survived the exploratory stage in identifying the dimensions of emotional intelligence scale.

### **Generation of Final Pool of Item**

The generation of the final pool of item was ascertained after the second phase of data collection on another set of 1,440 respondents across Southwestern Nigeria. This section involved internal and external convergent validity, confirmatory factor analysis using Analysis of Moment and Structure (AMOS Version 24) as well as reliability analysis which recorded the success of six (6) dimensions of emotional intelligence scale as well as 25 items surviving the confirmatory factor analysis model.

### **3.7 Procedures for Data Collection**

The researcher obtained an introduction letter from the Department of Counseling and Human Development Studies, University of Ibadan, which was submitted to selected schools. After permission had been granted by respective school authorities, the researcher administered the questionnaire in the selected schools among late adolescents aged 17-19 years with the help of research assistants (teachers and friends). Explanation was made to the participants during the administration.

Also, respondents were made to understand the importance of participating in the study as well as the essence of the research and the procedure of administration. The researcher assured them of confidentiality as the study, as he did not pry into their privacy and the results of the findings was only used for academic purposes. Copies of the questionnaires were distributed among participants (adolescents) and instructions given so as to how the questionnaires should be filled. After the copies of the questionnaires had been appropriately filled by the respondents, the researcher and assistants retrieved them from the respondents for analysis purposes.

### **Inclusion Criteria**

- i. The respondents were Senior Secondary school students 1 to 3
- ii. The respondents were adolescents
- iii. The respondents volunteered for the study.

**Confidentiality of Data**

This research instruments did not reflect details about respondent's identity, moreover, school authorities in selected schools had already been presented with the informed consent form, which established the commitment of the researcher to maintaining strict confidentiality of the data provided by respondents, as well as stating that data collected in the study shall only be used for analysis.

**Translation of Protocol to the Local Language**

In this study, due to the high level of communication of the respondents in English. Hence, the researcher did not translate the protocol to the local language.

**Beneficence to Participants**

The study was on the confirmatory factor model on emotional intelligence which included the development of emotional intelligence model that could help respondents possess the ability to understand their emotion and those of others. At the end of the study, participants, it can be safe to conclude, had acquired emotional intelligence skills and developed better understanding of their emotions.

**Voluntariness**

Respondents were not compelled to join the study (filling the questionnaire), therefore only those who volunteered of their own free will were involved.

### **3.8 Method of Data Analysis**

The data collected were analysed using descriptive statistics: frequency distribution, mean, standard deviation for the demographic data. Explanatory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) (using principal axis factor analysis) when conducted measuring emotional intelligence items to examine the factorial structure of constructs. Pearson's Product Moment Correlation was used to obtain inter-correlations of factors and for cross validation with the existing measure of emotional intelligence and reliability-cronbach alpha was used to check reliability.

### **3.9 Ethical Considerations**

The researcher obtained ethical approval from Faculty of Social Science, University of Ibadan and permission was also granted from each selected secondary schools in the six southwestern states, Nigeria. Consent was obtained from the respondent after explanation of the purpose and objective of the research.

## **CHAPTER FOUR**

### **RESULTS AND DISCUSSION**

This chapter presents the result of the research carried out on development of an indigenous model of emotional intelligence scale among adolescents in southwestern Nigeria. Seven research questions were formulated and tested for this study. The data were analyzed using the descriptive statistics of frequency counts, percentage to describe the demographic information of the respondents, while inferential statistics of multiple regressions Analysis, Factor Analysis, Exploratory factor analysis and person product moment correlation (PPMC) was used. The summary of data analysis was discussed under the sub-headings: socio-demographic characteristic of the respondents and analysis of research questions.

#### **4.1 Data analysis of Socio-demographic characteristic of the respondents**

The descriptive statistic adopted in analyzing the demographic variable was the simple percent (%)



**Table 4.1: Descriptive Analysis on Frequency Distrubtion on Demographic Chracteristics**

Demography	Frequency	Percentage %
<i>Gender</i>		
Male	655	45.5
Female	785	54.5
Total	1440	100
<i>Age</i>		
13-15 years	429	29.8
16 years and above	1011	70.2
Total	1440	100
<i>Religion</i>		
Christianity	780	54.2
Islam	660	45.8
Total	1440	100
<i>Ethnicity</i>		
Yoruba	1096	76.1
Igbo	327	22.7
Hausa	17	1.2
Total	1440	100
<i>Class</i>		
SS1	446	31.0
SS2	735	51.0
SS3	259	18.0
Total	1440	100

Out of 1440 respondents comprising of males and females responded to the questionnaire and a total of six hundred and fifty-five (655) males responded to the questionnaire which represents a total of 45.5% of the sample. A total of seven hundred and eighty-five (785) females responded to the questionnaire which represented 54.5% of the sample. This implies that females participated more in this study than their male counterparts. Also, a total of four hundred and twenty-nine (429) of 13-15 years responded to the questionnaire which represents a total of 29.8% of the sample. A total of one thousand and eleven (1011) of 16 years and above responded to the questionnaire which represented 70.2% of the sample. This implies that those within the ages of 16 years and above participated more in this study.

Furthermore, a total of one thousand and ninety six (1096) of Yoruba's responded to the questionnaire which represents a total of 76.1% of the sample. A total of three hundred and twenty seven (327) of Igbos responded to the questionnaire which represents a total of 22.7% of the sample and a total of seventeen (17) of Hausa's responded to the questionnaire which represents a total of 1.2% of the sample. This implies that Yoruba's participated more in this study.

Seven hundred and eighty (780) Muslim responded to the questionnaire which represents a total of 54.2% of the sample. A total of seven hundred and eighty (780) Christianity responded to the questionnaire which represented 45.8% of the sample. This implies that Muslim respondents participated more in the study. Lastly, a total of four hundred and forty-six (446) SS1 students responded to the questionnaire which represents a total of 31.0% of the sample.

A total of seven hundred thirty-five (735) SS2 students responded to the questionnaire which represents a total of 51.0% of the sample and a total of two hundred and fifty-nine (259) responded to the questionnaire which represents a total of 18.0% of the sample. This implies that SS2 students participated more in the study.

## **4.2 Data Analysis and Research Question**

**Research Question 1:** What are the characteristics of the emotional intelligence scale?

**Table 4.2: Descriptive Analysis and Item-Total Correlation Summary Showing the Relationship Between Each Item and the Item-Total.**

Item	mean± St.Dv	R	Item	mean± St.Dv	R	Item	mean± St.Dv	r
B3	3.25±1.39	.584**	B29	3.13±1.32	.605**	B65	3.34±1.44	.697**
B4	3.19±1.44	.660**	B30	3.09±1.28	--	B66	3.17±1.44	.644**
B5	3.79±1.35	.529**	B31	3.54±1.39	.571**	B67	3.17±1.41	.710**
B6	3.61±1.35	.533**	B32	3.14±1.33	--	B68	3.09±1.42	.675**
B7	3.68±1.31	.593**	B33	3.01±1.31	.537**			
B8	3.71±1.35	.548**	B34	3.46±1.35	.556**			
B9	3.68±1.29	.481**	B35	3.31±1.42	.651**			
B10	3.77±1.29	.499**	B37	3.50±1.41	.509**			
B11	3.42±1.35	.547**	B40	3.21±1.46	.600**			
B12	3.13±1.37	.662**	B41	3.24±1.47	.602**			
B13	3.10±1.38	.685**	B42	3.25±1.49	.607**			
B14	3.10±1.42	.670**	B43	3.46±1.46	.512**			
B15	3.37±1.39	.546**	B47	4.09±1.10	.342**			
B19	2.99±1.40	.507**	B48	4.01±1.19	.369**			
B20	3.02±1.44	.608**	B52	3.60±1.29	.342**			
B21	3.06±1.48	.619**	B53	3.58±1.38	.345**			
B24	2.99±1.34	.493**	B54	3.57±1.36	.348**			
B25	2.99±1.38	.543**	B55	3.80±1.34	.381**			
B26	3.07±1.45	.564**	B56	3.74±1.36	.357**			
B27	3.22±1.44	.649**	B60	3.22±1.47	.519**			
B28	2.99±1.32	.543**	B63	2.88±1.39	.496**			

Table 4.2 reveals that out of 80 items of the emotional intelligence scale, 66 items had correlation value above 0.3( $r > 0.3$ ). While 14 items (B30, B32, B69, B70, B71, B72, B73, B74, B75, B76, B77, B78, B79, B80) had r-values ranging between 0.342-0.710 and standard deviation ranging between 1.10-1.49. This implies that 14 items of the emotional intelligence scale are not suitable enough for the adolescents to represent the construct of the scale.

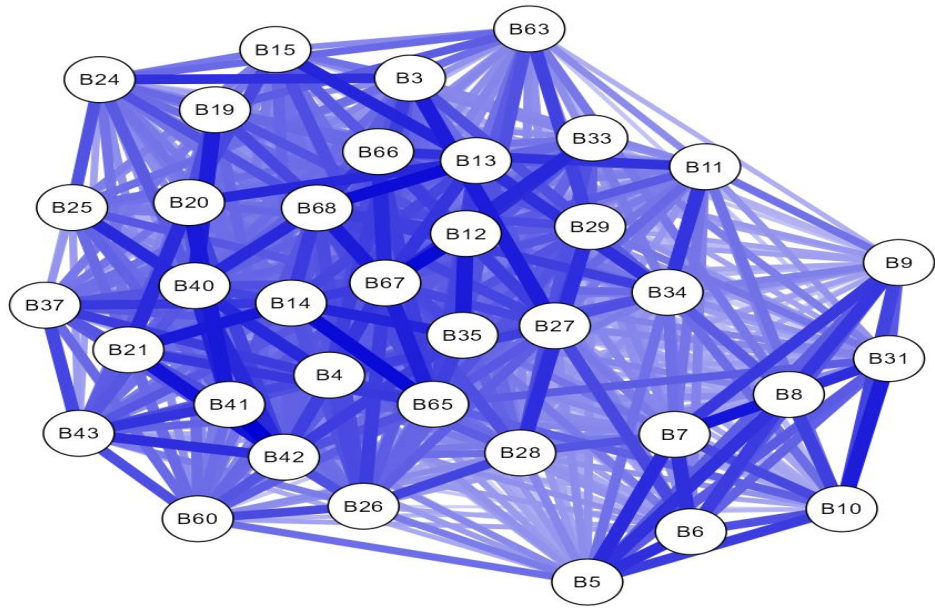


Fig. 4.1: Network Correlation Matrix

**Research Question 2: What are the indicative factors of emotional intelligence scale?**

To answer this question the assumption of sampling adequacy and test of sphericity must be confirmed, afterwards number of factors to be retained were suggested by parallel analysis and its scree plot while items to be retained were determined by Maximum Likelihood Estimate (MLE) using oblimin rotation.



