UNIVERSITY OF CAPE COAST

MUSIC AND EMOTION: A STUDY OF THE RELATIONSHIP BETWEEN MUSICAL PREFERENCE AND EMOTIONAL INTELLIGENCE.

ERIC DEBRAH OTCHERE

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BY

ERIC DEBRAH OTCHERE

Thesis submitted to the Department of Music and Dance of the Faculty of Arts, University of Cape Coast, in partial fulfillment of the requirements for the award of Doctor of Philosophy degree in Music Education.

January, 2014

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original work and that no part of it has been presented for another degree in this University or elsewhere.

Candidate's Name: Eric Debrah Otchere.

Signature …….. Date:……...

Supervisor's Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Name: Prof. Isaac Richard Amuah

Signature…… Date:……...

Co-Supervisor's Name: Prof. Akosua Obuo Addo

Signature…… Date:……...

ABSTRACT

The concept of *emotion* is one that is deeply connected to both Musical Preferences (MP) and Emotional Intelligence (EI) inter alia. In fact, many people identify different emotions in their day-to-day engagements with different musical types. Identification of emotions in stimuli such as in sounds, faces and pictures has also been established ipso facto by scholars as an important aspect of EI. It thus appears axiomatic that aspects of music and emotional intelligence should be significantly related. However, the empirical evidence to support this claim is still wanting.

Employing a mixed-methods design with a sample of 100 undergraduate students, I explored the relationship between MP and EI. The Short Test of Musical Preferences and the Mayer-Salovey-Caruso Emotional Intelligence Test were used to collect data on MP and EI respectively. Inferential and descriptive statistical tools were used to test the hypotheses of relationships between the two variables. Qualitative analytical tools, such as thematic analysis, were also used to aid the explanations of the emergent quantitative outcomes.

The findings revealed that the *Upbeat and Conventional*, and the *Intense and Rebellious* music dimensions were positively and negatively correlated respectively, with the overall EI scores of participants. Whereas *Soundtracks/Theme songs* correlated positively with participant's EI scores, *Rock* music correlated negatively. Thus, there was ample evidence to believe that MP and EI are related.

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DEDICATION

To my dear parents and ever-loving siblings, and to all who love and appreciate the quest for knowledge.

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LIST OF ACRONYMS AND ABBREVIATIONS

EC:	Emotional Competence
ECI:	Emotional Competence Inventory
EEIQ:	Experiential Emotional Intelligence Quotient
EI:	Emotional Intelligence
EIQ:	Emotional Intelligence Quotient
EQ:	Emotional Quotient
EQ-i:	Emotional Quotient inventory
EQ-i, YV	Emotional Intelligence Inventory: Youth Version
MEIS:	Multifactor Emotional Intelligence Survey
MP:	Musical Preference
MPA:	Music Performance Anxiety
MSCEIT:	Mayer, Salovey and Caruso Emotional Intelligence Test
ISSE:	International Society for the study of Emotions
TTMS:	Trait Meta-Mood Scale
MI(T):	Multiple Intelligence (Theory)
SEIQ:	Strategic Emotional Intelligence Quotient
SIT:	Social Identity Theory
STAI:	Spielberger State-Trait Anxiety Inventory
STOMP:	Short Test of Musical Preference

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CHAPTER ONE

INTRODUCTION

Background to the study

Intelligence, as an entity or a concept, has formed the core of many philosophical, psychological and intellectual discourses inter alia. There appears to be a conclusive and unanimous acceptance to the claim that intelligence is, indeed, a critical part of the development of every individual. "Intelligence enables us to learn and solve problems; the more we have of it, the faster we will learn and the greater will be our chances of success in solving difficult problems" (Derville, 1990). In the foregoing quotation, Derville points to the fact that, *intelligence* is an entity that is possessed in varying degrees by different individuals, and that it gives an advantage to those who possess more. To him, those who possess more have the potential to solve complex problems which those who are less endowed would be unable to solve. The importance of intelligence in achievement in any endeavor cannot be underestimated; and this explains the great amount of research that has been carried out, and still being carried out, on the topic.

As evident from the work of Dweck and her colleagues (Dweck,1996; Dweck, Chiu, & Hong, 1995, Mueller & Dweck, 1998), "we can understand much about the kind and amount of effort people put into learning and achievement if we assess some of their beliefs about intelligence" (cited in Zirkel, 2000). Dweck *et al.*'s study posits two general orientations of intelligence; a *learning* orientation and an *entity* orientation. Whereas, "the learning orientation to intelligence perceives intellectual prowess to be a function of learning" the "entity orientation to intelligence believes that intelligence is primarily a fixed attribute that individuals are either born with or come to very early in life. Intelligence is assumed to be a measurable, and fairly constant, attribute of the person, rather than something that grows and develops with effort and new learning" (Zirkel, 2000). As far as the learning orientation is concerned, the environment is a very important determinant of the individual's amount of intelligence. According to Abeles, Hoffer and Klotman (1995), "it is a fundamental assumption in the social sciences; almost everything human beings do and know is learned after birth" (p. 117). This implies that irrespective of which genes that a person inherits, the person can still learn to be intelligent in an enabling environment; based on the kind of experiences and opportunities such an environment provides. Further support to this stance is provided by leading researchers in affective neuroscience and genetic expression such as Williams (2003) and Davidson (2003) whose findings indicate "that experience overtakes genetic dispositions in determining the biological basis of behavior once in adulthood" (cited in Boyatzis & Sala, 2004, p. 153).

Conversely, the entity orientation sees the intellect as a gift from birth; that once you do not receive it genetically, it becomes almost practically impossible to learn in later life. Thus, as far as the entity orientation to intelligence is concerned, an intelligent person is a lucky winner of the genetic lottery. Intelligence is more hereditary than learnt, and therefore an intelligent person has his/her parents or lineage to thank.

Considering the entity orientation and the standpoint of Derville in the opening paragraph, the use of the term *intelligence* (Derville, 1990; Dweck, Chiu, & Hong, 1995; Mueller & Dweck, 1998; Zirkel, 2000) is rather restrictive and aligns more with Spearman's (1904) *general intelligence* (gfactor) model, which perhaps, would have been less ambiguous a few decades ago. Spearman's 'gfactor' subscribes to a unitary overall intelligence that makes an individual who possesses more a high achiever in most, if not all, worthwhile endeavours. The ambiguity lies in the fact that, many different forms of intelligence have been identified (e.g. Gardner, 1983; Sternberg, 1985; Mayer & Salovey, 1990) in recent scholarship, and this has made the use of the term as a stand-alone word, less specific unless it is pre-modified. For example: emotional intelligence, spatial intelligence, musical intelligence, logical mathematical intelligence, verbal intelligence, and so on. According to Salovey (2010), "there has been a shift in what we mean by intelligence" over the last 50 years in psychology. An explanation to this *shift* is given by Smith (2008) who cites Gardner as noting:

> In the heyday of the psychometric and behaviorist eras, it was generally believed that intelligence was a single entity

> that was inherited; and that human beings - initially a blank slate - could be trained to learn anything, provided that it was presented in an appropriate way. Nowadays an increasing number of researchers believe precisely the opposite; that there exists a multitude of intelligences, quite independent of each other; that each intelligence has its own strengths and constraints; that the mind is far from unencumbered at birth; and that it is unexpectedly difficult to teach things that go against early 'naive' theories that challenge the natural lines of force within an intelligence and its matching domains (Gardner, 1993).

Gardner had, himself, viewed intelligence as 'the capacity to solve problems or to fashion products that are valued in one or more cultural settings' (Gardner & Hatch, 1989). He reviewed the literature using eight criteria or 'signs' of an intelligence: potential isolation by brain damage, the existence of idiots savants, prodigies and other exceptional individuals, an identifiable core operation or set of operations, a distinctive development history, along with a definable set of 'end-state' performances, an evolutionary history and evolutionary plausibility, support from experimental psychological tasks, support from psychometric findings, and finally susceptibility to encoding in a symbol system (Gardner 1983: 62-69, cited in Smith, 2008).

It was from the foregoing criteria that Gardner (1983) developed his theory of Multiple Intelligences. In the words of Saricaoglui and Arikan (2009),

> Multiple Intelligences (MI) Theory (MIT) grew out of the work of Howard Gardner who challenged the too narrowly defined intelligence with his proposal of basic human intelligence types (linguistic, logical-mathematical, musical, spatial, bodily-kinesthetic, interpersonal and intrapersonal). Although originally started as 7 intelligences, an eighth intelligence, "naturalistic intelligence" has been added to the list and now there is the possibility of a ninth intelligence "emotional intelligence" (Armstrong, 2001; Fogarty & Stoehr, 2008) or "spiritual intelligence" (Albert & Reed, 2008). MI, as a theoretical construct, suggests that intelligence should be determined by measuring one's capacity for solving problems and fashioning products in a context-rich and naturalistic setting.

It is in the aegis of the foregoing theory that the dependent variable (emotional intelligence) of this study proceeds. Since the onset of Gardner's MI theory, EI is one of the forms of intelligence that has received the most attention. Studies on emotion has been a core part of scholarship for ages, but a conception of a full domain of intelligence based on the role emotions play in enhancing, and not disrupting, logical thinking became prominent only from the 1990s. Prior to this time, many studies (mostly towing the line of Plato) that have treated emotions in relation to cognition have considered emphasis on emotions as a

distraction to rational thinking. Since the 1990s however, the emergence of theories on emotional intelligence have gradually pushed such considerations of emotions as being distractions to rationalism to the hind. Psychologists in recent scholarship believe that emotional information contributes in no meager way to making effective decisions. Emotional intelligence is different in form, scope and conceptualization from many of the other forms of intelligence. Unlike Intelligent Quotient (IQ), asserts Salovey (2010), Emotional Quotient (EQ) or, Emotional Intelligence (EI) is not a monolithic construct. It is not just one thing. Rather, it is a set of skills that people might have in abundance on some dimensions and lack on other dimensions. A detailed review of some constructs of Emotional Intelligence (captioned: *salient emotional intelligence models*) is done in Chapter two under the Literature Review.

Exploring a possible link between music and Emotional Intelligence stems from the plethora of writings that indicate a link between music and emotion (Nortz, 2002; Langer, 1979; Reimer, 2009; Hargreaves, 1989; Sloboda, 1992, Juslin & Sloboda, 2001). Juslin and Sloboda's first and second editions of Music and emotion; theory and research (2001 & 2010 respectively) is enough testimony to the concerns of scholars on the connection between music on one hand, and emotions on the other hand. The authors (2001) state that after a period of neglect, because of the listed methodological problems, the topic of music and emotion is again at the forefront of music psychology (in Vink, 2010). This is complemented by Repp *et. al* (2007), who write, "in recent years, there has been a

considerable increase in research on emotion conveyed by music (for reviews, see Juslin & Sloboda, 2001; Juslin & Laukka, 2003).

Perhaps, what triggered thoughts of music and emotion, besides personal experience and other observations, takes its roots from classical antiquity with the ancient Greeks; who believed that "music possessed a special property called *ethos*; the ability to arouse emotion of the listeners and even to influence their moral behaviour" (Todd, 1990). Plato (1985) discussed this property at length in The Republic, as did Aristotle in The Politics. Plato, for example, permitted only music in the Dorian and Phrygian modes; the Dorian because it was thought to instill courage in the defenders of the Republic, and the Phrygian because it was thought to encourage temperance and restraint. He believed that, other modes engendered moral lassitude and consequently forbade them. Aristotle added his voice to Plato's by indicating that "songs in the mixolydian mode, as in Euripidean choruses, were "mournful and restrained" (Fleming, 1970).

Todd and Fleming (in their discussions on Plato and Aristotle respectively) make it very clear, from the Platonian and Aristotelian philosophies, that different types of music engender different kinds of emotions. This serves as a solid stanchion upon which this study is pitched; exploring the relationship between musical preference and emotional intelligence. Nortz (2002) avers that,

> Music, as an art form, moves man to delight in the emotions and passions which the music evokes. The repeated listening to a certain kind of music becomes

> habitual in the strictest sense of the word: the emotions clothe themselves with a habit, either a virtue or a vice, according to the quality of the music one habitually listens to. In this regard Aristotle wrote: ". . . emotions of any kind are produced by melody and rhythm; therefore by music a man becomes accustomed to feeling the right emotions; music has thus the power to form character, and various kinds of music based on the various modes, may be distinguished by their effects on character — one, for example, working in the direction of melancholy, another of effeminacy, one encouraging abandonment, another self-control, another enthusiasm, and so on through the series." Music can imitate a reasonable, ordered, honorable, virtuous emotion, in which case music helps dispose man to the virtuous and honorable ordering of his life. However, music can also imitate an unreasonable, disordered, dishonorable, vicious emotion.

In the foregoing assertion, Nortz uses phrases such as *repeated listening* (to a particular kind of music), and *music that one habitually listens to*, to clarify even more, the stance of Todd and Fleming. It presupposes that, emotions are heightened in music that is repeatedly listened to; which in this study, alludes to the musical preference of the individual. In a study conducted on responses of people to different kinds of music, Sloboda (1999) reports; that “in general, music

increased emotional state towards greater positivity (for example, more happy), greater arousal (for example, more alert), and greater present-mindedness (for example, less bored). But what seemed of particular significance is that mood change was greatest when participants exercised choice over the music they were hearing. Music maximally enhances well-being when participants exercise some degree of autonomy and self-determination in the type of music they hear." The exercise of autonomy over the choice of music spans from tuning in to a radio station that plays a particular type of music during certain times of the day or playing a record of a favorite artist, dedicating hours to downloading tracks of favorite songs online, to spending money in purchasing records of favorite tracks or attending concerts by particular musical artists/groups. These, again, allude to the use of musical preference in this study. Thus, to achieve maximum impact (feel the desired emotion) from a piece of music, one is likely to choose the music he or she prefers to listen to. The argument suggests that although people can perceive emotions from some music they listen to for the first time, greater emotions are felt when people listen to music that they actually have a preference for. It is probably the emotions that lead people on to have preferences for certain musical genres over others in the first place.

Since preference for a particular music is a product of time, it presupposes that the music that people eventually prefer may have been consistent in arousing particular desirable emotions in the person for some individually subjective and indeterminate period of time. Figure one (next page) provides a visual detail of the relationship between duration of musical exposure (time), level of arousal and

outcome of the arousal on preference. It is clear that the consistency of a musical stimulus in arousing desired emotions lies at the center of the willingness of the individual to engage in repeated listening to the particular musical stimulus and subsequently develop a liking for the particular music. The figure also shows that, in rare cases, people develop a liking for a particular piece of music upon first hearing only. Even in such a case, the reason is because the music was able to arouse the desired emotion which, as it were, happens to stand between perceiving the music on one hand, and developing liking for it on the other hand. It is the longing to experience such aroused emotions that will lead the individual to eventually, play and listen to the music again.

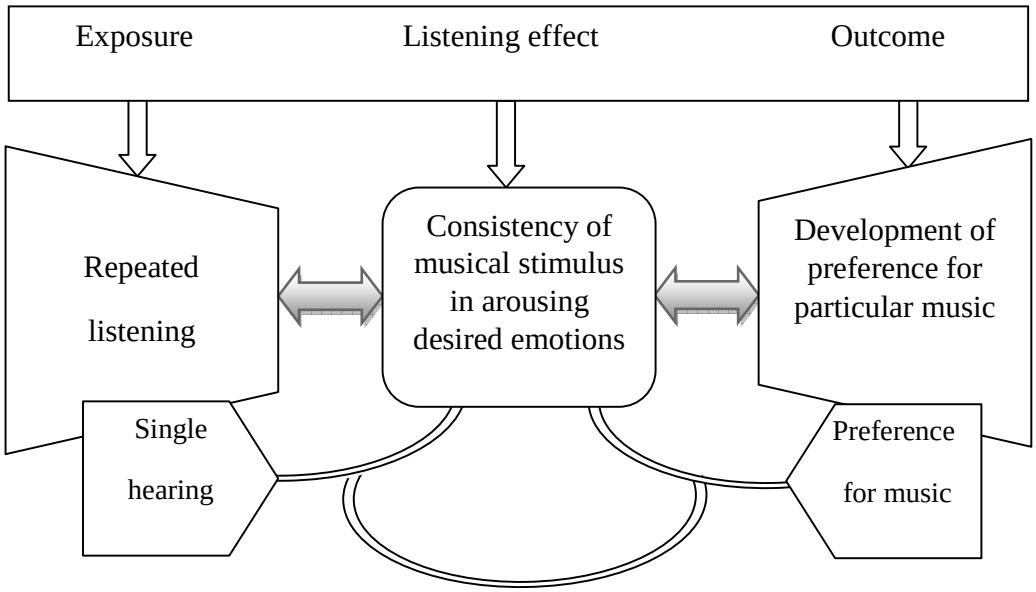

Figure 1: Music: exposure, affect and outcome on preference

To sum up, the increasing interest in research in the area of emotional intelligence and the strong link that music has been established to have with emotion forms the background and demonstrates the need for this exploratory study on the relationship between the two variables: emotional intelligence and musical preference.

Statement of the Problem

Many scholars have adequately demonstrated a link between music and emotion (West, 2009; Nortz, 2002; Langer, 1979; Reimer, 2009; Hargreaves, 1989; Sloboda, 1992, 1999, 2001). Perhaps Juslin and Sloboda's (2001) book on Music and emotion: theory and research, as already indicated, is enough testimony to this claim. However, it is increasingly evident that empirical studies in this field have not gained much ground. Many of the studies that border on music and emotions are short of empirical validation; they seem to stem from logical speculations and personal intuitions. A number of studies have also been done in aspects of music and how they correlate with emotional intelligence. Rensburg (2005) for example, investigated the role of emotional intelligence in Music Performance Anxiety (MPA) and found support to her hypothesis that there is a strong inverse relationship that exists between Music Performance Anxiety (MPA) and emotional intelligence. Brackett and Mayer (2003) have also examined and established the link between Emotional Intelligence and Emotional Creativity. Resnicow, Salovey and Repp (2004) have on their part, worked on

recognizing emotion in music performance as an aspect of emotional intelligence and found out that the four basic emotions (anger, happiness, sadness and fear) can be communicated quite effectively through music.

No study however, seems to have been done on how musical preference and emotional intelligence are related. Perhaps some of the studies that have been done which are close to this has been on *music and character/morals* (Boethius, 1995; Kilpatrick, 1992; Nortz, 2002) on one hand, and *musical preference and personality/lifestyle* (Rentfrow & Gosling, 2002; Dalrymple, 2009; Schwartz & Fouts, 2004; Pearson & Dollinger, 2003; Delsing, Ter Bogt, Engels, & Meeus, 2008) on the other hand. The focus of the studies on music and character has been that, music influences emotions and the emotions in turn, influence the behavior and ultimately the character of the individual. Types of music that engender negative emotions lead on to negative behaviors whiles music that engenders positive emotions lead on to positive or acceptable behaviors. This establishes emotions as the pivot for a positive or negative turnaround in behavior and character. To exemplify the relationship between music and behavior, West (2009) explains what has been shown in a growing number of studies on the choice of music and the impact it has on consumer behavior. He reports:

> Classical and popular music have more positive effect on purchasing intentions than easy listening and no music, and music can create a specific atmosphere to distinguish a restaurant from competitors. Absence of music seems to

> have negative effects on both atmosphere and spending behavior (West, 2009. p.286).

The model on page 17 (figure 2) gives a visual representation of the relationship between music, emotions and character. It is evident from the model that music (different genres and styles with differing characteristics) stirs up different emotions (negative or positive) which, in turn, influences the behavior and character (good or bad) of the perceiver (temporarily or permanently). Over time and repeated exposure to the same kinds of emotions provoked by a particular kind of music one listens to, a habit, which eventually tells on the character of the individual, is developed. Because of the time frame involved in this process of character formation and the many other equally functional available environmental factors that may also have bearings on character formation, it becomes quite difficult to point out the exact role of music when a person has eventually developed a particular character. This, to some extent, explains the lacuna in the empirical research in this field. Notwithstanding the said difficulty, the available evidence found in the existing literature acts as a good step in pursuing further studies on music, emotions and character. If positive emotions can be engendered through some kinds of music which will ultimately lead on to good morals, which is the expectation of any upright society, then a study in this direction is by no means, extremely worthwhile.

However, in this current study, I look beyond the relationship between music and its ability to arouse emotions in listeners. My focus is not on

'emotions' as a stand-alone concept, but rather on a type of intelligence which is built on emotions. What I aim at doing is to unearth the possible relationship between the kinds of music that participants in this study indicate as their most preferred and their emotional intelligence. There is a lot more to the concept of emotional intelligence than the restricted use of emotions in the discussions above. Emotional intelligence encompasses (to use the Mayer / Salovey four branch model definition) the perception of emotion, the use of emotion to facilitate thought, the understanding of emotion and the management of emotions (Brackett & Salovey, 2004). This implies that the different studies on music and emotions discussed above, do not shed adequate light on the variables involved in this present study. The scholars in those studies focus on the single word-concept of *emotion*, and not on another concept which though built on emotions, is quite different in its theoretical foundations and conceptualization.

The other similar area; musical preference and personality/lifestyle, provides further empirical evidence that strengthens the course of the present study. In one of the studies of Rentfrow and Gosling (2002), they observe a "fascinating pattern of links between music preferences and personality, self-views, and cognitive ability" (p. 1248). This observation buttresses the unanimity of conclusions made by many other scholars who have engaged in research on musical preference and personality (North & Hargreaves, 2008; Dalrymple, 2009; Schwartz & Fouts, 2004; Pearson & Dollinger, 2003; Delsing, Ter Bogt, Engels, & Meeus, 2008).

Table 1: Summary: music preferences and personality characteristics

Musical genre	Personality Characteristics
Blues fans	have high self-esteem, are creative, outgoing, gentle and at ease
Jazz fans	have high self-esteem, are creative, outgoing and at ease
Classical music fans	have high self-esteem, are creative, introvert and at ease
Rap fans	have high self-esteem and are outgoing
Opera fans	have high self-esteem, are creative and gentle
Country and western fans	are hardworking and outgoing
Reggae fans	have high self-esteem, are creative, not hardworking, outgoing, gentle and at ease
Dance fans	are creative and outgoing but not gentle
Indie fans	have low self-esteem, are creative, not hard working, and not gentle
Bollywood fans	are creative and outgoing
Rock/heavy metal fans	have low self-esteem, are creative, not hard-working, not outgoing, gentle, and at ease
Chart pop fans	have high self-esteem, are hardworking, outgoing and gentle, but are not creative and not at ease
Soul fans	have high self-esteem, are creative, outgoing, gentle, and at ease

There is a general consensus among these scholars that point to the predictability of one's personality based on knowledge of his or her musical preference. In the words of Dalrymple (2009), "musical preferences actually seem to be a part of one's identity, as people often associate fans of particular genres with corresponding personality traits" (p. 1). In table one (previous page), I give a summary of some common personality characteristics of different people who indicate preference for different musical genres. The information is summarized from the works of North and Hargreaves (2008), North, Desborough and Skarstein (2005).

With the available scholarly evidence accrued over the years (as demonstrated in table one above), it is quite possible now to have a fairly accurate guess about the personality and lifestyle of an individual once the person's true musical preference is known (for more details or general personality characteristics of people who prefer different musical genres see Rentfrow and Gosling, 2002; Schwartz and Fouts, 2004; Pearson and Dollinger, 2003). Thus, "there still seems to exist a generally strong relationship between the music someone listens to and his or her personal characteristics" (Dalrymple, 2009. p.9). The conclusions made from the studies above provide a strong pointer to the need to further investigate other phenomena to which musical preference may be related. In this study, therefore, the possible relationship between musical preference and emotional intelligence is investigated.

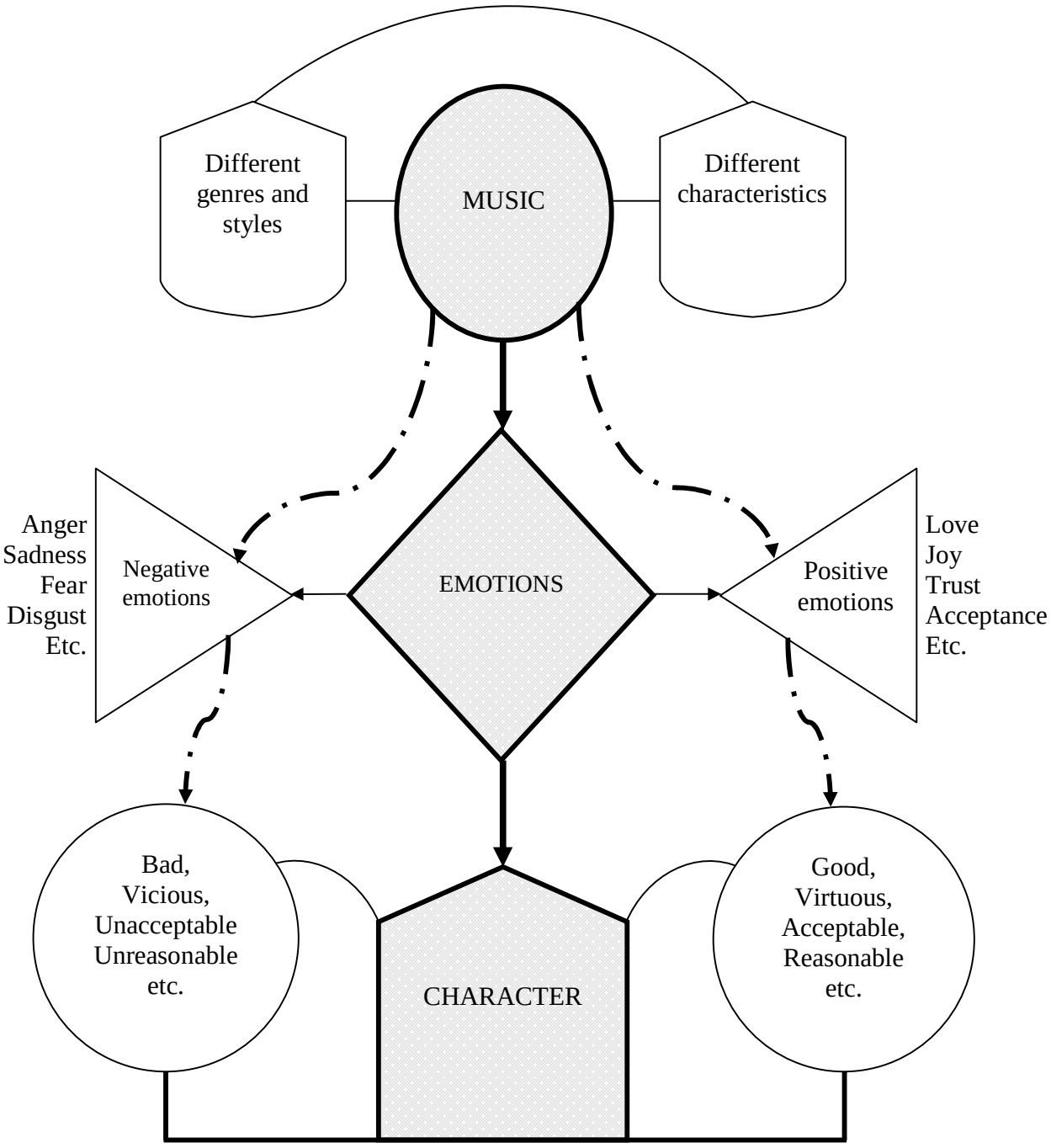

Figure 2: Music-emotion-character relationship model

In Ghana, the need to carry out such a study is even more pressing. It is clear from the preceding paragraphs that the topic of music and emotion has not caught much of the attention of Ghanaian music educators. Even the most related subjects on 'music and personality' or 'music and character' have not received adequate attention in Ghanaian music education discourse. In terms of scope, the closest studies by Ghanaian music educators include that of Amuah and Sracoo (2001) who selected two hundred and seventy basic school pupils and investigated the differences among the pupils' abilities to perceive the expressive qualities of music. They concluded that there is a significant difference between lower and upper primary pupils in their abilities to perceive dynamic qualities of music. This shows that the topic of study in this thesis is particularly new in Ghanaian music education scholarship.