**Table 4.3: Summary of Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.718
Bartlett's Test of Sphericity	Approx. Chi-Square Df Sig.
	1362.693 406 .000

Table 4.3: To certify the assumption of factorability Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity was conducted. Overall KMO=.718 and Bartlett's Test of Sphericity (Approx. Chi-Square (406) = 1362,  $p < .05$ ). This reveals that the sample size of adolescents was adequate enough KMO  $> .6$  (Field, 2000). Bartlett's Test of Sphericity was found significant. This implies that the proportion of the variance in the measures of emotional intelligence of adolescents is explained by the underlying factors (managing personal emotion, self-regulation, managing others emotion, emotional creativity, emotional innovation, self-actualization and emotional maturity) of the scale which implies an acceptable factorability potential.

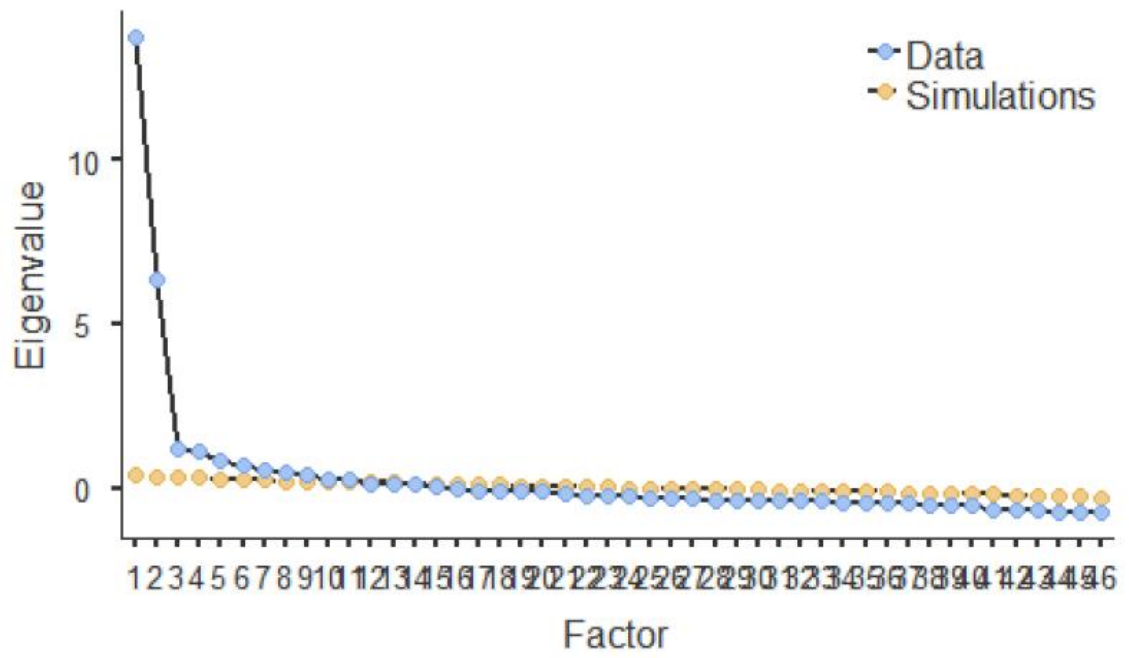


Figure 4.2: Bartlett's Test of Sphericity

Exploratory Factor Analysis (EFA) with oblimin rotation was conducted on all 66 items on emotional intelligence scale on the eight factors (managing personal emotion, self-regulation, managing others emotion, emotional creativity, emotional innovation, self-actualization and emotional maturity). Factor solutions were based on the following criteria: eight values of 4.0 (although eigenvalue 1.0 or greater), factor loadings of .40 or greater and rotated factor (Cattell, 1978; DeVellis, 2003). The majority of the items initially merged into 8 factors above the postulated factor structure. As a means to “clean up” the model, the parallel analysis scree plot test was conducted to determine the number of factors retained in the scale; results suggested that 7-factor models (managing personal emotion, self-regulation, managing others emotion, emotional creativity, emotional innovation, self-actualization and emotional maturity) were the most appropriate fit of the emotional intelligence scale for adolescents (DeVellis, 2003).

**Table 4.4: Showing the Total Variance Explained by the Factors Extracted**

<b>Factor</b>	<b>SS Loadings</b>	<b>% of Variance</b>	<b>Cumulative %</b>
1	6.11	13.28	13.3
2	4.06	8.83	22.1
3	4.04	8.78	30.9
4	3.88	8.43	39.3
5	3.89	8.45	47.8
6	2.70	5.88	53.6
7	1.64	3.56	57.2

**Keys:**

- Self-regulation = (SR),
- Managing personal emotion = (MPE),
- Managing other emotion = (MOE),
- Emotional creativity = (EC),
- Emotional innovation = (EI),
- Self-Actualization = (SA)
- Emotional Maturity = (EM)

Table 4.4 reveals that the factor analysis primarily loaded on eight (8) factors which is above the norm. The table reveals that only seven (7) factors producing the cleanest factor structure for the 66-item scale; the seven factor accounted for some percentage of variance respectively (13.28, 8.83, 8.78, 8.43, 8.45, 5.88 and 3.56) the factors combined accounted for 57.2% of the variance of the emotional intelligence scale for adolescents.

**Table 4.5: Showing the Structure of Factor Loading Via the Extraction**

	Factor							Uniqueness
	1	2	3	4	5	6	7	
<b>B77</b>	0.840							0.276
<b>B74</b>	0.835							0.268
<b>B75</b>	0.827							0.282
<b>B73</b>	0.815							0.247
<b>B76</b>	0.776							0.294
<b>B79</b>	0.757							0.296
<b>B78</b>	0.748							0.305
<b>B80</b>	0.728							0.250
<b>B72</b>	0.558							0.487
<b>B8</b>		0.692						0.368
<b>B7</b>		0.638						0.389
<b>B9</b>		0.593						0.535
<b>B5</b>		0.583						0.429
<b>B6</b>		0.561						0.510
<b>B10</b>		0.532						0.465
<b>B31</b>		0.472						0.386
<b>B41</b>			0.715					0.336
<b>B42</b>			0.685					0.340
<b>B43</b>			0.616					0.474
<b>B40</b>			0.528					0.408
<b>B20</b>			0.452					0.479
<b>B60</b>			0.448					0.556
<b>B37</b>			0.384					0.524
<b>B19</b>			0.337					0.563
<b>B24</b>				0.724				0.481
<b>B25</b>				0.593				0.544
<b>B3</b>				0.538				0.512

<b>B63</b>	0.528		0.589
<b>B4</b>	0.392		0.398
<b>B29</b>	0.382		0.468
<b>B27</b>	0.354		0.472
<b>B66</b>	0.306		0.513
<b>B14</b>		0.669	0.366
<b>B65</b>		0.654	0.325
<b>B21</b>		0.487	0.410
<b>B67</b>		0.446	0.351
<b>B33</b>		0.390	0.562
<b>B15</b>		0.309	0.625
<b>B34</b>			0.618
<b>B13</b>			0.544
<b>B11</b>			0.417
<b>B68</b>			0.414
<b>B12</b>			0.319
<b>B35</b>			0.458
<b>B26</b>			0.397
<b>B28</b>			0.491
			0.362
			0.506

**Note. 'Minimum residual' extraction method was used in combination with a 'oblimin' rotation**



Table 4.5: After Oblimin rotation 46 items loaded strongly above .4 (while 20 items were removed because they loaded below .4) on the seven (7) factors subscales (managing personal emotion, self-regulation, managing others emotion, emotional creativity, emotional innovation, self-actualization and emotional maturity) of emotional intelligence scale used for adolescents (certifying the rule of thumb). The communality reveals a range of common variance shared among the items of the scale, .247-.625 (from 24.7% to 62.5%). Therefore seven factors were retained out of the initial 8 factors, while, the number of items retained were 46 out of 66 items.

**Research Question 3:** Is there any significant relationship among all the components of the emotional intelligence scale as an evidence of internal convergence validity?

**Table 4.6: Zero Order Correlation Showing Relationship among the Factors of Emotional Intelligence Scale**

<b>Factors of Scales.</b>	<b>Mean</b>	<b>St.Dv</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
Managing personal motion	13.84	3.98	1.000						
Self-regulation	31.01	7.93	.725**	1.000					
Managing others emotion	9.07	3.51	.494**	.595**	1.000				
Emotional creativity	31.77	8.76	.778**	.803**	.617**	1.00			
Emotional innovation	16.65	5.78	.566**	.588**	.722**	.655**	1.00		
Self-actualization	18.88	6.20	.648**	.763**	.640**	.849**	.713**	1.00	
Emotional maturity	24.18	11.01	.372**	.382**	.121*	.211*	.220*	.189*	1.0

\*significant at 0.05 (2-tailed)

Table 4.6 reveals that the seven factors of emotional intelligence scale (managing personal emotion, self-regulation, managing others emotion, emotional creativity, emotional innovation, self-actualization and emotional maturity) was found to be significantly correlated with one another, recording r-values ranging between 0.121-0.849; this indicates that the factors converge within itself which is an evidence of internal convergence validity. This implies that factors such as; managing personal emotion, self-regulation, managing others emotion, emotional creativity, emotional innovation, self-actualization and emotional maturity are good measures of emotional intelligence among adolescents in Southwestern, Nigeria.

**Research Question 4:** Is there any significant relationship among the factors of emotional intelligence scale and Schutte emotional intelligence scale as an evidence of external convergence validity?