Purpose of the Study

My general purpose for embarking on this study was to investigate the possible existence of a relationship between an individual's preference for a particular music dimension (four broad music dimensions specified by Rentfrow & Gosling, 2003; namely Reflective and Complex music, Intense and Rebellious music, Upbeat and Conventional music, Energetic and Rhythmic music) and the person's emotional intelligence. Stemming from this, the specific objectives of the study were:

a) to find out if there was a significant difference in the emotional intelligence of different undergraduate students who prefer musical genres within different music dimensions.
b) to find out if there was a significant difference in the emotional intelligence of different undergraduate students who prefer musical genres within the same music dimension(s).
c) to explore the possible relationship between musical preference and emotional intelligence.
d) to investigate the possibility of high, average or low emotional intelligence among participants who report to prefer musical genres within a particular music dimension.

Research Questions

In pursuing the purpose of this study, I raised the following research questions:

a) What is the difference in the emotional intelligence of different undergraduate students who have preferences for musical genres under different music dimensions?
b) What is the difference in the emotional intelligence of different undergraduate students who have preferences for musical genres under the same music dimension(s)?

c) What is the relationship between the musical preference and the emotional intelligence of undergraduate students?
d) To what extent is a particular genre of music or music dimension likely to engender high, average or low emotional intelligence as against other genres or dimensions?

Besides the research questions above, the three research hypotheses which follow, and which correspond to the first three research questions were set to be tested.

Research Hypotheses

The following null and non-directional alternative hypotheses were set and subjected to statistical testing to help establish the possible relationship between the two variables: musical preference and emotional intelligence.

1) **H_0** – There is no significant difference in the emotional intelligence of different undergraduate students who prefer musical genres under different music dimensions.

   H_1 – There is a significant difference in the emotional intelligence of different undergraduate students who prefer different musical genres under different music dimensions.

2) **H_0** – There is no significant difference in the emotional intelligence of different undergraduate students who prefer musical genres under the same music dimension(s).

   H_1 – There is a significant difference in the emotional intelligence of different undergraduate students who prefer musical genres under the same music dimension(s).

3) **H_0** – There is no significant relationship between the musical preference and the emotional intelligence of undergraduate students.

   H_1 – There is a significant relationship between the musical preference and the emotional intelligence of undergraduate students.

Significance of the Study

The importance of emotional intelligence education is gaining momentum around the world. Since Howard Gardner put forward his theory of multiple intelligence (Gardner, 1983), researchers such as Goleman (1995) have asserted the essential value of emotional intelligence, also known as emotional quotient (EQ). It is increasingly being acknowledged that EQ may be the most significant and important domain of intelligence in the overall success of our lives (Griffin, 2007). Griffin, indeed, establishes the forum for discussing the significance of any research in the field of emotional intelligence. Davies, Stankov, and Roberts (1998) explain that "marshaling emotions in the service of a goal is essential for selective attention, self-motivation, and so forth" (p. 991). They further draw

support from Goleman (1996) who stated that emotional self-control and the delay of gratification underlie all human accomplishment. Taking these points together, the significance of emotional intelligence becomes even clearer. So much is the importance of emotional intelligence stressed that Goleman (1995) assigns 80% of general life success to it. The fact that many people who have very high intellectual abilities and demonstrate to have high IQs do not necessarily excel always in life shows that IQ is not all that matters. People who are in firm control of their emotions and know when to say what, or how to say or do what, in order not to offend their own or the other person's feelings have often managed to do well in many areas.

Although some scholars such as Davies, Stankov and Roberts (1998) do not fully support all the exaggerated can-dos of emotional intelligence or what they refer to as an 'elusive construct', they do not condemn the usefulness of emotional intelligence either. Hein (2006) for example, has criticized the claim of Goleman (that emotional intelligence alone contributes about 80% of life's success) for lack of empirical backing; however, Hein does not, in any way, contradict the fact that emotional intelligence does contribute to success in life. The need for people with high emotional intelligence in different fields has become urgent in contemporary times; thus "the 21st Century worker requires new competencies based around emotional intelligence. Technical skills are not enough, life skills are required (Microsoft, 2003). This points to the inadequacy of IQ and technical expertise alone as determinants of life success. It shows the paucity in the emphasis on IQ to provide all the answers. According to Mayer and

Cobb (2000), EI may be productively applied with regard to all branches of the creative arts (in Rensburg, 2005). Music is a core component of the creative arts, therefore exploring applications and relationships of emotional intelligence to aspects of music is a step in the right direction.

This study in particular, is very significant in that, it adds to the limited number of empirical research on the topic of music and emotional intelligence. It fills a very important gap in the literature in this area of study and provides a solid basis for further research. It is envisaged that, the findings from this study will benefit music educators immeasurably. Hargreaves (1986/2004) contend that "although music teaching (and indeed teaching in other arts subjects) forms an equally important part of the curriculum, there is no equivalent body of developmental theory upon which teaching practices are based" (p. 2). This study is thus, a step in contributing to a developmental theory upon which music teaching practices can be based. It will help music educators to do purposeful selection of songs or propose types of music to be studied in schools, having a good idea of what that music can do in the development of the learners.

According to West (2009), "music accompanies many aspects of daily life, and affects us whether we are aware of it or not" (p.284). He goes on to indicate specifically that "unwanted and disturbing sounds can affect our well being in many ways" (p. 286). Irrespective of the philosophy that underpins the study of music in any school, the important point in education is the inculcation of desirable values and the achievement of positive outcomes. It is incumbent on music educators therefore, to carry out studies that identify the effects of different

kinds of sound and particularly of music on aspects of our lives that matter; and this is one of the latent aims of this present study.

Furthermore, this research holds a lot of promise for the practice of music therapy. Many conditions to which music can be employed as therapy are based on or are related to emotions in one way or the other. A study that sheds light on how emotions can be managed and channeled towards positive outcomes will by no small measure, contribute to the success story of music therapy practices. Music therapists can use the findings in this study as a strong basis for the selection of music for therapeutic purposes, bearing in mind the relationship that such music may have with the emotional intelligence of their patients. Also, knowledge of the emotional intelligence scores of people can guide music therapists in their selection of music for clinical purposes. Thus, emotional intelligence provide a useful avenue through which music therapists can decide on which kind of music to select and use for different patients with emotion-related issues.

It will also help counselors, teachers, psychologists, parents and other people in managerial positions who would want to improve their emotional intelligence and that of their counselees, students, children and staff by encouraging them to do purposeful listening to prescribed kinds of music or to genres within specified music dimensions. Thus, the significance of this study cannot be overemphasized. People listen to different kinds of music everyday for the immediate gratification, without the slightest idea of what that music can do to

them over time. The findings in this study may help initiate a fruitful intellectual discourse in that direction as well.

Need for the Study

> Emotion is one of the most pervasive aspects of human existence, related to practically every aspect of human behavior- action, perception, memory, learning, and decision making. It is thus all the more remarkable that the study of emotion has been neglected throughout much of psychology's brief history. Although the scientific study of emotions dates back to the nineteenth century (Darwin 1872; James 1884; Wundt 1897), studies of emotions have often been eclipsed by studies concerned with the 'higher' forms of mental processes, such as reasoning, problem solving, and decision making. As noted by Lazarus (1991. p.1), 'failure to give emotion a central role puts theoretical and research psychology out of step with human preoccupations since the beginning of recorded time.

Lazarus (in the above citation) demonstrates the effect of the failure to give research on emotion a central place. As a follow-up to that, Juslin and Sloboda (2001) assert that,

> questions about music and emotion have occupied human beings ever since antiquity. It is a topic of considerable

> interest to laymen and experts alike. Some sort of emotional experience is probably the main reason behind most people's engagement with music. Emotional aspects of music should thus be at the very heart of musical science (p. 3).

Having seen the need to pay attention to the role of emotions in many human endeavors, many researchers (Juslin & Sloboda, 2001; Lazarus, 1991; Resnicow, Salovey & Repp, 2004) are now exploring various aspects of emotion and how they relate to other areas. The problem with the measurement of emotions that, somehow, scared many researchers seems to be a thing of the past. There are now many published and tested instruments that are meant to measure, to a fairly objective extent, the emotional intelligence/competence of individuals. Examples include: the Mayer Salovey Caruso emotional intelligence test (MSCEIT) (Mayer, Salovey & Caruso, 2002), the Emotional Quotient Inventory (EQ-i) (Bar-On, 1997) and the Emotional Competence Inventory (ECI-2) (Boyatziz & Sala, 2001). It is thus, important and feasible to carry out studies on how emotional intelligence applies to different spheres of life.

Stressing the need to explore the relationship between aspects of music and emotional intelligence, apart from the description in the background to the study, Nelson and Bouton (2002) explain the context for emotional expression. They write: "feelings seldom, if ever, occur in a vacuum. Rather, the emotions people feel almost always occur in the presence of a myriad of stimuli that arouse and shape them" (p.60). One of the most powerful stimuli that arouse and shape

emotion, however, is sound (music). In support of this, Bachorowski and Owren (2002) aver that "how sounds are used, and the exact ways in which listeners perceive, appraise, and respond to sounds, thus constitute an important part of emotional intelligence (EI). Speaking on 'sound and affect' the authors go on to explain how sound directly influences emotion. They write: "sounds can trigger general organismal activation due to stimulation of low-level neural circuitry such as the pontine nuclei of the brainstem" (Bachorowski & Owren, 2002, p. 13). This points clearly to the fact that, sound (music in this case) is a very strong stimulus for emotional arousal and shaping. In an age when technological advancement has catalyzed the proliferation of musical gadgets (ipod, laptops, tapes, compact disc players, phones, mp3 players and the like), it goes without saying that, a day hardly passes that one will not listen to or at least, hear any music. Hargreaves, North and Tarrant (2006) for example, conclude from two of their previous studies that, "approximately 40-50% of most people's everyday lives involve music in some way, whether in passive listening, or in more active participation" (p. 135).

The effects of all this music that are consumed daily are, however, of very little concern to many people. Bradley and Lang (2000, 1999) have expended energies exploring the effect of sound on the listener and report that, "recent empirical work on the psychophysiology of sound-induced affect nicely demonstrates that sound can routinely affect listener arousal and emotion" (cited in Bachorowski & Owren, 2002). An effect on the emotion also means an effect

on the behavior of the individual. This is exactly what Gross and John (2002) imply when they assert that "emotions both help *and* hinder functioning" (p.297).

It becomes increasingly urgent therefore, to pay particular attention to the things that have the greatest potential of influencing our emotions. In a study conducted by Sloboda (1999), he reported that:

> music increased emotional state towards greater positivity (e.g. more happy), greater arousal (e.g. more alert), and greater present-mindedness (e.g. less bored). But what seemed of particular significance to us is that mood change was greatest when participants exercised choice over the music they were hearing. Music maximally enhances well-being when participants exercise some degree of autonomy and self-determination in the type of music they hear.

Sloboda's findings speak to the extent to which a study into the relationship between musical preference and emotional intelligence is worthwhile. Music clearly influences emotion, which in turn, helps or hinders functioning. The extent to which the influence of the music is felt also depends on the preference of the individual. A clear apotheosis to this scenario is further found in the series of studies conducted by Schellenberg (2006), who was investigating aspects of what has come to be known as the *Mozart effect* (see Shaw & Ky 1993, Rauscher, Shaw and Ky, 1995, 1997). In her studies, Schellenberg (2006) found out that, it was not just listening to 'Mozart' that prompted the high scores of participants in the Spatial and other intelligence tests (as reported by Rauscher,

Shaw, & Ky, 1995; Chabris, 1999; Hetland, 2000; Rideout & Laubach, 1996; Rideout & Taylor, 1997; Rideout *et al*., 1998), but rather, the effect stems from the *arousal and mood hypothesis* which posits that any stimulus which stirs up positive emotions in an individual before a task (specifically spatial or other intelligence related test) is likely to make the person perform well in the task. His basis for this conclusion was that, he realized a *Mozart effect* when some participants in his study did not listen to Mozart, but to another stimulus they preferred. This again explains the stance of preference in this whole discussion.