**Table 4.7: Zero Order Correlation Showing Relationship between the Factors of Emotional Scale and Schutte emotional intelligence scale**

<b>Fa.c.to.rs of Scales</b>	<b>Me.an</b>	<b>S.t.Dv</b>	Positive affect	Emotion others	H.appy emotion	Emotio own	Nonverbal emotion	Emotion manage ment
Managing personal motion	13.84	3.98	.541**	.688**	.563**	.558**	.610**	.559**
Self-regulation	31.01	7.93	.616**	.789**	.584**	.582**	.630**	.622**
Managing others emotion	9.07	3.51	.366**	.626**	.471**	.435**	.511**	.456**
Managing creativity	31.77	8.76	.497**	.790**	.586**	.556**	.642**	.657**
Managing innovation	16.65	5.78	.365**	.603**	.493**	.438**	.555**	.405**
Managing self-actualization	18.88	6.20	.463**	.823**	.624**	.565**	.634**	.587**
Managing maturity	24.18	11.01	.707**	.337**	.444**	.550**	.420**	.299**

\*significant at 0.05 (2-tailed).

Table 4.7 shows the significant relationship among the factors of emotional intelligence scale and Schutte emotional intelligence scale as an evidence of external convergence validity. The table reveals that there is relationship among the factors of emotional intelligence scale and Schutte emotional intelligence scale among adolescents in Southwestern, Nigeria recorded r-values ranging between 0.299- 0.390. This indicates that the factors of the newly developed emotional intelligence scale converged with Schutte emotional intelligence scale has an evidence of external convergence validity.

**Research Question 5:** Is there any significant relationship between emotional intelligence scale and emotional instability scale as an evidence of divergence validity?

**Table 4.8: PPMC Showing Relationship between Emotional Intelligence Scale and Emotional Instability Scale**

Variables	N	Mean	St.Dev	r	Df	Sig
Emotional instability	1429	55.31	14.019	-.381**	1427	<.05
Emotional intelligence	1429	145.60	35.495			

Table 4.8 shows a significant negative relationship between emotional instability and emotional intelligence;  $r(1429) = -.381, p < .05$  among adolescents in Southwestern, Nigeria. The weak  $r$ -value indicates (-.38) that emotional intelligence scale successfully diverged from emotional instability. Therefore, emotional intelligence scale satisfied the condition for divergent validity having recorded a weak correlation value against emotional instability.

**Research Question 6:** Will the six -factor model of Emotional Intelligence scale significantly gain a better fitness than the seven -factor model?

**Table 4.9: CFA Showing Goodness of Fit Indexes of the Three vs. Four factor model**

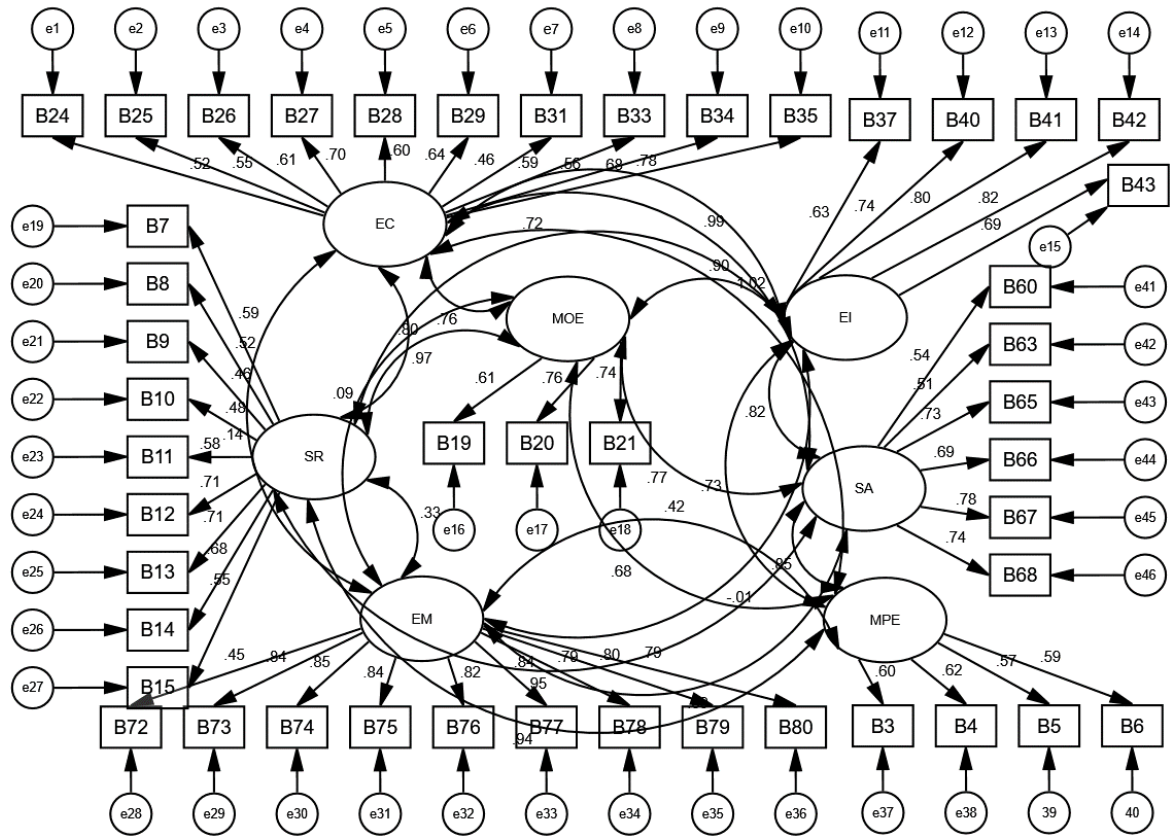
<b>Model</b>	<b>X<sup>2</sup></b>	<b>Df</b>	<b>P</b>	<b>NFI</b>	<b>CFI</b>	<b>RMSEA</b>
<b>Benchmark</b>	<b>&lt;3</b>		<b>p&gt;0.05</b>	>0.90	>0.90	<0.06
<b>Initial Model</b>	19.635	968	<.05	.623	.635	.114
<b>Adjusted model</b>	15.586	255	<.05	.922	.931	.101



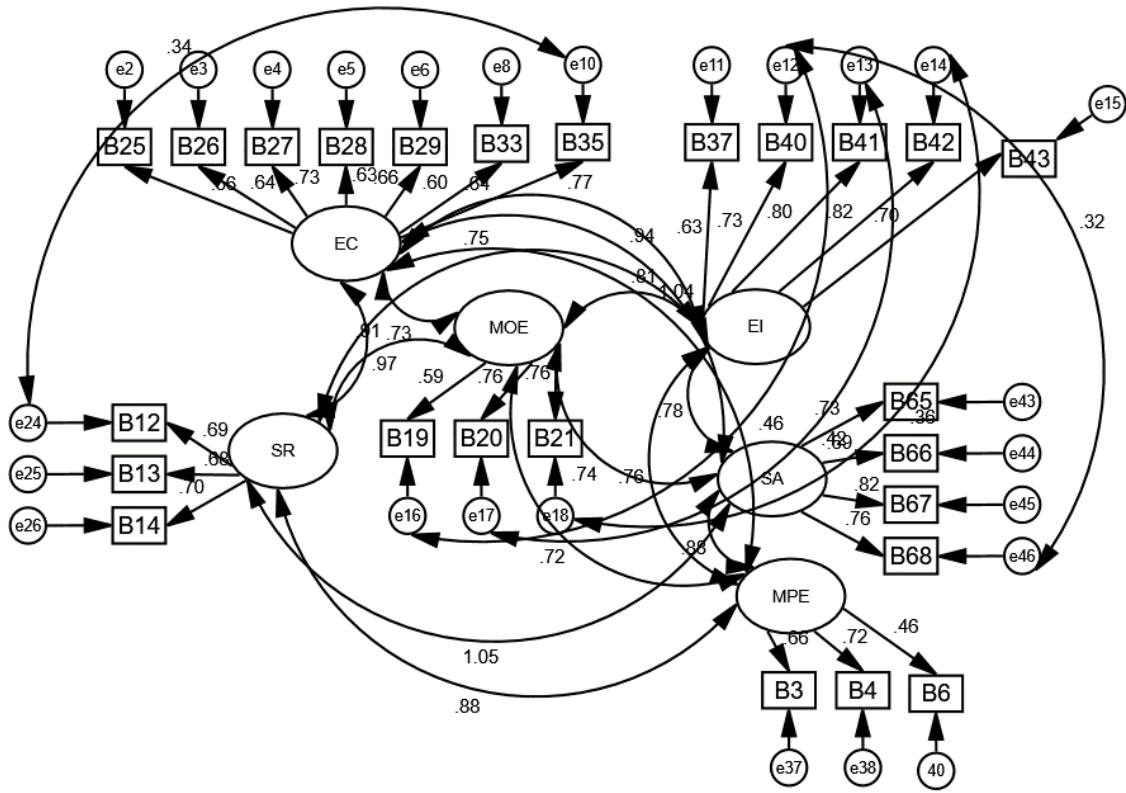
With respect to the criteria for a goodness of fit that says; Normed fit index (NFI): should range between 0 and 1, with a cutoff of .95 or greater indicating a good model fit. The comparative fit index (CFI): range from 0 to 1, with larger values indicating better fit; a CFI value of .90 or larger is generally considered to indicate acceptable model fit. The root mean square error of approximation (RMSEA). The RMSEA ranges from 0 to 1, with smaller values indicating better model fit. With a value of .06 or less is indicative of acceptable model fit of the emotional intelligence scale among adolescents in Southwestern, Nigeria.

From table 4.9 above seven (7) factor model recorded moderate fitness values;  $X^2(968) = 19.635$ ,  $p < .05$ . This indicates a moderate fit of the model. However with reference to the assumption that says chi-square goodness of fit is influenced by sample size; this gave rise to other model fit indexes among which are NFI, CFI and RMSEA considered in this study displayed a weak fit of the model.  $NFI = .623 < .95$  and  $CFI = .635 > .90$ , while  $RMSEA = .114 > .060$ .