Schellenberg (2006) found that performance (of subjects in his study) varied reliably as a function of preference. According to him, "those who preferred Mozart did better on the … test after listening to Mozart. Those who preferred the story did better after listening to the story." In figure three, I give further clarity to the arousal and mood hypothesis. In the model below, music is on the foreground of other potential mood-arousing stimuli (which do not form part of this present study). The point here is that, according to the mood arousal hypothesis, other conditions that can arouse positive moods in participants may also achieve the same so called 'Mozart effect'. What is most worthy of note here is that, it is not all music that helps in achieving a positive effect on all persons. The effect varies from person to person according to the musical preference(s) of the individual. Thus, it is possible to have, for example, a 'Marley effect' on people who prefer reggae, a 'Reeves / Dolly' effect on country music fans, an 'Ellington' effect on Jazz fans, a 'Slayer' effect on heavy metal fans, or a 'Brown' effect on fans of funk.

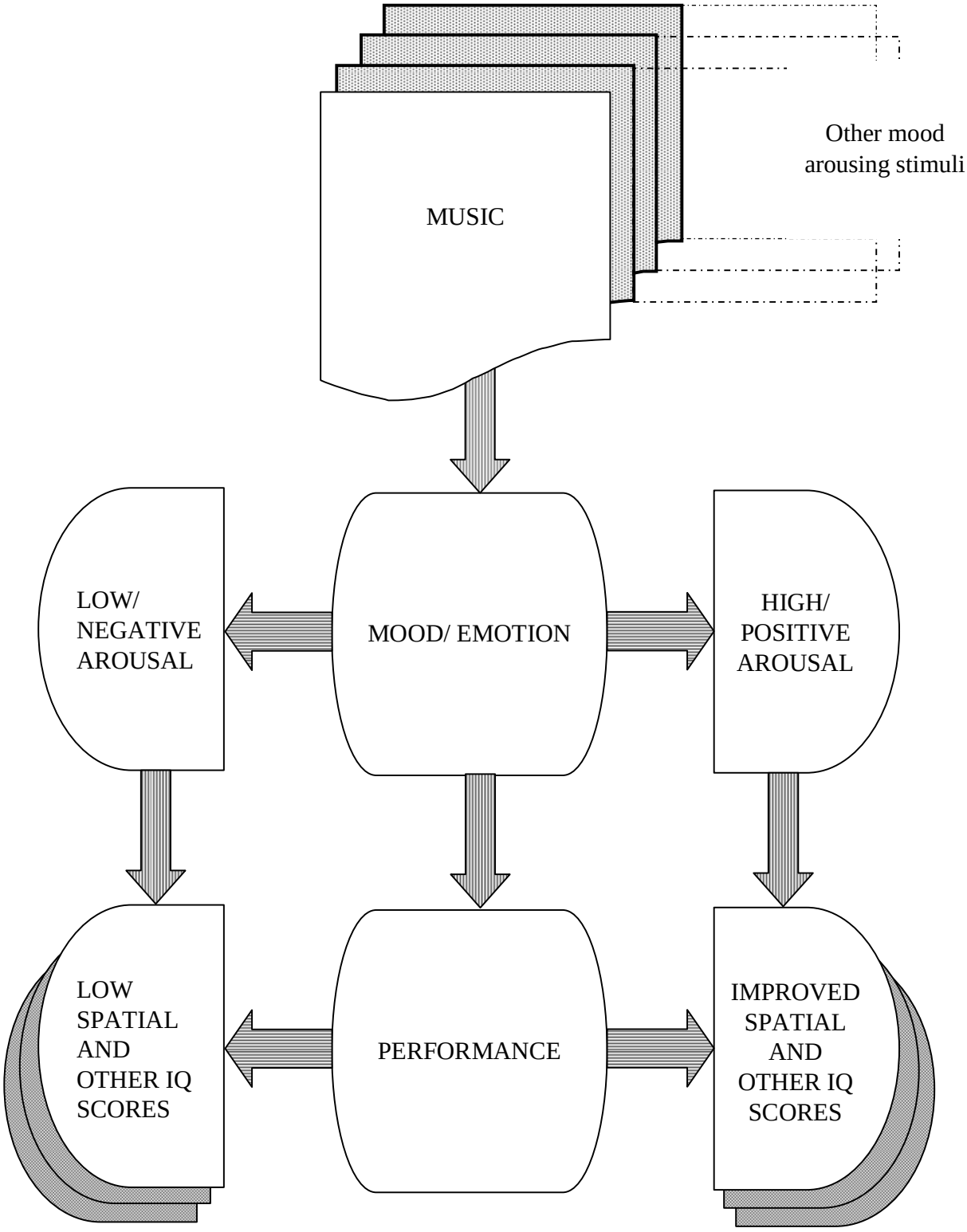

Figure 3: Arousal and Mood Hypothesis Model

In sum, the claim that music incites mood and emotion has been firmly established ipso facto. In figure four (page 32), I provide a summary of different characteristic elements in music which are generally aligned with different specific kinds of emotion. This figure was adapted (and slightly modified) from Juslin (2001). It is reproduced here from the work of Otchere (2013). The identification of the characteristics listed in figure four is not the work of a single scholar but a collation from many different studies by different scholars. It is clear from the illustration that the emotion of happiness, for example, is mostly recognized by listeners if the music has, among others, a relatively fast mean tempo, staccato articulation, bright timbre, high sound level and the like. For all the emotions, it is significant to note that the characteristics in the music that induce them are subjective and are mostly the product of enculturation, level of musical training, preference, the listening situation and other similar factors. Nonetheless, they generally provide a good basis for identifying specific encoded emotions in one piece of music as against another piece with different or contrasting characteristics (example major mode – happy, minor mode – sad).

These provide adequate proof that a plethora of studies (Thayer & Levenson, 1983; Krumhansl, 1997; Gabrielsson, 2001; Peretz, 2001; Schmidt & Trainor, 2001; Sloboda & Juslin, 2001; Woody, 2004; Dunn, 2010) speak to a known reliable effect of music on the emotional states of listeners. But this is how far research on musical preference and emotions has reached.

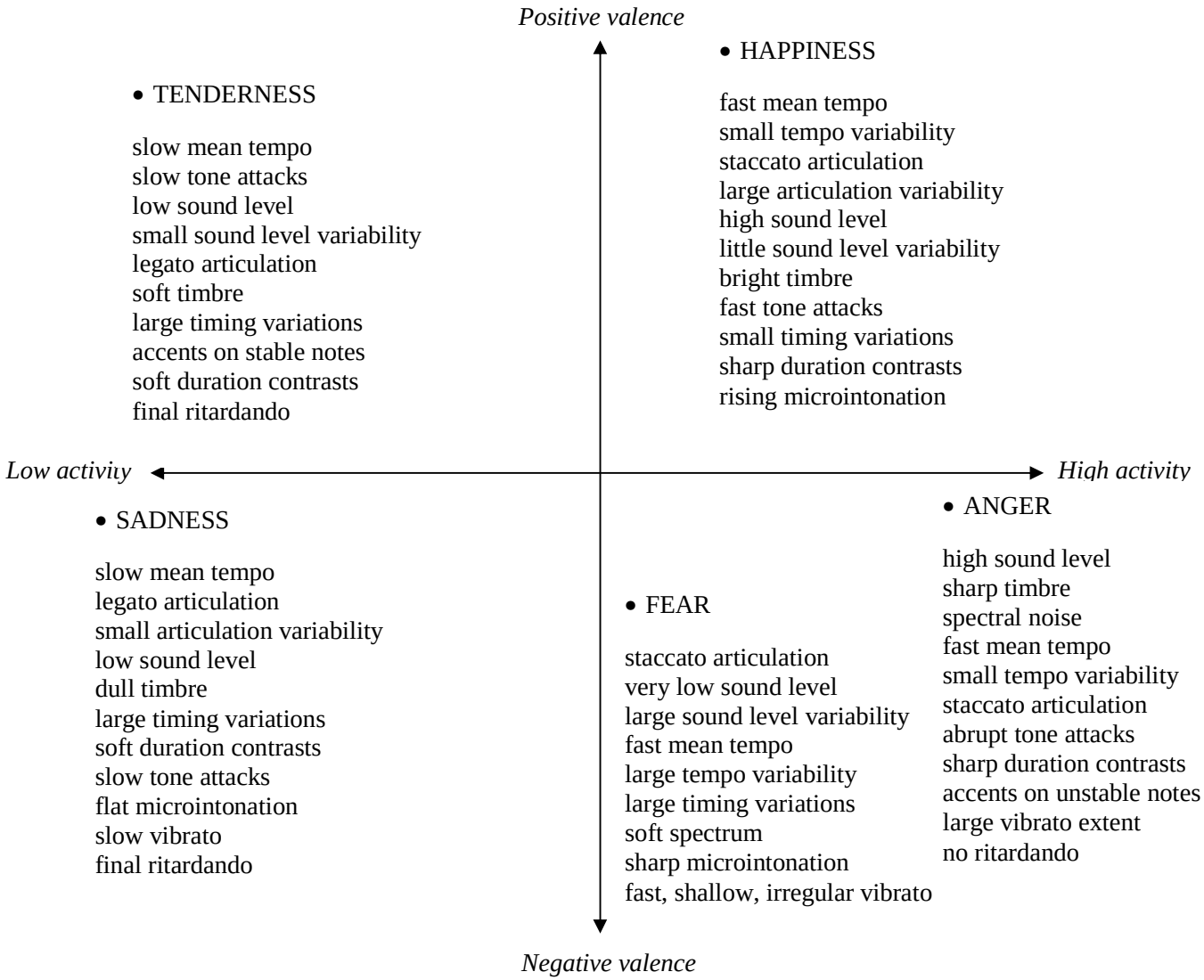

Figure 4: Some expressive features of music and the general emotions they communicate to or induce in listeners

Knowing for sure that different kinds of music a) stir up different recognizable emotions (recognition of emotion), b) that some music can enhance performance of the individual (facilitate the thought) and c) that music (depending on an individual's preference) can be used to alter or engender desired moods (management of emotions), then the need to investigate musical preference and emotional intelligence is indeed, in line because the abilities to recognize emotion, use emotion to facilitate thinking, understand emotions and manage emotions are the main tenets of emotional intelligence (particularly the ability EI model adopted in this study).

Delimitation

The purpose of this study falls in line with Newman's (2005) description of an exploratory study. I set out to find the presence or otherwise of a relationship between musical preference and emotional intelligence. This was the extent to which the scope of the study was set. Explanations as to why preference for a particular type or kind of music results in a particular emotional intelligence score are only logical speculations but not primarily part of my considerations in this study.

Also, there are different models of emotional intelligence. Although these models are similar in many respects, there are slight differences between their theoretical conceptualizations. In this study, therefore, the EI model of Mayer and Salovey was adopted. Only an overview was given on some of the other models in the Literature review. The emotional intelligence of the participants in

this study, in line with the selected model, were as measured by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT).

Again, the musical preferences of participants in this study were solicited by the short test of musical preference (STOMP) and not by any other instrument.

The target population in this study was the undergraduate students in a selected public University in Ghana. All inferences and conclusions were not, therefore, extended beyond them.

Definition of Terms

Emotional Intelligence: There are a number of definitions by different scholars on emotional intelligence (see a discussion of other definitions in Chapter Two under the literature review). For this research however, the definition of Mayer and Salovey (2001), based on their four-dimension ability model was adopted. They primarily define emotional intelligence as the ability to perceive, use, understand and manage one's own emotions and that of others towards positive outcomes.

Terms like Emotional Quotient and Emotional Competence have all been used in this study interchangeably to denote the same thing (emotional intelligence).

Musical Preference: Musical preference, as used in this study, borrows from Hargreaves, North and Tarrant (2006) who "use the term *preference* to refer to a person's liking for one piece of music as compared with another at a given point in time…" (p.135).

Musical tastes has been used in parts of this thesis interchangeably; in the same sense as musical preferences.

Organization of the study

Generally, the research report was organized into five chapters. Chapter one dealt with setting the research into perspective. Sub-headings here included: background to the study, statement of the problem, purpose of the study, research questions, research hypothesis, significance of the study, need for the study, scope (delimitation) of the study, definition of term(s) and the organization of the study.

Chapter two focuses on the review of related and relevant literature. It highlighted what different authorities have said about various aspects of the research problem. This was to help clarify and streamline the research, and give it a focus, as well as provide a firm basis for verification of the research findings as far as communicative validity is concerned. This chapter also helped in establishing the lacuna in the field as described in the need for the study and in the statement of the problem. The review was done under appropriate sub-headings on the two main variables (Musical preference and Emotional Intelligence) of the study.

Chapter three covers a description of the procedures by which data required for the study was collected and analyzed. A critical look at the research design, population, sampling and sampling procedure, research instrumentation, role of the researcher, data collection procedure, data reduction procedure, issues

on validity and reliability, limitations of the study and data analysis procedure is given.

Chapter four presents pertinent data collected in the field as well as the analysis of the data. It was the chapter where the hypotheses set earlier in the chapter one were subjected to statistical testing. It also addressed the specific research questions in this study.

Chapter five essentially dwells on the presentation of findings from the study. It summarizes the work, displays the conclusions drawn from the findings, presents recommendations and offers suggestions for future research.

References as well as the appendices used in the research work are presented after this chapter.