However, six (6) factor model displayed a better fit index;  $X^2(255) = 15.586$ ,  $p < .05$ . Other model fit index displayed a good fit of the model.  $NFI = .922 > .90$  and  $CFI = .931 > .90$  but RMSEA recorded weak fit because,  $RMSEA = .101 > .060$ . From the result so far, a reasonable inference can be drawn that the six (6) factor adjusted model displayed a better fit than the seven (7) factor initial model ; meaning that the six factor emotional intelligence scale ((managing personal emotion, self-regulation, managing others emotion, emotional creativity, emotional innovation and self-actualization) adequately fit the data or truly represent the reality and serve as good measure for adolescents in Southwestern, Nigeria.



**Fig. 4. 3:** Initial Measurement Model of the Emotional Intelligence Scale.



**Fig. 4.4:** Adjusted Measurement Model of the Emotional Intelligence Scale.

**Research Question 7:** To What Extent will each of the Components of Emotional intelligence Scale Display Significant Satisfactory Reliability Coefficient?

**Table 4.10: Showing the Reliability Coefficient of Emotional Intelligence Scale**

	Factors of the scale	<b>Cronbach alpha</b>	<b>McDonald</b>
1	Managing personal motion	0.787	0.829
2	Self-regulation	0.832	0.834
3	Managing others emotion	0.740	0.749
4	Emotional creativity	0.839	0.842
5	Emotional innovation	0.852	0.854
6	Self-actualization	0.852	0.854
Total	Composite Emotional Intelligence reliability	0.882	0.876

\*Significant  $\geq .6$

Table 4.10 reveals that each dimensions of the emotional intelligence scale recorded a good reliability coefficient satisfying the criteria specified by Cohen (1988) and Field (2000) that says a good reliability coefficient should be 0.7 and above. These therefore indicate that, emotional intelligence scale is reliable enough to be used among adolescents in Southwestern, Nigeria, having recorded a composite reliability value of 0.882 and 0.876 using Conbach alpha and McDonald method respectively.

### **4.3 Discussion of findings**

Research question one shows the characteristics of the emotional intelligence scale. The result revealed that the developed scale consists of 80 items, out of eighty (80) items of the emotional intelligence scale, it was reported that 66 items had correlation above the standard value. While the remaining fourteen (14) items is below the standard value. This implies that 14 items of the emotional intelligence scale are not suitable enough to represent the construct of the scale. From the above result of the study, it indicated that not all the items are true characteristics, measures and representative of emotional intelligence. That is, 14 of the items are not reliable. Such items were removed since they were not the true measures of emotional intelligence. This is in line with the study of Kaur and Singh (2016) showed that the two dimensions of emotional intelligence to understand the emotions of the projected picture is generally positive and significant predictor of creativity are other words that others can better understand their sentiments and emotions, may higher than the creativity. Another finding by Rego, Sosa, Pynchon, saver, Correa, 2007; Moore, 2007; Salovey, Stroud, Woolery and Epel, (2002) was that the creativity is a significant negative predictor of emotional control. Luther, Cicchetti, and Becker, 2000; Aljosscha, Andreas and Roland, 2006; Reindel and Robert, 2006 and Batesteni, (2001) showed that overall emotional intelligence score predicted positive and significant creativity of people with higher emotional intelligence have more creative power, is to align. Also, David and Whitney (2012) noted that believed to be able to provide information about the role of emotional intelligence as one of mechanisms that can polish the internal competence of students.

Research question two indicate the indicative factors of emotional intelligence scale. The research question was tested using parallel analysis and its scree plot while items to be retained will be determined by Maximum Likelihood Estimate (MLE) using oblimin rotation to check the sampling adequacy and test of sphericity must be confirmed. the findings indicated that the sample size was adequate enough for the study. It also revealed that Bartlett's Test of Sphericity was found significant. This implies that the proportion of the variance in the measures of emotional intelligence is explained by the underlying factors of the scale which implies an acceptable factorability potential. Exploratory Factor Analysis (EFA) with oblimin rotation was conducted on all 66 items

on emotional intelligence scale on the eight factors (managing personal emotion, self-regulation, managing others emotion, emotional creativity, emotional innovation, self-actualization and emotional maturity). It revealed that the majority of the items initially merged into 10 factors above the postulated factor structure which lead to the conduction of parallel analysis scree plot test and noted that the 7-factor models were the most appropriate fit.

Only seven (7) factors produced the cleanest factor structure for the 66-item scale; the seven-factor accounted for some percentage of variance respectively. Forty (46) items loaded strongly above while 7 items were removed because they loaded below on the seven (7) factors subscales (managing personal emotion, self-regulation, managing others emotion, emotional creativity, emotional innovation, self-actualization and emotional maturity) of emotional intelligence scale (certifying the rule of thumb). Therefore, seven factors were retained out of the initial 8 factors, while, 46 were also retained out of 66 items. This is supported with the study of Bradberry (2015) who pointed to emotional intelligence as the critical factor that sets star performers apart from the rest of the pack. He noted factor model is suitable for emotional intelligence dimension. Adolescent differences in entrepreneurship may only be partially attributed to EI (Ahmetoglu, Leutner, and Chamon-Preuzic, 2011). Cross and Travaglione, (2005) support with the findings that EI is a prime factor in an entrepreneur's success. Also, Pajouhandeh (2013) noted that Kettle's 16 Factor Test and SA Inventory (SAI) had correlation coefficient depicted that there was a positive correlation between personality development. Moreover, a significant difference between these two groups was found. That is, those who belonged to the group, who had high self-actualization, did better on 16 Factor Test as well.

Research question three is on significant relationship among all the components of the emotional intelligence scale as an evidence of internal convergence validity. It reveals that the seven factors of emotional intelligence scale (managing personal emotion, self-regulation, managing others emotion, emotional creativity, emotional innovation, self-actualization and emotional maturity) was found to be significantly correlated with one another; this indicates that the factors converge within itself which is an evidence of internal convergence validity, except pro emotional intelligence skills.



That is; self-regulation, managing others emotion, emotional creativity, emotional innovation, self-actualization and emotional maturity had relationship to managing personal emotion; managing personal emotion, managing others emotion, emotional creativity, emotional innovation, self-actualization and emotional maturity had significant positive relationship to self-regulation; managing personal emotion, self-regulation, emotional creativity, emotional innovation, self-actualization and emotional maturity had significant positive relationship to managing others emotion; managing personal emotion, self-regulation, managing others emotion, emotional innovation, self-actualization and emotional maturity had significant positive relationship to emotional creativity; managing personal emotion, self-regulation, managing others emotion, emotional creativity, self-actualization and emotional maturity had significant positive relationship to emotional innovation; managing personal emotion, self-regulation, managing others emotion, emotional creativity, emotional innovation and emotional maturity had significant positive relationship to self-actualization; managing personal emotion, self-regulation, managing others emotion, emotional creativity, emotional innovation and self-actualization had significant positive relationship to emotional maturity.

The results also indicated that, managing personal emotion, self-regulation, managing others emotion, emotional creativity, emotional innovation, self-actualization and emotional maturity strongly correlated to each other. That, managing personal emotion, self-regulation, managing others emotion, emotional creativity, emotional innovation, self-actualization and emotional maturity are true measures of emotional intelligence. This is inline with the study of Tucker and Yost (2006) concluded that emotional intelligence is not the opposite of intelligence as measured by GPA. Amirtha and Kadiravan (2006) found that gender, age and qualification influenced the emotional intelligence of school teachers. Bharwaney (2008) finds in his study that emotional intelligence competencies can be developed in students. The result says that teachers play the central role in cultivating character by inculcating self-discipline and empathy. Kaur and Singh (2016) revealed that there exists significant difference between the emotional intelligence and emotional maturity of senior secondary school students. Maharishi and Parameswari (2013) results show that there is no significant difference between male and

female on study involvement. The results show that private school students have more study involvement compared to the government school students. Kumar (2014) revealed that there is a significant difference in emotional maturity of boys and girls adolescent. Ngah, Wahyukaton, Salleh, and Sarmidy (2016) noted that EI skills are important to entrepreneurs because of their need to manage social interactions with other adolescents. Ngah et al. (2016) found that being aware and understanding their emotions helps entrepreneurs channel positive or negative effects into appropriately identifying and solving problems relevant to their lives.

Research question four shows the significant relationship among the factors of emotional intelligence scale and Schutte emotional intelligence scale as an evidence of external convergence validity. The result reveals that there is significant relationship among the factors of emotional intelligence scale and Schutte emotional intelligence scale as an evidence of external convergence validity; this indicates that the factors converge within itself and that of Schutte emotional intelligence scale is an evidence of external convergence validity. This implies that the factor emotional intelligence scale (managing personal emotion, self-regulation, managing others emotion, emotional creativity, emotional innovation, self-actualization and emotional maturity) and Schutte emotional intelligence scale (Emotion others, Happy emotion, happy own, Nonverbal emotion and Emotion management) had significant relationship to one another. That is, each of the factors are measures of emotional intelligence. This is in line with the study of Batool and Khalid, 2011, participants who are involved in self-destructive behaviours are found to have lower emotional intelligence whereas those with higher emotional intelligence were involved in positive outcomes like prosocial behaviour, parental warmth with good peer and family relations. Orhan and Dinçer (2012) reported that there was a significant relationship between emotional intelligence and emotional innovation. In addition to that, there was a significant difference between private and governmental banks in terms of emotional intelligence and emotional innovation. Iran, Rezaeiyan and Koshtegar (2009) reported that the emotional intelligence had significant relationship with organizational commitment of employees. Among the dimensions of emotional intelligence, the relation management had the maximum effect on organizational commitment. Dutta, Chetia and Soni (2015) reported that there was not any significant difference in various areas of

emotional intelligence of school students; no significant difference in the emotional intelligence.