CHAPTER TWO

LITERATURE REVIEW

Introduction

Reviewing related literature in any study carries with it a number of advantages. Apart from helping to avoid unintended replication, it informs the selection of methods and provides an important dimension for interpreting the findings of the study; thus imbuing the study with cumulative and predictive validity among others. Reviewing literature reveals how aspects of a topic may be connected to aspects of other topics. This is what Merriam (1971) implies when he avows: "it is a truism … that no event or object in human society or culture exists as an isolate; rather, all phenomena are interrelated into a complex whole whose parts are delicately and inextricably interwoven with one another."

This study stemmed from the same kind of thought, as I aimed at finding out how two different variables: musical preference and emotional intelligence are 'inextricably interwoven with one another'. Relevant and related literature is reviewed on each of the two variables involved in this study, namely: musical preference (which is the independent variable) and emotional intelligence (which is the dependent variable) respectively. The review employs the topical, thematic and conceptual approaches. A summary of the main issues reviewed in the

literature of the two variables is also given afterwards. Figure five presents a visual of the organization of the literature reviewed in this study.

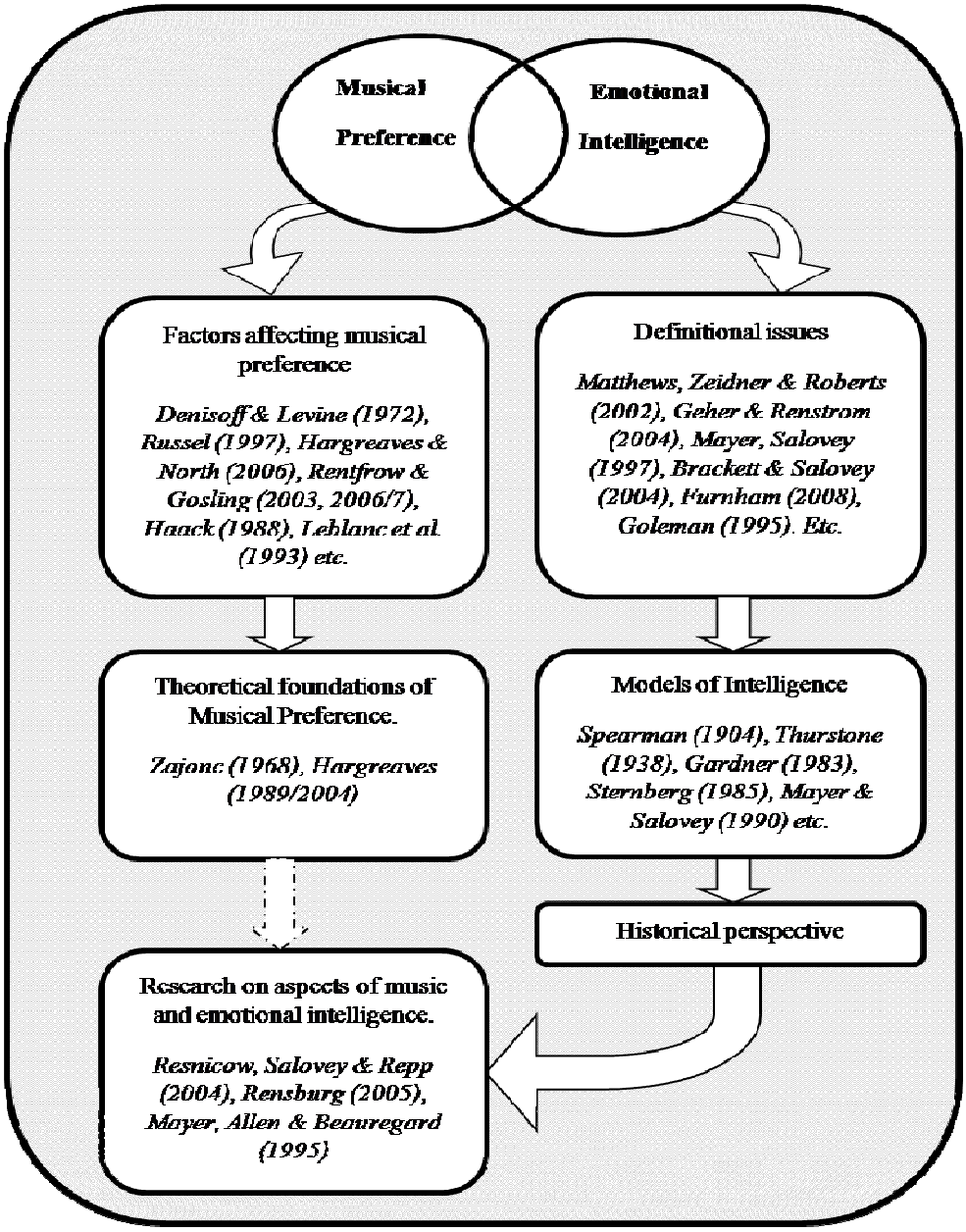

Figure 5: A map of the organizational structure of the literature review

Musical Preference

> Music, live as well as recorded, is ubiquitous, and it follows that the potential range and diversity of the musical experience of any individual is vast. People do not listen in a vacuum; they choose different types of music to suit different activities and environments, and actively or passively 'listen' with varying degrees of attentiveness (Hargreaves, 2001. p.105).

Hargreaves admits in the foregoing statement, that although different kinds of music exist pari passu, people, depending on the purpose, choose different types of music and assign different levels of attention to different types of music. To assume that people will pay more attention to types of music from which they derive maximum enjoyment and which complements, not just the activities they perform, but also their mood and emotions, therefore, seems to be a logical syllogism. There is, more so, empirical support in the work of Zillmann and Gan (1997) who opine that, "the appetite for music, when satisfied by free choice, varies considerably across experiential states and emotions." This goes to support the fact that although people hear music daily, the impact such music has on them is lesser than if the people made conscious efforts to select what they prefer to listen to. In such a case, the level of attention given to the listening will be heightened and so will the emergent emotion(s).

A number of factors that affect the types of music people prefer or dislike (in exercising their free choice) have been identified by different scholars (e.g.

Denisoff and Levine, 1972; Russell, 1997; Olsson, 1997; Gan, 1997; O'Neill, 1997; Hargreaves, North & Tarrant, 2006). Some of these factors are discussed in the subsequent paragraphs. A theoretical basis for musical preference is discussed afterwards.

Factors that affect Musical Preference

Like achievement, the choice of musical instrument, and many other music-human related variables, preference for music is influenced by a number of factors. The common factors identified by different scholars include (but may not be limited to): age (Denisoff & Levine, 1972; Russell, 1997), gender (Olsson, 1997; Gan, 1997; O'Neill, 1997), socio-cultural background (North & Hargreaves, 1997), specific characteristics of the music like complexity, tempo and style (Hargreaves, North & Tarrant, 2006), the listening situation (North, Hargreaves & O'Neill, 2000; Kemp, 1997), level of musical training (Hargreaves, North & Tarrant, 2006), situational and social factors or social class (Abeles, Hoffer & Klotman, 1995).

Before proceeding to discuss some of these factors, it is significant to identify the broader frameworks within which they are discussed. Hargreaves, North and Tarrant (2006) propose a three-tier framework that any explanation of taste and preference must take into account. This framework, as they identified, happen to be the "characteristics of the three main components of any listening situation, namely the *person* (e.g., age, gender, cultural group, musical training), the *music* (e.g., structure, style, complexity, familiarity), and the *listening*

situation (e.g., work, leisure, entertainment situations, presence/absence of others)" (p. 135). Figure four summarizes the tenets of this three-tier framework.

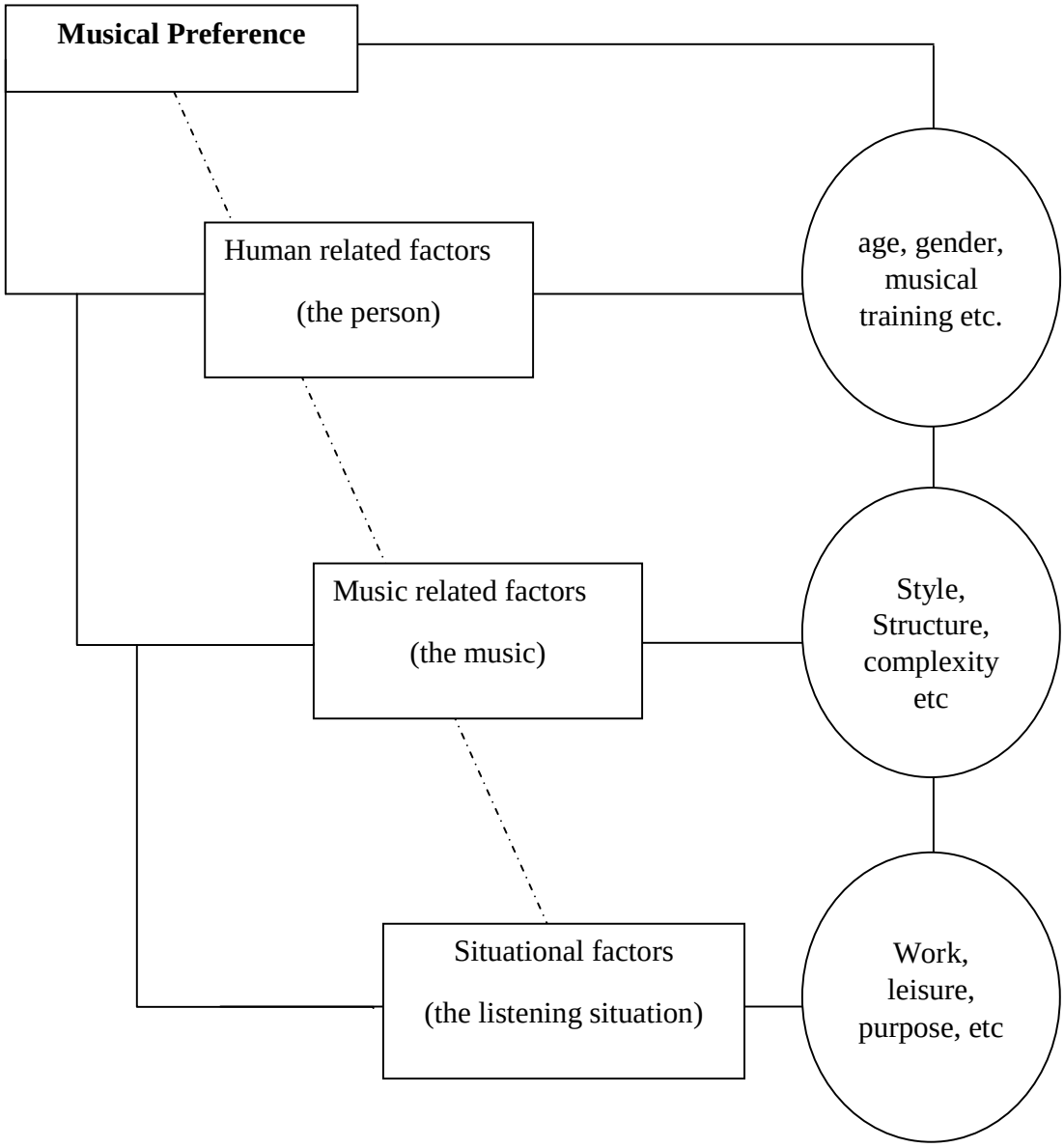

Figure 6: Framework for interpreting musical preference factors

With the tenets in the above framework in mind, some of the factors that affect the preference of individuals for particular kinds of music are given more attention and discussed below.

Age and musical preference

Age is one major factor that accounts for many behavioral differences among people. A number of developmental, behavioral and stage and phase theorists (Hargreaves,1986; Piaget,1969; Campbell & Scott-Kasner, 2002) have put forth different characteristics and abilities that are exhibited and can be performed respectively, by virtue of a person's age. These natural characteristics which accompany age undoubtedly influence the likes and dislikes of people who fall into perceptibly differing age groups.

In relation to musical preferences, Denisoff and Levine (1972) found that, taste for popular music in general was stronger, and tastes for other music types (especially classical) was weaker among teenagers than among older age groups. A possible logical explanation to this observation could be that, compared to classical music, popular music incites responses that make listeners move, dance, clap or shout (which are typical tendencies of people in the teen ages). Classical music is comparably more relaxed and requires deeper intellectual processing (which typically reflects adulthood rather than teenagers). Fox and Wince (1975) add that, the teenage group shows a stronger preference for current popular hits. Furthermore, Peterson and DiMaggio (1975, cited in Russell, 1997) reported that country music fans were concentrated in the 25-49 age range, with few teenagers

and over-50s. Tolhurst et al. (1984) also found that people in age range 20-30 preferred soft rock and country music over light classical and classical music, while this preference was reversed among the over-40s (in Russel, 1997). These series of studies mentioned above indicate, that irrespective of background or experience, the musical taste (preference) of people can be distinguished using age as a major criterion. The findings in the studies show great difference in the musical preference of (mostly) adolescents and adults.

On their part, Hargreaves and North (1997) calculated the mean number of musical styles as well as the mean liking for the musical styles named by people in five different age groups (1-10 years, 11-15 years, 18-24 years, 25-49 years, 50 and above). They categorized the musical styles that were named into three, namely: rock and pop styles, jazz styles and classical styles. Of these, the 18-24 year group mentioned the most number of musical styles, followed by the 25-49 years group, the 14-15 years group, the 50+ years group and finally the 9-10 years group. As far as the liking of these categories of music were concerned, rock and pop was highest among the 1-10 years group, followed in descending order by the 11-15 years, 18-24 years, 25-49 years and finally 50+ years. For the classical styles, the liking (from the highest to the lowest) was 18-24 years, 50+ years, 25-49 years, 11-15 years and finally, 1-10 years. The jazz styles took a different turn. It was more favored by the 50+ years, followed by the 18-24 years, 25-49 years, 11-15 years and finally, 1-10 years.