Research question five shows the significant relationship between emotional intelligence scale and emotional instability scale as an evidence of divergence validity. There is significant negative relationship between emotional instability and emotional intelligence. This indicates that emotional intelligence scale successfully diverged from emotional instability. Therefore, emotional intelligence scale satisfied the condition for divergent validity having recorded a weak correlation value with emotional instability. Also, emotional intelligence scale does not have significant relationship to emotional instability. This is supported by the study of Perry and Ball (2007) found that compared to students with low EI, students with high EI respond very differently to situations that involve negative emotions and stability. Nizielski et al., (2012) has established that students EI is not related to student emotional behavior. Silvers et al. (2012) show a significant change in self-regulation and emotional intelligence (emotional instability) which helps the young people to acquire the regulation strategies to be used in their adult life. It goes in line with Johar et al. (2013) who revealed the positive effect brought by the emotional self-regulation of the leader on their subordinates' motivation and work performance. It goes in line with Duygulu and Kublay (2011) suggesting that training programme should be transformational in terms of leadership. It also agrees with the findings of Conte et al. (2013) who emphasised the effectiveness of the use of simulations in different contexts. It boosted the practice of using train-the-trainer programmes in the second cycle of education (Ritchie, 2016). It contributed to the investigation of the problem of development of the emotional instability in young people (Pedditzi and Spigno, 2019; Quiroz et al., 2020).

Research question six shows the four-factor model of Emotional Intelligence scale significantly gain a better fitness than the three-factor model. It revealed that the three factor model displayed an appealing fit value. This indicates a good fitness of the model. But base on the assumption that says chi-square goodness of fit is influenced by sample size; this gave rise to other model fit index which among others is considered in this study displayed a good fit of the model. While six factor model displayed a better fit index. Other model fit index displayed a good fit of the model. From the finding so far

reasonable inference can be drawn that the four factor model displayed a better fit; meaning that all the factors are good representative of the model. This is in line with the study of Brackett and Mayer, (2003, emotional intelligence influences adolescent academic performance and such adolescents in this group are said to be more of extrovert, sociable, friendly, easy going and talkative than introvert. However, in a rather negative form, people with low emotional intelligence tend to find it difficult to transit from high school to university, even those that eventually transit become very lonely, reclusive, some drop out of school, while others just get by. Awosola, and Omole (2010) concluded that “an adolescent’s emotional intelligence is an indicator of how he or she perceives, understands and regulates emotions”. Mumford et al (2002) considered the innovative behavior as presentation and examined some novel ideas including regulation processes and problem analysis, discovery of ideas, development and combination of ideas and their testing in theoretical terms and finally the study of their benefit.

Research question seven shows the extent of each of the Components of Emotional intelligence Scale Display Significant Satisfactory Reliability Coefficient. It reveals that each dimensions of the emotional intelligence scale (managing personal emotion, self-regulation, managing others emotion, emotional creativity, emotional innovation and self-actualization) recorded a good reliability coefficient. These therefore indicate that, emotional intelligence scale (managing personal emotion, self-regulation, managing others emotion, emotional creativity, emotional innovation and self-actualization) is reliable enough to be used, having recorded a high composite reliability value using Conbach alpha and McDonald method respectively. This is supported by the study of Zeinivand (2009) studied the relationship between emotional intelligence and the performance of middle class teachers and reported that there was a significant relationship among the self-management components, social-awareness and relation management as well as the teachers’ performance. Harris and Gibson (2008) argued that both the level of entrepreneurial attitude and emotional intelligence; could be increased by undergoing an entrepreneurship education and training programmes. Anderson and Jack (2008) stated that entrepreneurship education programmes could influence the students’ entrepreneurial attitudes by enhancing their awareness towards entrepreneurship as an alternative career choice and by encouraging favourable attitudes toward

entrepreneurship. Boren (2010) explained the essentials of EI, however, an essential element of the entrepreneurial experience is client management and retention.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

This chapter contains summary, conclusion, implications of the study, contributions to knowledge and recommendations, as well as limitations of the study and suggestions for further studies on development of an indigenous model of emotional intelligence scale among adolescents in southwestern Nigeria.

#### **5.1 Summary**

This study was on development of an indigenous model of emotional intelligence scale among adolescents in southwestern Nigeria, which enabled the understanding of the importance of emotional intelligence as a personality attribute to the individual and their interactions with others, especially since it is widely acknowledged that a large number of people possess very low emotional intelligence, adolescents inclusive.

Adolescents with low emotional intelligence have the tendency to behave poorly, commit deviations and violation to themselves which includes frustration, conflicting irregularities and exacerbating mental health. In addition, adolescents who are low in emotional intelligence are likely to develop low self-esteem, experience high peer influence in life activities, as well as perform poorly in academics. The research was presented in five chapters focusing on general introduction, background to the study, statement of the problem, purpose of the study, research questions, significance of the study, scope of the study and finally the operational definitions of terms as used in the study. Seven research hypotheses were formulated for the study.

More so, this study reviewed conceptual background and empirical findings. The methodology related to the method used in carrying out the research, entailing the instruments and techniques used in the process of conducting the research. This included research design, population of the study, sample and sampling techniques, validation, reliability and administration of instruments and method of data analysis.

Chapter four shows the result and discussion of findings and revealed that out of 80 items on the emotional intelligence scale, 66 items correlated above the standard value, the seven factor of emotional intelligence (managing personal emotion, self-regulation, managing others' emotion, emotional creativity, emotional innovation, self-actualisation and emotional maturity) were considered, the seven factors of emotional intelligence scale (managing personal emotion, self-regulation, managing others' emotion, emotional creativity, emotional innovation, self-actualisation and emotional maturity) were found to be significantly correlated with one another, there was significant relationship among the factors of emotional intelligence scale and Schutte emotional intelligence scale as an evidence of external convergence validity, there was significant negative relationship between emotional instability and emotional intelligence, three factor model displayed an appealing fit value and emotional intelligence scale (managing personal emotion, self-regulation, managing others' emotion, emotional creativity, emotional innovation and self-actualisation) recorded a good reliability coefficient.

The last chapter presented summary, conclusion, implications of the study, contributions to knowledge and recommendations as well as limitations of the study and suggestions for further studies on development of an indigenous model of emotional intelligence scale among adolescents in southwestern Nigeria.

## **5.2 Conclusion**

The main purpose of this study was to develop of an indigenous model of emotional intelligence scale among adolescents in southwestern Nigeria. In line with the findings, this research work established that not all the items raised by test developers have true characteristics, measures and are in fact, representative of emotional intelligence. Such items were removed since they were not the true measures of emotional intelligence. Also, seven factors of emotional intelligence scale (managing personal emotion, self-regulation, managing others' emotion, emotional creativity, emotional innovation, self-actualisation and emotional maturity) was found to be significantly correlated with one another; indicating that the factors converged within itself, which is an evidence of internal convergence validity. Having affirmed the importance of emotional intelligence,

it also noted that emotional intelligence scale and Schutte emotional intelligence scale provided evidence of external convergence validity.

Due to the convergence validity of this study, emotional instability had significant negative relationship to emotional intelligence, implying that being emotionally stable does not imply having emotional intelligence and each dimensions of the emotional intelligence scale (managing personal emotion, self-regulation, managing others' emotion, emotional creativity, emotional innovation and self-actualisation) recorded a good reliability coefficient.

### **5.3 Implications of the Study**

Based on the findings of this study, there are several implications on the theory and practice of counselling, especially in secondary schools, students, parents and other stakeholders. The following are the impactions of the study:

- Negative Emotions: Adolescents effortlessly feel overwhelmed and controlled by a wide range of negative emotions, including anger, worry, shame, disappointment, fear and guilt.
- Negative Perceptions: Those who experience negative emotions often have negative perceptions. They might feel weak, under-appreciated and/or powerless.
- Behavioral Issues: Adolescents become incapable of keeping negative emotions in check, which results in behavioral issues such as uncontrolled outbursts and rash split-second reactions.
- Poor Communication: Effective communication doesn't exist. Adolescents with low EI are usually too closed off and self-centered to understand others or appreciate suggestions. They have difficulty expressing themselves. Low EI often results in misunderstandings.
- Reduced Proactivity: Adolescents became less proactive when dealing with emotions, decisions and/or productivity. Reduced proactivity can lead to weak direction when communicating about projects and tasks.
- Lower Performance – It also have implication on individual poor performance.



- Weak Confidence – Adolescents become less confident and trusting. They start questioning their own abilities, motivations, etc. They also lose their faith in others.

#### **5.4 Limitations**

The study was only limited to adolescents in Southwestern (Oyo state, Lagos state, Ogun state, Osun state, Ondo state and Ekiti state) Nigeria considering two local governments from each state, while local governments in other states in Nigeria were left out. Also, the present study was considered using dimensions such as managing personal emotion, self-regulation, managing others' emotions, emotional creativity, emotional innovation, self-actualisation and emotional maturity; whereas there are other dimensions of emotional intelligence that were not considered in the study. This study was also limited in terms of methodology, as there are other types of methodology which could have been used.

Notwithstanding these limitations, the results, implications and recommendations of this research remain valid for the confirmatory factor model of emotional intelligence test among adolescents in Southwestern Nigeria.

#### **5.5 Recommendations**

The following recommendations were made based on the findings of the study:

1. The developed emotional intelligence scale should be adopted by the Counselling Psychologist and others bodies to identify people's feelings as well as how to appreciate their emotions.
2. The developed emotional intelligence test should be adopted by researchers in the field of Counselling Psychology, Psychology and even Psychiatry, in measuring the emotional intelligence of Nigerian adolescents.
3. Emotional intelligence as a topic should be added to the curriculum from secondary school to tertiary institutions (Colleges, Polytechnics and Universities).
4. Parents should be aware of different parenting styles that can be used to develop their children's emotional intelligence and its importance to their lives.

5. Mass media should now pay attention to this issue by providing information about the importance of emotional intelligence through TV programs, radio, movies, and TV series.
6. Students should learn emotional intelligence techniques which will help in staying aware of mind-body connection to overcome stress and stay connected to others to release difficult emotions like anger, fear or sadness, as well as giving themselves permission to take a break.
7. Counsellors should help students by organising seminars on how to pay attention to students' behaviours, as this could lead to high emotional intelligence.
8. Students should be taught to understand varieties of emotions and work on strategies to control their emotions.