These rankings seem to complement other studies (Coleman, 1961; Frith, 1983; Zillmann & Gan, 1997) in positing that popular music (rock, pop, country,

rap, etc) is generally preferred by younger (adolescents and young adults) rather than older people. In a study of more than 2000 adolescents, North, Hargreaves and O'Neill (2000) identify some reasons why the preference for popular music is high among adolescents. They indicated that teens listen to popular music

> in order to enjoy the music; to be creative/use their imagination; to relieve boredom; to help get through difficult times; to be trendy cool; to relieve tension/stress; to create an image for him/herself; to please friends; and to reduce loneliness (p.263 cited in Dunn, 2010).

Some of these reasons are buttressed by Schubert and McPherson (2006) who aver that "as the child moves to adolescence, music can become the most profoundly important non-human stimulation they can receive, providing meaning that appears not so much to be tied to the intrinsic value of the music, but to the way they use the music to develop their sense of identity and social bonding" (p. 207). It follows therefore, that music is such a great deal for adolescents, playing multiple roles in their lives.

The opposite of the preference for popular music is true for classical and jazz styles. As noted by Hargreaves, North and Torrent (2006), "increasing age could well be associated with a preference for increasingly complex music". Complex (and reflective) music, according to Rentfrow and Gosling (2003) include: classical, blues, folk and jazz. Thus, as adolescents mature into adulthood, they also mature into the appreciation of seemingly 'complex' music. This conclusion is however, very interesting and paradoxical in that, it is the same

young people who become old over time. As certain as this claim is, it exposes two major conflicting and debatable dimensions about preference. On one hand, the conclusion makes it also clear that preference is not a static entity. It indeed, changes over time (over exposure) with age and experience (interaction with different environmental factors). This is exactly what Hargreaves, North and Tarrant (2006) explain when they avow "… individuals' immediate responses to new stimuli are shaped by their longer-term taste patterns, but significant new responses can correspondingly change those longer-term patterns, as the system is in a constant state of change and evolution" (p. 137). Thus, according to this view, the individual's preference for a particular kind of music is only true within a given period of time and changes afterwards.

On the other hand, however, Russell (1997) believes that "musical tastes formed in youth tend to persist into and across the adult years, especially in the case of popular music. He draws evidence from the studies of Holbrook and Schindler (1989) who used a sample of people aged 16-86 and found out that, people's most preferred songs from among those presented were those which had been hits when the respondents were in their late adolescence or early adulthood (mostly around when respondents were about 23 years old). These findings have actually been replicated in follow-up studies (e.g., Holbrook, 1995; North & Hargreaves, 1995). Russell thus concludes that, the "persistence of tastes, coupled with the changes which take place over time in the popularity of musical styles and artists among the young, results in each generation having its own defining music and performers" (p.146). Thus, contrary to the point that was

stated earlier that musical preference is in a constant state of flux, these findings prove otherwise. They indicate, rather, that a liking for a particular kind of music is relatively static once it is developed. It is against this backdrop that Hargreaves, North and Tarrant (2006) again conclude that "today's music will always be evaluated by yesterday's criteria". Stipp (1990) adds to this with the argument that, "the connection between age and popular music tastes is so strong that a person's age can be reliably predicted from a knowledge of his or her favorable 'golden oldies' (in Russell, 1997).

Russell also attempts to explain why classical musical styles are mostly preferred by adults rather than teenagers. He argues that a taste for classical music may be something which tends to develop at later ages, or with more prolonged exposure to this kind of music. The point of emphasis in this write-up, however, is not to belabor the possible reasons of differences in the musical preference of people with different ages, but to note that age offers a strong parameter for distinguishing between the musical preferences of people. In fact, the literature on factors that affect musical preference is replete with references to age. Table two (next page) provides a summary of empirical studies of age differences in stylistic musical preferences from 1940 to 2003. The table was adapted from Hargreaves, North and Tarrant (2006). The results in the table buttress the foregoing discussion on age and musical preferences.

Table 2: Summary of empirical studies of age differences in stylistic preference.

Researcher	Participants	Music	Results
Rubin-Rabson (1940)	70 adults 20 – 70 y	24 art music orchestral works 1750-1925: 'classic', 'transitional', 'modern' periods	'classic' and 'modern' preference decreased with age
Fisher (1951)	251 grades 6, 9, 10, and college students	art music of differing levels of formality	grade 6 preferred Gould (least formal) to Haydn (most), college students vice versa
Keston & Pinto (1955)	202 college students at 3 age levels	'serious classical', 'popular classical', 'dinner', 'popular'	r =0.38 between age and preference for 'good' music
Rogers (1957)	635 grades 4, 7, 9, 12	'serious classical', 'popular classical', 'dinner', 'popular'	preference for classical decreased with age, diversity of preferences decreased between grades 4 and 12
Baumann (1960)	1410 12 – 20 y	range of styles within 'art music', 'popular', 'traditional'.	popular preference decreased with age, classical preference increased with age.

Table 2 continued

Taylor (1969)	800 8 – 11 y	Paired excerpts of art music by composers from 6 historical periods	preference for twentieth century composers decreased with age, for later baroque composers increased with age
Meadows (1970)	982 grade 7 college students	30 excerpts from 10 ‘popular’ and ‘art music’	art music preference increased with age
Greer *et al*. (1974)	134 grades K – 6	styles ‘top 20 rock’ and ‘non-rock’ styles, operant listening task	older Ps preferred ‘rock’, becoming significant at grade 2.
Bragg & Crozier (1974)	12 at each of 8-9, 14-15, 20+ y	random electronic stimuli at 6 complexity levels: studies I, II, III with different preference tasks	I older Ps preferred more complex on verbal rating scale task: II no age effect on paired comparison task: III no age effect on untimed task.
Eisentein (1979)	64 grades 2-6	Webern tone rows	younger Ps listened for longer than older
Geringer (1982)	40 x grades 5/6, college music and non-music majors	popular and art music, operant listening task	College music majors preferred art music, other two groups preferred popular

Table 2 continued

May (1985)	577 grades 1-3	24 pieces representing 9 generic styles including art music, popular music, non-Western music	overall preference decreased with age, decline for 'rock' and 'country' styles less than for other styles
Hargreaves and Castell (1987)	96, 16 in each of grades K, 2, 4, 6, 9, college	familiar/unfamiliar real melodies, near/far approximations to music	preference for approximations decreased with age; preference for real melodies suggest inverted U preference function with age
Haack (1988)	108 25-54 y	pop song titles 1945-1982: selection of 'top 10 of all time'	preference for music popular in mid-20s
LeBlanc *et al.* (1988)	926 grades 3,5,7,9,10,11,12, college	24 trad jazz pieces at different tempo levels	Preferences summed over tempo levels: U-shaped curve with age
LeBlanc *et. al.*(1993)	2262 6 – 91 y	'art music', trad jazz, rock	preference decreased in adolescence, increased in adulthood, decreased in old age
Hargreaves *et al.*	278 grades 7, 11	ratings of 12 style category labels	overall liking decreased with age,

Table 2 continued

(1995)			especially for ‘serious’ styles
North & Hargreaves (1995)	275 9-78 y	nominations of 30 most eminent pop artists 1955-94	general preference for artists from late adolescence/early adulthood: Beatles/Elvis nominated by all
Hargreaves & North (1999)	275 9-78 y	ratings of liking for self-nominated styles	liking for rock/pop styles decreased with age, for classical increased with age: ‘crossover’ in middle age?
Gembris & Schellenberg (2003)	591 grades K-6	popular, classical, avant garde, ethnic	overall preference decreased with age: grade 1 most positive, grade 6 most negative, overall preference for pop

Adapted from Hargreaves, North and Tarrant (2006)

In McPherson, G. E. (Ed.). (2006). *The child as musician: a handbook of musical development*.

New York, Oxford University Press. p. 145-146

In sum, the literature reviewed in connection to age and musical preference reveals two contrasting but co-existing features of musical preference, namely: that musical preference is a fairly constant entity that stays relatively unchanged once it is developed (mostly in adolescence and early adulthood) and that musical preference is not stable but changes over time. The review has also revealed that, on the whole, people in perceptibly differing age groups have a liking for perceptibly different musical genres.

Whereas there is a tilt of many adults towards classical and jazz musical styles, for example, the trend is more towards popular music among younger adults and adolescents. The trend is however, not very static among younger children as to their preferred choice of music because they are still 'open-eared' and have not had adequate exposure to different genres of different musical syntax. They have also not acquired enough experience on the structure of most music with which to judge the music they hear and make choices.

This is definitely not to say that when children are given options, they cannot tell what they prefer; just that, their preferences are not as rigidly fixed to particular genres as it is in the case of adolescents and adults.

The findings in this review, indeed has far reaching consequences as far as the purpose of this current study is concerned. One of the major questions that I seek to answer in this study is to find out if there is a difference in the emotional intelligence of different people who prefer different kinds of music. The literature reviewed on age and preference has given a pointer that, as long as the sampling considers people in different age groups, they are likely to have a preference for

different kinds of music. In effect, the review on age as a factor of musical preference is very essential in this study because it has given a criterion for classifying people as different (belonging to different age groups), informed the sampling and given a framework for interpreting the data that emerge from the administration of the research instruments.

Gender and musical preference

O'Neill (1997) acknowledges that "there are striking gender differences in boys' and girls' preferences for music and musical activities." Perhaps the differences stem from the fact that, males and females have varying degrees of readiness to engage in musical activities. A number of studies (Crowther & Durkin, 1982; Otchere, 2010) have demonstrated that girls are significantly more involved in singing in a choir, playing musical instruments and attending more concerts on the average than boys. This is corroborated by Olsson (1997) who concludes from the studies of Bjurstrom and Wennall (1991) that, "boys mainly played music of various rock genres with particular interest in heavy metal and punk, in accordance with their listening preferences. Girls were active in choirs and in playing traditional instruments like the piano or the flute, and showed a preference for rock ballads and mainstream music" (p.292).

Reviewing the works of Abeles (1980), Christenson and Peterson (1988), Finnas (1989) and Russell (1997) affirm that males are more likely than females to prefer music described as 'hard' or 'tough', while females are more likely to prefer music which is 'softer' and more romantic. Whereas hard rock,

progressive rock, heavy rock, rock 'n' roll, heavy metal, and sometimes, jazz are more aligned with males, females are more likely to have stronger preferences for mainstream pop, pop hits, folk, classical, and for dance-oriented music such as disco (Russell, 1997, Olsson, 1997). In the words of Zillmann and Gan (1997), "…female adolescents, compared to male adolescents, are more strongly drawn to soft, danceable music and pay more attention to lyrics, especially those pertaining to romance" (p.177).

This difference in the gender preference for music may have psychological underpinnings. Boys, on one hand, are more known to be better in gross motor skills and in activities requiring force and strength. Girls, on the other hand, are generally good in fine motor skills. To this, Agak (2002) cites a number of studies (Koenigsknecht & Friedman, 1976; Bank, 1987; Nicholson, 1993: 93) as evidence. She presents different areas in which one gender is known to outdo the other. For example, girls are known to develop speech at an earlier age than boys and they are superior to boys in the linguistic skills of reading, writing, spelling and grammar. Boys, however, have better verbal reasoning. It follows logically therefore, that girls will prefer songs which are less vigorous in nature than boys.

In offering another explanation to the differences in the preference of music between the sexes, Frith (1983, cited in Russell, 1997) focuses on the differing gender roles as a basis. He explored the aspirations of the genders among British working class teenagers and found out that, the career opportunities for girls were more limited, so that their aspirations tended to focus more on finding a husband and establishing a home. This, he concludes, explains their

(girls') greater orientation to softer and more romantic 'love song' music, and to dance music, which provided a social context for meeting potential marriage partners. Upon this premise, the differences in musical preferences of the genders will be less marked in social groups where gender differences in gender roles of men and women are less distinct.

In sum, the literature on gender and musical preference points to a noticeable distinction in the musical preference of males and females. The emerging explanations from the studies reviewed indicate that, the difference in the musical preferences of males and females are predominantly psycho-physiological and socio-cultural. Also, males and females appear to have different reasons for their engagement in music, and these reasons influence their preferences. The figure on page 55 (figure 7) provides a pictorial summary of the factors that influence males and females in their preferences for different musical types.

In relation to the current study, the findings on the gender differences in musical preferences are very beneficial. This study aims at finding out if there is a difference in the emotional intelligence of different people who have different musical preferences. Gender offers a distinct criterion for categorizing people as 'different' (by virtue of whether one is a male or female). On one side of the coin, the review has summoned adequate evidence in support of the claim that males and females generally have different musical preferences.

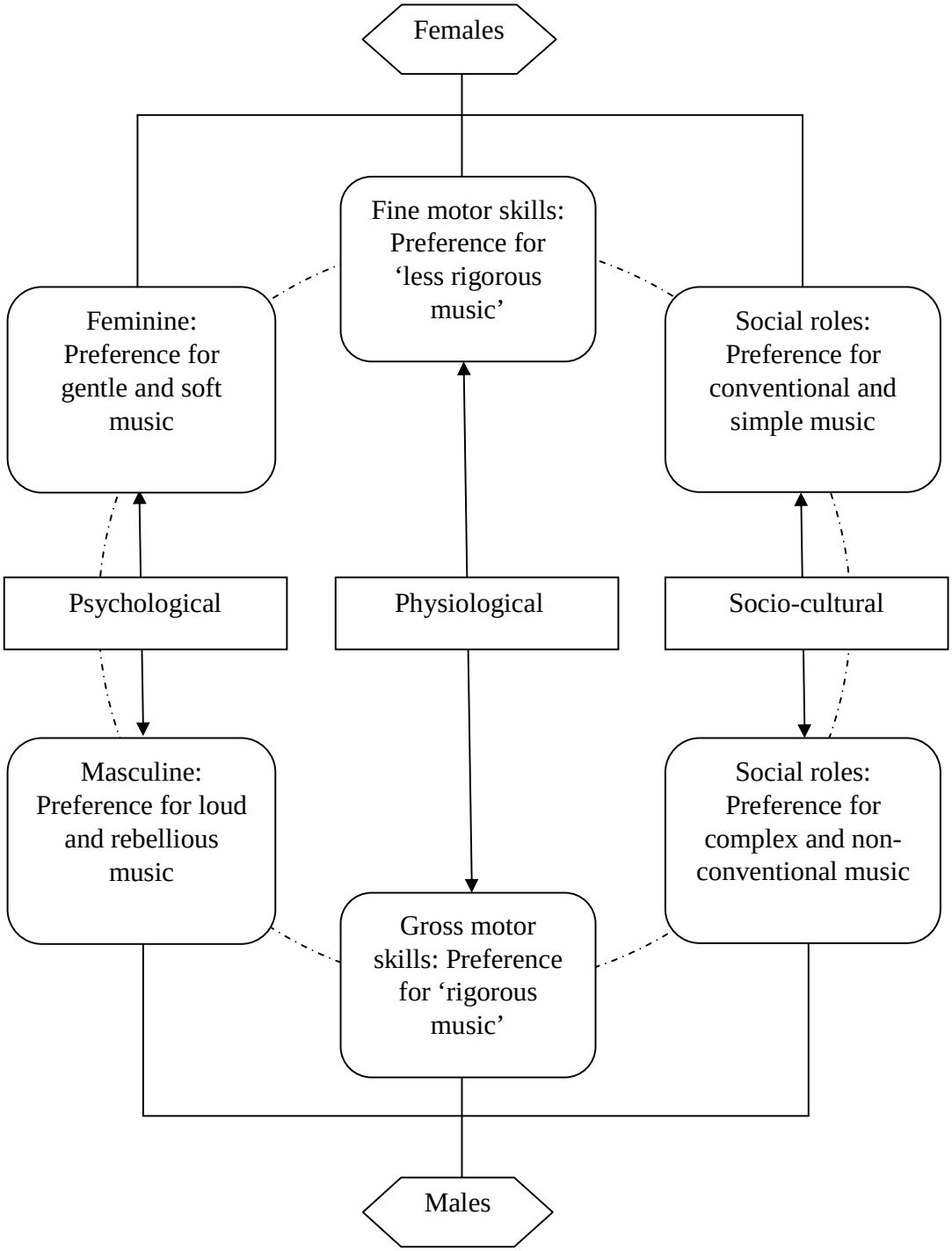

Figure 7: Pictorial summary of factors that influence gender preferences in music

On the other side of the coin, Resnicow, Salovey and Repp (2004) also found a difference (though not significant) in the emotional intelligence of men and women in their study. They noticed that "women tended to have higher scores than men (M = 114.2 vs. 103.7), but the difference did not reach significance, £ (22) = 1.57, p < .14, because the highest score was obtained by a man. The next 11 rank-ordered scores were all obtained by women" (p. 150). Among the primary concerns of this study is to find out if these findings are related (if the difference in the emotional intelligence of males and females is related in any way to the difference in their musical preferences). Thus this review offers, yet, another fundamental parameter for interpreting the scores that will emerge from the administration of the research instruments.

Ethnic and cultural factors

Ethnic and cultural factors form another dimension in the discussion of musical preferences. "The existence of distinctive national, cultural, and ethnic group musics suggest that musical tastes tend to segregate along national, cultural, and ethnic lines" (Russell, 1997). This is particularly so in the light of the familiarity theories that posit musical preference as a function of adequate exposure. People within a particular national, cultural or ethnic domain are likely to develop musical tastes that revolve around the common music(s) of the designated area; not only because that is what they may be adequately exposed to, but also because such music(s) act as a kind of identification. This is what Abeles, Hoffer and Klotman (1995) mean when they quoted that "music is in a

sense a summation activity for the expression of values, a means whereby the heart of the psychology of a culture is exposed" (p. 124).

In Ghana, for example, every major ethnic group can be associated with at least a particular style of music. Amuah (2010) identifies a number of these musical types among some ethnic groups in Ghana. He writes:

> Among the Akans, for instance, musical types like fontomfrom, mpintin, adowa, asaadua, sikyi, dansuom, ntahara, asafo, adzewa, apatampa, adakam, kundum, to mention a few, are performed. In the repertoire of Ewe musical culture are atsiagbekor, agbadza, adevu, avihao, boboobo, kenka, yeve and Akplu's music. Among the Dagbon are musical types like damba, takai, bambaya, to mention a few. This list (from three out of 25 ethnic groups) is indicative of the magnitude of musical types that exist in Ghana (p. 221).

Such *musics* (as mentioned above) are not only meant for the immediate use to which they are put, but also function as a form of identification (as already indicated). They are learned as part of the socialization and enculturation process of the child as long as one grows up in the community. Nketia (1974) describes how ethnic related music is passed on from mother to child by asserting that:

> "the African mother sings to her child and introduces him to many aspects of his music right from the cradle. She trains the child to become aware of rhythm and movement

> by rocking him to music, by singing to him in nonsense syllables imitative of drum rhythms."

In this way, the child automatically grows up to appreciate the music that is prevalent in his/her society. Such *musics* may also be associated with activities within the community which come to mind when the songs are heard (even in isolation). The kind of affect that will be generated towards music that one relates with, will be quite different from other kinds of music to which a direct connection is absent. This explains the ethnic and cultural dimension as a factor affecting musical preference.

In a study by Denisoff and Levine (1972), the most preferred music of black college population were soul (Motown) and jazz, while for whites it was folk and rock. In another study that tested 16 different musical genres, Dixon (1982) corroborated the foregoing finding from Denisoff and Levine that, whereas soul was the most popular music among blacks, it was only the twelfth most popular genre among whites. The most popular of the whites, soft folk/ country rock, was only the ninth most popular with blacks. Russell (1997) affirms that, in Dixon's study, the "ethnic differences were evident even after the partialling out of any effects of age, education, and musical involvement." This shows clearly, the ethnic influence on musical preference. On their part, Peterson and DiMaggio (1975) stress the overwhelmingly white American taste public for country music (in Russell, 1997).

All these studies clearly provide evidence that a person's ethnic and cultural background is a crucial point of note in talking about the person's musical

preference. It is the prevailing music in the individual's culture that he/she is exposed to, in the first place, and which provides a basis for judging other kinds of music that the individual encounters. Of course, one cannot like music that he/she is practically oblivious of. It goes without saying, therefore, that ethnic and cultural factors indeed influence the preference that individuals have for music. In explaining the social identity theory (SIT) of Tajfel and Turner (1979) which seems to provide a strong basis for the effect of ethnic and cultural background on musical preference, Hargreaves, North and Tarrant (2006) mention "that expressions of musical preference … seem to be guided by *group norms* that can be drawn upon in contexts in which social identity needs are salient" (p. 147-8). An example of a cultural specific ethnic-bound group norm is provided by Abeles, Hoffer, and Klotman (1995) who identify that "concert audiences in Europe and America are expected to listen silently and to be intellectually analytical, while in sub-saharan Africa, everyone is expected to clap, dance, or shout along in a musical event" (p. 125). They continue to claim that "to Africans, music is an integral part of their daily lives, and they deal with it in an active, participatory way" (p. 125). This differentiation in ethnic and cultural levels of musical engagement undoubtedly influences the preferences of people in different ethnic settings.

Even within Ghana alone, the musical styles of various ethnic groups have distinctive features that make them unique to their respective cultures. This is so strong that if a person identifies any of the traditional musical styles as a preference, one can most likely predict the person's ethnic or cultural affiliation.

Of course, this does not imply that a person from one ethnic group cannot have a preference for music associated with another ethnic group.

Like the review on age and gender, ethnic and cultural influences on musical preference are of great importance to satisfying the purpose of this study. The review makes it clear that, ethnic and cultural factors affect the preferences of people as far as music is concerned. In a multi-ethnic society like Ghana, it needs no saying that such considerations are necessary. At the undergraduate level, people from different ethnic backgrounds are enrolled. Ethnic and cultural background will, thus, form a major criterion for discussing the preferences that the sample report. As far as the research on ethnic and cultural factors on musical preference is true, then I am sure to have varied musical preferences. This will have a great impact on the analysis of the emergent data.

Socio-economic status (social class) and musical preference

Social class is one factor which has received considerable attention by scholars who do research in the area of musical preference. Perhaps, the work of Lloyd Warner (Warner, 1960) who devised a rating scheme that considers occupation, income, education, and place of residence as criteria for determining the social class of people incited many scholars to follow suit. Different scholars (depending on their purpose and criteria) have put people into different social classes. Whereas some stress the educational level of people in classifying them, others focus on the income. For the sake of reviewing literature in relation to musical preference and socio-economic status, only two broad social classes are

mentioned: upper-class and lower-class. Those who fall in the middle of these extremes may reveal characteristics similar to either of the two groups mentioned. (For reviews of the characteristics of people who fall within these classes, see Abeles, Hoffer & Klotman, 1995).

In a large measure, researchers in music preference seem to agree on some findings peculiar to people in different social classes. Many studies (Gans, 1974; DiMaggio & Useem, 1978; Murdock & McCron, 1973; Tanner, 1981; Peterson & DiMaggio, 1975) have reported the high patronage of high class people in classical music. Among the reasons assigned for this phenomenon is that, high-class people have enough money to be able to afford attending expensive classical musical concerts. Again, most of them have had a high form of education and are likely to have received some form of musical training to enable them appreciate classical music better. Furthermore, some assign the reason to the ability of people in high classes to defer their immediate gratification (Schneider & Lysgaard, 1953). They can temporarily suspend or postpone (particularly primary biological or physiological) pleasures until some other specific aims are achieved. Granted this is true, then classical music is the most match for this characteristic, as it is difficult to predict (compared to other genres of music) the progressions until the song has finally ended.

It is interesting to note that, it is this uncertainty and suspense in classical music which fulfils the deferred gratification pattern among people of high classes. This is what Meyer's (1956) theory of profound and feelingful engagement with music espouses. According to him, there are certain elements

within the music, such as a change of melodic line or rhythm that create expectations about the future development of the music. The expectation the listener has about the further course of musical events is a determinant for the experience of `musical emotions'. Music arouses expectations, which may or not be directly and immediately satisfied. He states: "...the greater the build-up of suspense of tension, the greater the emotional release upon resolution..." (Meyer, 1956, p.28). In his extensive review of Mayer's take on the whole musical experience, Elliot (1992) explains the foregoing in clearer terms. He writes, "a listener with no experience in a given musical style – a listener with no musical expectations – is unlikely to have a meaningful experience of any work in that particular style" (p. 114). The music arouses tendencies and this fulfils the conditions according to the arousal of affect. The role of emotion in this process is complex.

Also, the 'comfort' factor distinguishes people in different classes on their preference for classical music. This has to do with a set of behaviors and general culture that traditionally accompany concert going audience. Abeles, Hoffer and Klotman (1995) maintain that, "concert audiences in Europe and America are expected to listen silently and to be intellectually analytical…"(p. 129-30). This is an expectation that concert going audience must fulfill. Ability to get and wear the prescribed attire, hold on to emotions until a piece has ended before you clap or stand, or more generally, ability to feel comfortable in the classical music concert hall are all expectations associated with a liking for (live performance of) classical music.

Considering the other side, “a taste for popular music is somewhat more common among the lower socio-economic groups” (Russell, 1997). The reverse of the same reasons that influence the upper-class people to prefer classical music (accessibility, fulfilled gratification, less strict and controlled audience expectation, comfortability, etc) may account for the dislike and liking of lower-class people for classical and popular musical styles respectively. In these days however (especially in Ghana), social classes are less marked and not easily identifiable. For this reason, social class as a factor affecting musical preference will not be dwelt upon in the sampling, analysis or interpretation of data.

So far, the factors on musical preference discussed (age, gender, ethnicity, social class) all fall under the ‘human related’ (the person) dimension of the three-tier framework (see figure 4) which underpins the interpretation of the preference factors in this study. I now discuss a factor that is related to the ‘characteristics of the music’ dimension.

Specific characteristics of music

It needs no saying that different kinds of music possess different characteristics. It is the peculiar characteristics inherent in different kinds of music that help in categorizing and putting them into respective genres. Irrespective of genre, researchers (North & Hargreaves, 1996b; Kellaris, 1992; Berlyne, 1960) seem to hold a common view on the influence of the level of complexity of music on the musical preference of people. Thus North and

Hargreaves (1996b) declare that the "everyday musical preferences seem to be further mediated by complexity, tempo, and style."