#### **5.6 Contributions to Knowledge**

Based on this study, the following contributions were made:

- Emotional intelligence scale for indigenous developed
- New six dimensions are introduced to the emotional intelligence construct
- The development of an indigenous emotional intelligence scale with seven empirically-backed dimensions.
- A worthwhile addition to existing literature on emotional intelligence, especially with regards to the seven dimensions.
- An aid to participating adolescents in their building of stronger relationships, as well as help them to succeed at school, and achieve career and personal goals.
- This study also helped adolescents connect with their feelings, turn intention into action, and make informed decisions.
- Adolescents in Southwestern Nigeria can now better reduce procrastination and improve their self-confidence.
- The dimensions of emotional intelligence as used in this study, are strong enough to imbue adolescents with enhanced leadership skills, now and in the future.

### **5.7 Suggestions for further Study**

Based on the findings of this study, further studies can be undertaken on development of an indigenous model of emotional intelligence scale among adolescents in which this present study contributes into. This study was limited to adolescents in Southwestern (Oyo state, Lagos state, Ogun state, Osun state, Ondo state and Ekiti state) Nigeria considering two local governments from each state. It is hereby suggested that researches should be carried out across other local governments, states and Nigeria as a whole for the expansion and generation of more findings.

Also, other studies can be conducted to provide useful insight on how to increase emotional intelligence. More samples should be used so that the result would be a true representation of the populace and also further researchers should look into other dimensions of emotional intelligence and other methodologies should be considered.

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**APPENDICES A  
VALID SCALE**

<b>S/N</b>	<b>ITEMS</b>	<b>SA</b>	<b>A</b>	<b>U</b>	<b>D</b>	<b>SD</b>
	<b>Managing personal emotions</b>					
1.	I easily recognize my emotions					
2.	I am able to identify my feelings					
3.	I am aware of my strengths and weaknesses					
	<b>Self-regulation</b>					
4.	When I am in a positive mood, I am able to come up with new ideas					
5.	When I feel a change in emotions, I tend to come up with new ideas					
6.	I use good moods to help myself keep trying in the face of obstacles					
	<b>Managing others' emotions</b>					
7.	It is difficult for me to understand why people feel the way they do					
8.	I arrange events others enjoy					
9.	I help other people feel better when they are down					
	<b>Emotional Creativity</b>					
10.	I always thinks divergently					
11.	I do not think imaginatively					
12.	I always combine two or more ideas to develop something new					
13.	I hardly produce ideas that are original					
14.	I am very innovative					
15.	I do not add details to a basic idea produced					
16.	I persists on a task until I finds a solution to it					
	<b>Emotional Innovation</b>					

17.	I manage my emotions to raise solutions in solving problems					
18.	I have good mechanisms for using technology					
19.	It changes in appearance and packaging on how I do things					
20.	I look for new ways to develop myself					
21.	I improve on my manner of relationships to others					
	<b>Self-actualization</b>					
22.	I have a purpose in life that will help the good of humankind.					
23.	I often have a clear perception of reality.					
24.	I am always trying to get at the real truth about people and nature.					
25.	I try to get as close as I can to the reality of the world.					

**UNIVERSITY OF IBADAN**  
**FACULTY OF EDUCATION**  
**DEPARTMENT OF COUNSELLING AND HUMAN DEVELOPMENT STUDIES**

Dear Respondent,

This questionnaire is designed basically for a research purpose. It is designed to elicit relevant information on Confirmatory Factor Model of Emotional Intelligence Test among Adolescent in Southwestern, Nigeria. All information provided would be solely used for academic purpose and would be treated with confidentiality.

**SECTION A: DEMOGRAPHIC INFORMATION**

**Gender:** Male [    ]    Female: [    ]

**Age:** [    ]

**Ethnicity:** a. Yoruba (    )    b. Igbo (    ) c. Hausa (    )

**Religion:** a. Islam [    ] b. Christian [    ]

**Class:** \_\_\_\_\_

**SECTION B: EMOTIONAL INTELLIGENCE SCALE**

Note SA = Strongly Agree, A = Agree, U= Undecided, D = Disagree, SD = Strongly Disagree

S/N	ITEMS	SA	A	U	D	SD
	<b>Managing personal emotions</b>					
26.	I am aware of my emotions					
27.	I know why my emotions change					
28.	I easily recognize my emotions					
29.	I am able to identify my feelings					
30.	I am able to see how my feelings impact my performance					
31.	I am aware of my strengths and weaknesses					
	<b>Self-regulation</b>					
32.	I have learned a lot about myself through my feeling and emotions					
33.	I seek out activities that make me happy					

34.	I have control over my emotions					
35.	When my mood changes, I see new possibilities					
36.	When I am in a positive mood, solving problems is easy for me					
37.	When I am in a positive mood, I am able to come up with new ideas					
38.	When I feel a change in emotions, I tend to come up with new ideas					
39.	I use good moods to help myself keep trying in the face of obstacles					
40.	I have full confidence in myself and in my decisions					
	<b>Managing others' emotions</b>					
41.	I can tell how people are feeling by listening to the tone of their voice					
42.	By looking at their facial expressions, I recognize the emotions people are experiencing					
43.	I know what other people are feeling just by looking at them					
44.	It is difficult for me to understand why people feel the way they do					
45.	I arrange events others enjoy					
46.	I help other people feel better when they are down					
47.	I take initiative to meet people in social situation					
	<b>Emotional Creativity</b>					
48.	I always identifies gaps in an existing phenomena					
49.	I have ability to manage people wisely in human relations					
50.	I always thinks divergently					
51.	I do not think imaginatively					



52.	I always combine two or more ideas to develop something new					
53.	I hardly produce ideas that are original					
54.	I am very innovative					
55.	I produces ideas that are unusual					
56.	I always perceive a thing from different perspectives to bring a new solution					
57.	I often make mental leaps that makes possible for the production of original ideas					
58.	I do not add details to a basic idea produced					
59.	I often thinks beyond the existing structure					
60.	I persists on a task until I finds a solution to it					
	<b>Emotional Innovation</b>					
61.	I am happy when thinking of new thing					
62.	I manage my emotions to raise solutions in solving problems					
63.	I emotionally adjust to new things					
64.	I adopt innovative thinking					
65.	I have good mechanisms for using technology					
66.	It changes in appearance and packaging on how I do things					
67.	I look for new ways to develop myself					
68.	I improve on my manner of relationships to others					
69.	I always suggest taking initiatives in creating new ideas					
	<b>Emotional Entrepreneurship</b>					
70.	I believe I can persuade my classmates to agree on a plan					
71.	I am good at motivating my class mates					
72.	I am good at getting people to work well together					

73.	It feels good when a school project works out well					
74.	It does not matter if my project work is no good					
75.	I will keep trying out different solutions to a problem rather than give up					
76.	I like lessons that really stretch my imagination					
77.	I believe a good imagination helps me to do well at school					
78.	Making mistakes is a good way of finding out how to solve a problem					
79.	If I do not know the answer to a problem then I will have a guess.					
80.	I have a lot of faith in my own ability to succeed in my future career					
81.	It is important to finish off a project as well as I can					
	<b>Self-actualization</b>					
82.	I accept all sides of myself, including my shortcomings.					
83.	I accept all of my desires without shame or apology.					
84.	I have unconditional acceptance for people.					
85.	I can maintain my dignity and integrity even in environments and situations that are undignified.					
86.	I take responsibility for my actions.					
87.	I am often undisturbed and unruffled by things that seem to bother most people.					
88.	I am relatively stable in the face of hard knocks, blows, deprivations, and frustrations.					
89.	I feel as though I have some important task to fulfill in this lifetime.					
90.	I have a purpose in life that will help the good of humankind.					

91.	I often have a clear perception of reality.					
92.	I am always trying to get at the real truth about people and nature.					
93.	I try to get as close as I can to the reality of the world.					
	<b>Emotional Maturity</b>					
94.	I feel that I am very stubborn.					
95.	I feel jealous of other people.					
96.	I get wild due to anger.					
97.	I get lost in imagination and day dream.					
98.	If I fail to achieve my goal, I feel inferior.					
99.	I experience a sense of discomfort and lack of peace in mind.					
100.	I teasing against the others.					
101.	I try to put the blame on others for my lapses.					
102.	I feel that I am self-centered.					
103.	I do not hate others.					
104.	I praise myself.					
105.	I love to join social gatherings.					

**SECTION C: EMOTIONAL INTELLIGENCE SCALE**

**Note SA = Strongly Agree, A = Agree, N= Neither disagree nor agree, D = Disagree,  
SD = Strongly Disagree**

<b>ITEMS</b>	<b>SA</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>
1. I know when to speak about my personal problems to others					
2. When I am faced with obstacles, I remember times I faced similar obstacles and overcame them					
3. I expect that I will do well on most things I try					
4. Other people find it easy to confide in me					
5. I find it hard to understand the non-verbal messages of other people*					
6. Some of the major events of my life have led me to re-evaluate what is important and not important					
7. When my mood changes, I see new possibilities					
8. Emotions are one of the things that make my life worth living					
9. I am aware of my emotions as I experience them					
10. I expect good things to happen					
11. I like to share my emotions with others					
12. When I experience a positive emotion, I know how to make it last					
13. I arrange events others enjoy					
14. I seek out activities that make me happy					
15. I am aware of the non-verbal messages I send to others					
16. I present myself in a way that makes a good impression on others					
17. When I am in a positive mood, solving problems is easy for me					
18. By looking at their facial expressions, I recognize the emotions people are experiencing					
19. I know why my emotions change					


20. When I am in a positive mood, I am able to come up with new ideas					
21. I have control over my emotions					
22. I easily recognize my emotions as I experience them					
23. I motivate myself by imagining a good outcome to tasks I take on					
24. I compliment others when they have done something well					
25. I am aware of the non-verbal messages other people send					
26. When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself					
27. When I feel a change in emotions, I tend to come up with new ideas					
28. When I am faced with a challenge, I give up because I believe I will fail*					
29. I know what other people are feeling just by looking at them					
30. I help other people feel better when they are down					
31. I use good moods to help myself keep trying in the face of obstacles					
32. I can tell how people are feeling by listening to the tone of their voice					
33. It is difficult for me to understand why people feel the way they do*					

**SECTION D: EMOTIONAL INSTABILITY SCALE**

**Note SA = Strongly Agree, A = Agree, U= Undecided, D = Disagree, SD = Strongly Disagree**

<b>S/N</b>	<b>ITEMS</b>	<b>SA</b>	<b>A</b>	<b>U</b>	<b>D</b>	<b>SD</b>
1	I am impatient					
2	I make trouble for others					
3	I get along well with others					
4	I shout					
5	I interrupt others while they are talking					
6	I play loud games					
7	I play with matches or fire					
8	I am funny					
9	I bother others					
10	I have bad moods					
11	I am impolite					
12	I feel happy					
13	I do not respect others					
14	I cry I make new friends easily					
15	It's hard for me to stay still					
16	At school I talk when I shouldn't					
17	I do well in school					
18	I get mad					
19	I play dangerous games					

## APPENDICES B

 **Social Science and Humanities Research Ethics Committee (SSHREC)**  
**University of Ibadan**

*Chairman*  
**Prof. Jegede Ayodele Samuel**  
*B.Sc., M.Sc. (Ife) MHSoc (Toronto), Ph.D. (Ibadan)*

*Email: sshrecuisoc@gmail.com*  
*Mobile: +234-080-5725-0326*

**NOTICE OF FULL APPROVAL AFTER FULL COMMITTEE REVIEW**

**Re:** Confirmatory Factor Model of Emotional Intelligence Test among Adolescents in Southwestern, Nigeria

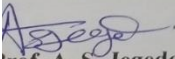
UI/Social Sciences Ethics committee assigned number: **UI/SSHREC/2021/0027**  
Name of Principal Investigator (Ibadan): **Ojuolape Mumud Olabode**  
Address of Principal Investigator: Department of Guidance and Counselling  
Faculty of Education

Date of receipt of valid application: 10/08/2021  
Date of meeting when determination on ethical approval was made: 15/11/2021

This is to inform you that the research described in the submitted protocol, the consent forms, and other participant information materials have been reviewed and given full approval by the SSHREC Committee.

The approval dates from **15/11/2021 to 14/11/2022**. If there is delay in starting the research, please inform the SSHRE Committee so that dates of approval can be adjusted accordingly. Note that no participant accrual or activity related to this research may be conducted outside of these dates. All informed consent forms used in this study must carry the SSHRE Committee assigned number and duration of SSHRE Committee approval of the study. It is expected that you submit your annual request for the project renewal to the SSHRE Committee early in order to obtain renewal of your approval to avoid disruption of your research.

*Note: The National code for research ethics requires you to comply with all institutional guidelines, rules and regulations and with the tenets of the Code including ensuring that all adverse events are reported promptly to the SSHREC. No changes are permitted in the research without prior approval by the SSHREC except in circumstances outlined in the Code. The SSHRE reserves the right to conduct compliance visit to your research site without previous notification.*

  
**Prof. A. S. Jegede**



Completion Date 17-Jul-2021  
Expiration Date 16-Jul-2024  
Record ID 43613019

This is to certify that:

**Mumud Olabode Ojuolape**

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

**NIGERIAN NATIONAL CODE FOR HEALTH RESEARCH ETHICS**

(Curriculum Group)

**NIGERIAN NATIONAL CODE FOR HEALTH RESEARCH ETHICS**

(Course Learner Group)

**1 - Stage 1**

(Stage)

Under requirements set by:

**West African Bioethics Training Program**



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# COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

## COMPLETION REPORT - PART 2 OF 2

### COURSEWORK TRANSCRIPT\*\*

\*\* NOTE: Scores on this Transcript Report reflect the most current quiz completions, including quizzes on optional (supplemental) elements of the course. See list below for details. See separate Requirements Report for the reported scores at the time all requirements for the course were met.

- **Name:** Mumud Olabode Ojuolape (ID: 10279818)
- **Institution Affiliation:** West African Bioethics Training Program (ID: 667)
- **Institution Email:** universityofibaan@gmail.com
- **Phone:** +2347069496515
  
- **Curriculum Group:** Institutional/Signatory Official: Human Subject Research
- **Course Learner Group:** Same as Curriculum Group
- **Stage:** Stage 1 - Basic Course
  
- **Record ID:** 43613020
- **Report Date:** 17-Jul-2021
- **Current Score\*\*:** 80

REQUIRED, ELECTIVE, AND SUPPLEMENTAL MODULES	MOST RECENT	SCORE
Introduction to Being an Institutional Official (IO) (ID: 16640)	17-Jul-2021	4/5 (80%)
IO Knowledge Requirements: Human Subject Protections (ID: 16641)	17-Jul-2021	4/5 (80%)
Expectations of the IO (ID: 16642)	17-Jul-2021	3/5 (60%)
Challenges of Being an IO: Human Subject Protections (ID: 16643)	17-Jul-2021	5/5 (100%)

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

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Collaborative Institutional Training Initiative (CITI Program)  
Email: [support@citiprogram.org](mailto:support@citiprogram.org)  
Phone: 888-529-5929  
Web: <https://www.citiprogram.org>

## COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

### COMPLETION REPORT - PART 2 OF 2 COURSEWORK TRANSCRIPT\*\*

\*\* NOTE: Scores on this Transcript Report reflect the most current quiz completions, including quizzes on optional (supplemental) elements of the course. See list below for details. See separate Requirements Report for the reported scores at the time all requirements for the course were met.

- **Name:** Mumud Olabode Ojuolape (ID: 10279818)
- **Institution Affiliation:** West African Bioethics Training Program (ID: 667)
- **Institution Email:** universityofibaan@gmail.com
- **Phone:** +2347069496515
  
- **Curriculum Group:** NIGERIAN NATIONAL CODE FOR HEALTH RESEARCH ETHICS
- **Course Learner Group:** Same as Curriculum Group
- **Stage:** Stage 1 - Stage 1
- **Description:** This NIGERIAN NATIONAL CODE FOR HEALTH RESEARCH ETHICS Module is a must read for all Investigators and staff conducting research in Nigeria.
  
- **Record ID:** 43613019
- **Report Date:** 17-Jul-2021
- **Current Score\*\*:** 100

REQUIRED, ELECTIVE, AND SUPPLEMENTAL MODULES	MOST RECENT	SCORE
The Nigerian National Code of Health Research Ethics (ID: 19729)	17-Jul-2021	10/10 (100%)

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

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Phone: 888-529-5929

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Completion Date 17-Jul-2021  
Expiration Date 16-Jul-2024  
Record ID 43613020

This is to certify that:

**Mumud Olabode Ojuolape**

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

**Institutional/Signatory Official: Human Subject Research**  
(Curriculum Group)

**Institutional/Signatory Official: Human Subject Research**  
(Course Learner Group)

**1 - Basic Course**  
(Stage I)

Under requirements set by:

**West African Bioethics Training Program**



Verify at [www.citiprogram.org/verify/?w1140c194-51bd-4958-863a-fe7d6ec43b3c-43613020](http://www.citiprogram.org/verify/?w1140c194-51bd-4958-863a-fe7d6ec43b3c-43613020)

**COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)**  
**COMPLETION REPORT - PART 1 OF 2**  
**COURSEWORK REQUIREMENTS\***

\* NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- **Name:** Mumud Olabode Ojuolape (ID: 10279818)
- **Institution Affiliation:** West African Bioethics Training Program (ID: 667)
- **Institution Email:** universityofbsan@gmail.com
- **Phone:** +2347069496515
  
- **Curriculum Group:** Institutional/Signatory Official: Human Subject Research
- **Course Learner Group:** Same as Curriculum Group
- **Stage:** Stage 1 - Basic Course
  
- **Record ID:** 43613020
- **Completion Date:** 17-Jul-2021
- **Expiration Date:** 16-Jul-2024
- **Minimum Passing:** 80
- **Reported Score\*:** 80

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
Introduction to Being an Institutional Official (IO) (ID: 16640)	17-Jul-2021	4/5 (80%)
IO Knowledge Requirements: Human Subject Protections (ID: 16641)	17-Jul-2021	4/5 (80%)
Expectations of the IO (ID: 16642)	17-Jul-2021	3/5 (60%)
Challenges of Being an IO: Human Subject Protections (ID: 16643)	17-Jul-2021	5/5 (100%)

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**COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)**  
**COMPLETION REPORT - PART 2 OF 2**  
**COURSEWORK TRANSCRIPT\*\***

\*\* NOTE: Scores on this Transcript Report reflect the most current quiz completions, including quizzes on optional (supplemental) elements of the course. See list below for details. See separate Requirements Report for the reported scores at the time all requirements for the course were met.

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- **Stage:** Stage 1 - Basic Course
  
- **Record ID:** 43613020
- **Report Date:** 17-Jul-2021
- **Current Score\*\*:** 80

REQUIRED, ELECTIVE, AND SUPPLEMENTAL MODULES	MOST RECENT	SCORE
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APPENDIX C



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Dr. Adebunmi O. Oyekola  
B.Ed., M.Ed., Ph.D

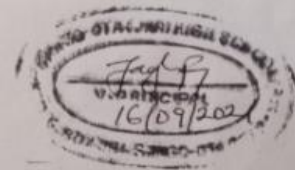
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Dr. J. O. Fehintola  
B.Sc., PGDE, M.Ed., Ph.D  
Dr. A. K. Taiwo  
B.Sc., M.Ed., Ph.D

Date: 16/09/2021

SANJO HIGH SCHOOL  
SANJO OTA  
OGUN STATE



LETTER OF INTRODUCTION

This is to certify that OFUOLAPE MUMUS OLABODE  
with Matriculation No.: 202206 is one of our M.Phil/Ph.D./Ph.D.  
students in the Department of Counselling and Human Development Studies,  
University of Ibadan. He/She would like to collect data for his/her thesis  
titled: CONFIRMATORY FACTOR MODEL OF EMOTIONAL  
INTELLIGENCE TEST AMONG ADOLESCENTS IN  
SOUTHWESTERN NIGERIA

Kindly assist him/her in any way you can.

Thank you.

*Chioma C. Asuzu*  
Prof. Chioma C. Asuzu,  
Head of Department.

HEAD OF DEPARTMENT  
Counselling And Human  
Development Studies  
University Of Ibadan  
Date.....



DEPARTMENT OF COUNSELLING AND HUMAN DEVELOPMENT STUDIES  
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Head of Department  
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B.Sc., M.Ed., Ph.D. (Ibadan)

E-MAIL:  
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counshumandevlopment@gmail.com

Date: 16/09/21

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B.Sc., M.Ed., Ph.D

Egba Comer High  
School,  
Asero, Abeokuta  
Ogun State



LETTER OF INTRODUCTION

This is to certify that Oyulope Mwanra Olabisi  
with Matriculation No.: 202206..... is one of our M.Phil/Ph.D./Ph.D.  
students in the Department of Counselling and Human Development Studies,  
University of Ibadan. He/She would like to collect data for his/her thesis  
titled: CONFIRMATORY FACTOR MODEL OF  
EMOTIONAL INTELLIGENCE TEST AMONG  
ADOLESCENTS IN SOUTHWESTERN NIGERIA

Kindly assist him/her in any way you can.

Thank you.

Prof. Chioma C. Asuzu,  
Head of Department.

HEAD OF DEPARTMENT  
Counselling And Human  
Development Studies  
University Of Ibadan



**DEPARTMENT OF COUNSELLING AND HUMAN DEVELOPMENT STUDIES**  
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Head of Department  
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 Dr. A. K. Taiwo  
 B.Sc., M.Ed., Ph.D

Date: 17/9/21

Aero High School  
 Abeokuta,  
 Ogun State.

*Ameyi*  
 VICE PRINCIPAL  
 ASERO HIGH SCHOOL JUNIOR  
 ABEOKUTA  
 DATE 17/9/21

**LETTER OF INTRODUCTION**

This is to certify that *Opolape Murwa Olabode*  
 with Matriculation No.: *2022 06* is one of our M.Phil/Ph.D/Ph.D.  
 students in the Department of Counselling and Human Development Studies,  
 University of Ibadan. He/She would like to collect data for his/her thesis  
 titled: *Confirmatory Factor Model  
 of Emotional Intelligence Test  
 Among Adolescents in  
 Southwestern, Nigeria*

Kindly assist him/her in any way you can.

Thank you.

*Chioma*  
 Prof. Chioma C. Asuzu,  
 Head of Department.

HEAD OF DEPARTMENT  
 Counselling And Human  
 Development Studies  
 University Of Ibadan  
 Date.....





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 B.Sc., PGDE, M.Ed., Ph.D  
 Dr. A. K. Taiwo  
 B.Sc., M.Ed., Ph.D

Date: 20th of Sept, 2021

ST. PHILIP'S ANGLICAN  
GRAMMAR SCHOOL,  
ARUBIDI, ILE-IFE,  
OSUN STATE.

*[Signature]*  
 VICE-PRINCIPAL  
 ST. PHILIP'S ANGLICAN PROVISION  
 DATE 20/9/21

**LETTER OF INTRODUCTION**

This is to certify that DJULAPE MUMUD OLABODE  
 with Matriculation No.: 202206 is one of our M.Phil/Ph.D./Ph.D.  
 students in the Department of Counselling and Human Development Studies,  
 University of Ibadan. He/She would like to collect data for his/her thesis  
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Kindly assist him/her in any way you can.

Thank you.

*[Signature]*  
 Prof. Chioma C. Asuzu,  
 Head of Department.

HEAD OF DEPARTMENT  
 Counselling And Human  
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 University Of Ibadan



**DEPARTMENT OF COUNSELLING AND HUMAN DEVELOPMENT STUDIES**  
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Date: 16th of Sept 2021

ST MURUMBA GRAMMAR SCHOOL,  
 Lagere, Ile-Ife,  
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Date: 07/09/2021

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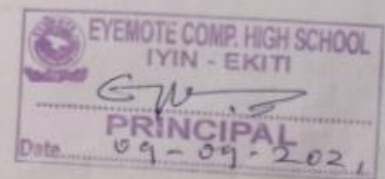
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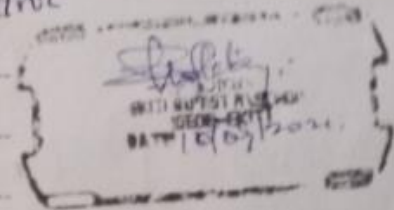
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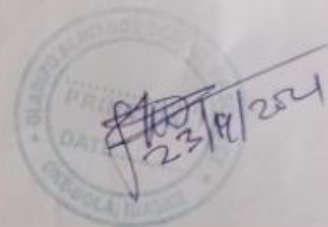
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 School

**LETTER OF INTRODUCTION**

This is to certify that Quvolge Muvud Odebo  
 with Matriculation No.: 202206 is one of our M.Phil/Ph.D./Ph.D.  
 students in the Department of Counselling and Human Development Studies,

University of Ibadan. He/She would like to collect data for his/her thesis

titled: Counselling factors model  
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Among Adolescents in Southwestern  
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Kindly assist him/her in any way you can.

Thank you.

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*Dr. B. O. Olatunji*  
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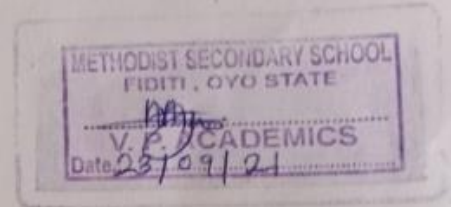
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**LETTER OF INTRODUCTION**

This is to certify that Owolape Mumin Odabode  
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 students in the Department of Counselling and Human Development Studies,

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Kindly assist him/her in any way you can.

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OYO STATE

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**PRINCIPAL**  
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**LETTER OF INTRODUCTION**

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 with Matriculation No.: 202206 is one of our M.Phil/Ph.D./Ph.D.  
 students in the Department of Counselling and Human Development Studies,  
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 Prof. Chioma C. Asuzu,  
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LETTER OF INTRODUCTION

This is to certify that Ojuelope Mwanu Olojede  
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GOLDEN ANCHOR HIGH  
SCHOOL

11, KAJOLA STREET, LADIPAK,  
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**LETTER OF INTRODUCTION**

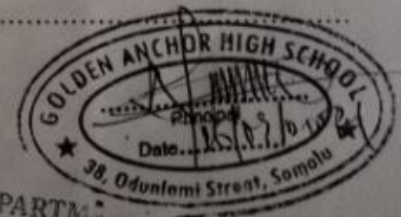
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IN SOUTHWESTERN NIGERIA.

Kindly assist him/her in any way you can.

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LETTER OF INTRODUCTION

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*Tests and Measurement*  
 Dr. M. O. Ogundokun  
 B.Ed., M.Ed., Ph.D  
 Dr. J. O. Fehintola  
 B.Sc., PGDE, M.Ed., Ph.D  
 Dr. A. K. Taiwo  
 B.Sc., M.Ed., Ph.D

Date: 06-09-2021

Saint Joseph's College

Onna

Address  
**VICE - PRINCIPAL**  
**ST. JOSEPH'S COLLEGE**  
 Onna  
 Date: 6/9/2021

**LETTER OF INTRODUCTION**

This is to certify that Odunlope Mamud Olabode with Matriculation No.: 202206 is one of our M.Phil/Ph.D/Ph.D. students in the Department of Counselling and Human Development Studies, University of Ibadan. He/She would like to collect data for his/her thesis titled: Confirmatory Factor Model of Emotional Intelligence Test among Adolescents in South Western Nigeria.

Kindly assist him/her in any way you can.

Thank you.

*Chioma C. Asuzu*  
 Prof. Chioma C. Asuzu,  
 Head of Department.

HEAD OF DEPARTMENT  
 Counselling And Human  
 Development Studies  
 University Of Ibadan  
 Date



**DEPARTMENT OF COUNSELLING AND HUMAN DEVELOPMENT STUDIES**  
**UNIVERSITY OF IBADAN, IBADAN, NIGERIA**

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Date: 06-09-2021

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 School, Itaucausa, Ondo  
 East, Ondo State.



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Date: 06-09-2021

IKORODI COMMUNITY  
 GRAMMAR SCHOOL  
 IGBO-OJA, OJO



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Date: 16/09/2021

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 HIGH SCHOOL  
 LAFENWA OTA,  
 OGUN STATE.

*F. O. Oluwade*  
 VICE PRINCIPAL  
 A.U.D. COMP. HIGH SCHOOL (UNRI)  
 LAFENWA OTA  
 Date: 16-09-2021

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 Prof. Chioma C. Asuzu,  
 Head of Department.

HEAD OF DEPARTMENT  
 Counselling And Human  
 Development Studies  
 University Of Ibadan

## APPENDIX D

### ST David Grammar School, Lagere Ile Ife, Osun State



### ST Murumba Grammar School, Lagere Ile Ife, Osun State



**Ife City College, Ile Ife, Osun State**



**ST Philip's Anglican Grammar School, Arubidi, Osun State**



**Golden Anchor High School II, Kajola Street, Ladilak, Bariga, Lagos State**



**Bright Future International College, 26, Bajulaye Road, Somolu Lagos state**





**Pobuna Senior Secondary Grammar School, Epe, Lagos State**



**Odomola Senior Secondary School, Epe, Lagos State**



**Ibadan Boy's High School, Oyo State**



**Oladipo Alayande School of Science, Oyo State**



**Fiditi Grammar School, Fiditi, Oyo State**



**Methodist Secondary School, Fiditi, Oyo State**



**Olaoluwa Muslim Grammar School, Ado Ekiti, Ekiti State**



**Ikingbinsin/Olohunda Community High School, Ado Ekiti, Ekiti State**



**Ekiti Baptist High School, Igede Ekiti, Ekiti State**



**Eyemoye Comprehensive High School, Iyin Ekiti, Ekiti State**



**Asero High School, Ogun State**



**Egba Comprehensive High School, Aser, Abeokuta, Ogun State**



**Sango High School, Sango Ota, Ogun State**



**A.UD Comprehensive High School, Lafenwa, Ota, Ogun State**



**ST Joseph College, Ondo, Ondo State**



**Temidire Community Grammar School, Igbo Oja, Ondo, Ondo State**





**Holy Trinity Grammar School, Ondo State**



**ST Monicas Girls Grammar School, Ondo State**