As relative as it might be, complexity of music may stem from the nature and organization of any or the expressive combination of the musical elements: melody, rhythm, tempo, dynamics, texture, mode, scale patterns, timbre, tone color and the like. Complexity may also be inter or intra genre. For example, many people who report a liking for classical music may only be admirers of Bach, Handel, Mozart, Beethoven or more generally, of the tonal classical style and may have no interest, whatsoever in atonal or experimental classics, because of the level of complexity and the peculiar style (see Schellenberg, 2006).

The complexity of a piece of music is however, rather subjective, and depends largely on the perceiver's familiarity of the said musical genre or the listener's level of musical training. Therefore, a musical piece which may seem extremely complex for someone (untrained in music or unfamiliar to the particular musical idioms), may be quite simple for another person (who has musical training or who is more familiar to the particular musical idiom). In the words of Hargreaves (1986/2004), "the subjective complexity of a given piece is a function both of its objective complexity, and of the familiarity of the listener with respect to that piece" (p.116). He goes on to explain that, "we would expect it to be very low in the case of a sophisticated musician listening to a simple piece, and very high in the case of a non-musician listening to a very complex work."

According to Berlyne, Ogilvie and Parham (1968), the amount of information conveyed by a stimulus is a function of its subjective complexity. The implication of this for musical preference is that, people prefer music which is optimally complex. As a premise from Berlyne's (1971) theory, people prefer moderate, rather than extreme levels of arousal. In the same vein, Davies (1978) argues that people prefer music that provides them with information, that is, "which reduces their uncertainty about subsequent events" (in Hargreaves,1986/2004). He goes on to explain that, extremely unfamiliar music does not reduce uncertainty, since the events within it are totally unpredictable to the listener; and very familiar music does not do so because it contains very little new information.

Thus, as far as preference for music is concerned, people expect to get some challenge (which excites and motivates them to listen further to the music), but this challenge should not (depending on their musical training) exceed their expectation and hinder their understanding of the music. This is the extent to which the complexity of music becomes a factor that affects the musical preference of people.

In sum, the literature on factors that affect musical preference clearly delineates the specific characteristics of different musical genres as a major factor of musical preference. There is a convergence on the conviction that, people who have had some form of musical training or education seem to have a preference for otherwise 'complex music'.

Referring back to Gosling and Rentfrow's (2003) classification of musical genres; classical, blues, folk and jazz are examples of the comparably complex musical genres. In this current study, an effort is made to sample participants, based on this review, from both those who have taken courses in music and those who have not. All things being equal, such participants should express preference for different musical genres. This in turn, will help achieve the purpose of the study.

Other factors on musical preference

As stated from the outset of the review on musical preference, there are quite a number of factors that affect the preferences people have for music. However, not all the factors are discussed into detail in this study. There are two reasons behind this decision: first because the ones that are reviewed seem to have a direct bearing on the purpose of this current study. They inform the research methods employed in this study and provide palpable basis for analyzing the emergent data. The second reason is that, the factors that are not given detailed attention in this current study (labeled 'other' in this study), for example: individual factors (temperaments, uniqueness, use to which the music is put, prejudices. etc), situational or contextual factors, occupation, peer group influence, home environment and media are in a way, intertwined with the major factors that have already been discussed. The literature on situational or contextual factors, as well as home environment for example, is not too different from the discussions on how social class (socio-economic status) affects the

preference for particular kinds of music. Peer pressure also has a direct bearing with the review on age and musical preference. This is why these factors have been put together and tagged 'other' factors in this study. For reviews of these factors however, see Russell (2004; Zillmann & Gan, 2004, Hargreaves, North & Tarrant, 2006).

Summary of factors that influence musical preference

In the foregoing paragraphs, a number of factors which scholars have identified to influence musical preference have been reviewed. The factors addressed in this study are: age, gender, ethnic and cultural factors, socio-economic status (social class), peculiar characteristics of music (relative complexity) and others (individual factors, situational factors, media influence, peer group pressure and home environment).

The diagram next-page (figure 8) gives a visual representation of the factors reviewed in this study that may affect the preference of individuals for a particular kind of music. It can be observed from the diagram, that a person's eventual musical preference is the product of many (mostly interrelated) factors. For example, if a male of 18 years prefers rock and pop to classical music, it can be explained both in terms of age and in terms of gender. The literature is consistent with either of these factors. This is why the arrows in the diagram that extend from the individual factors are curved (it is not a straight-forward, singular contributor to the individual's overall musical preference).

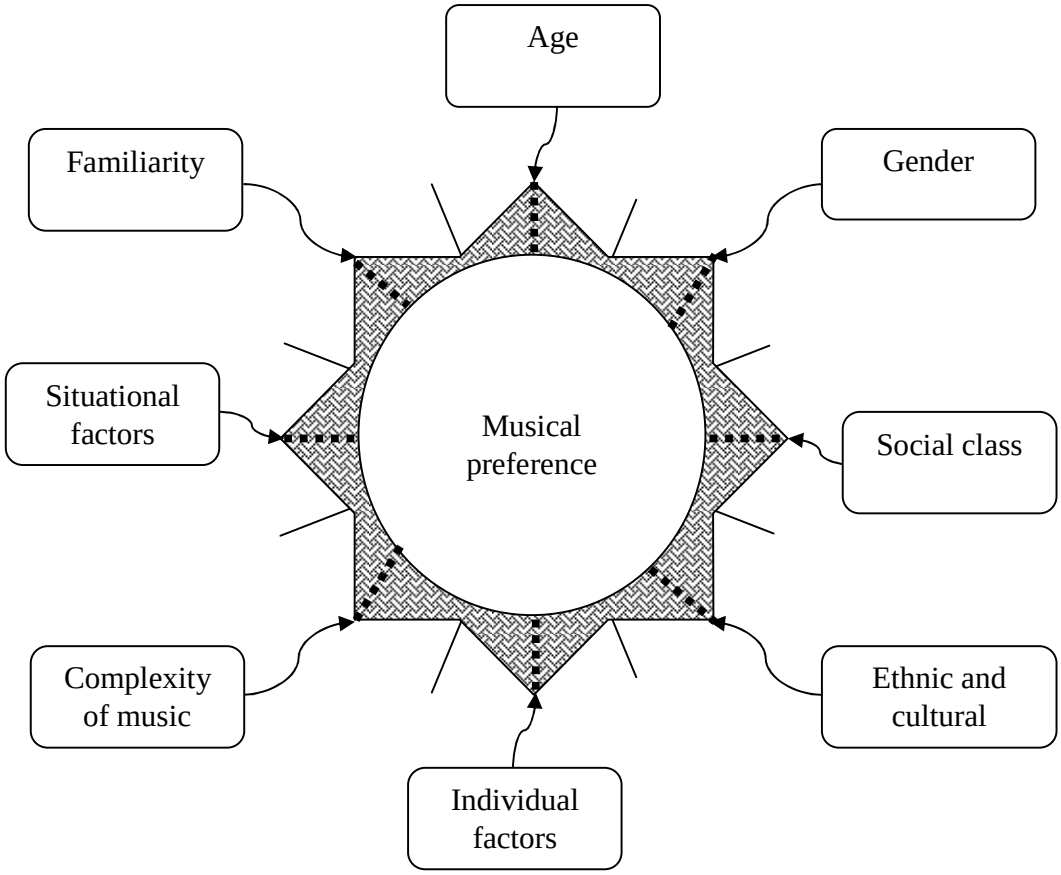

Figure 8: Factors that affect musical preference

The line from the arrows change to broken lines when they touch the 8-point star before leading on to the actual manifest preference point (the circle). In the 8-point star, the strength of the individual factors reduces and blends or diffuses with other factors before eventually; they produce the musical preference of the person. There is an interplay of differing factors in the shaded star that ultimately affects the preference of the individual for a particular kind of music.

Perhaps the multiplicity of the factors that affect an individual's preference for music is also the reason why people may prefer different types of

music simultaneously. It is not uncommon to come across people who, irrespective of their background or education, find it extremely difficult to single out a particular kind of music as their most preferred kind of music.

It is significant to note however, that although two or more factors may together contribute to the musical preference of the individual, one of the factors is always dominant over other factors at any point in time, and this varies from person to person. The short unlabeled lines that extend from the corners of the star indicate that the list of factors (shown in the diagram) that affect musical preference is not exhaustive.

Theoretical foundations of musical preference

"It seems clear that novelty, or unfamiliarity, is an important potential source of musical dislikes…" (Hargreaves, 1989/2004). There is no way a person will like what is unknown or what he or she is practically oblivious of. That means that, all the factors discussed above that affect musical preference are secondary and may come to play only when the individual is adequately familiar to the music in question. This issue of familiarity and liking is what is explained in the *mere exposure theory* (Zajonc, 1968; Sawyer, 1981; Miller, 1976; Kunst-Wilson & Zajonc, 1980).

In this theory, Zajonc (1968) affirms that, the more exposure we have to a stimulus, the more we will tend to like it. Familiarity breeds liking more than contempt. Things grow on us and we acquire tastes for things over time and

repeated exposure. We can get to like most things, given time. When we make choices, the familiar is often chosen over the unfamiliar. The theory further expounds a negative possible effect that, exposure can be overdone. After a certain number of exposures we will ignore the message. If the exposures continue, we will get irritated and 'take revenge' by assuming negative responses to the message.

The *mere exposure theory* finds support in the *social judgment theory* (Sherif & Sherif, 1967) and the *anchoring and adjustment heuristic theory* (Kahneman & Tversky, 1973), which both subscribe to the view that, in any decision making process, a *familiar* stimulus is most likely to be chosen (as an anchor) over an unfamiliar one. "We tend to base estimates and decisions on known 'anchors' or familiar positions, with an adjustment relative to this start point. We are better at *relative* thinking than absolute thinking" (Kahneman & Tversky, 1973). These theories (mere exposure, social judgment, anchoring and adjustment heuristic) together, help to explain the choices that people make. They do not refer particularly to any stimulus; the liking can be for people, events, pets, places, or even for 'unpleasant things' (Zajonc, 1968).

The *mere exposure theory* has however been adopted, tried and verified in research on musical preference (Berlyne, 1971; Sluckin, Hargreaves & Colman, 1983). It was upon this theory that Berlyne (based on original suggestions by Wundt – cited in Hargreaves, 1989/2004) proposed the *inverted-U function* relating familiarity to liking (see Figure 9 below, on page 72). In this model, a person's level of enjoyment is very low when the person is less exposed to a

stimulus (music in this case). In fact the level of arousal and preference is zero when the stimulus is completely unfamiliar or novel (zero novelty produces zero liking). Preference increases as the stimulus becomes more familiar, but decreases if the stimulus is over exposed to the extent that, it carries no new information for the perceiver.

Finding a little problem with terminology (*zero novelty*, which he interprets as 'complete familiarity' with the stimulus) Hargreaves (1989) proposed a different adaptation of the *inverted-U* model (shown in figure 10 below on page 72). This model "incorporates a reversal of the abscissa; it intuitively seems to make more sense to think in terms of zero familiarity, that is, of nil exposure to a stimulus, than zero novelty…" (p.111).

> This new curve implies that, liking for completely novel stimuli is initially negative: people initially dislike novel objects. As the objects become more familiar, liking becomes increasingly positive, reaching a peak at some optimum familiarity level, and further increases in familiarity give rise to a decline in liking, which eventually becomes negative at very high levels of familiarity (Hargreaves, 1989. p.111).

The stance of Wundt/Berlyne which espouses the zero novelty as well as the stance of Hargreaves are presented in the two diagrams below.

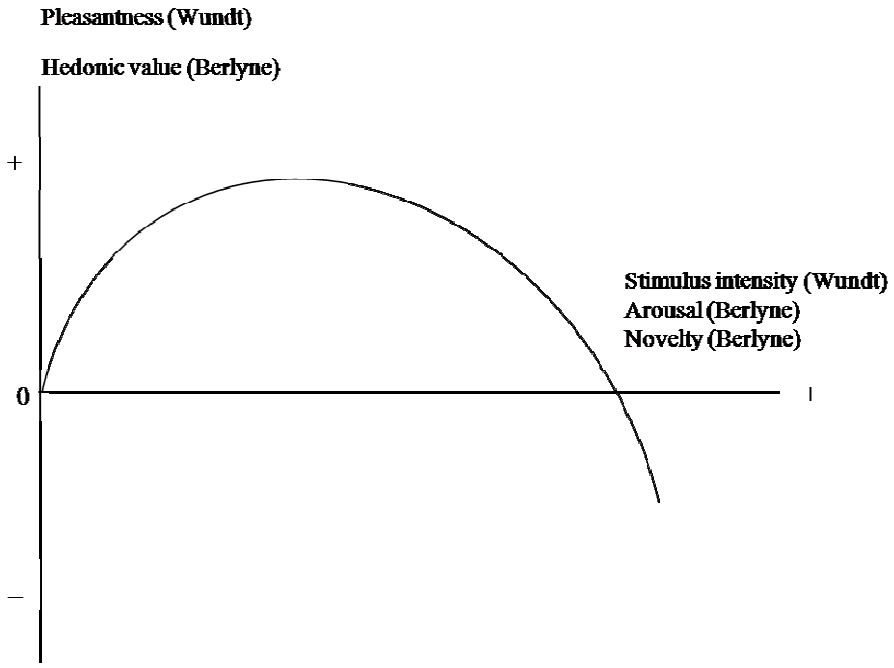

Figure 9: Wundt/Berlyne inverted-U curve

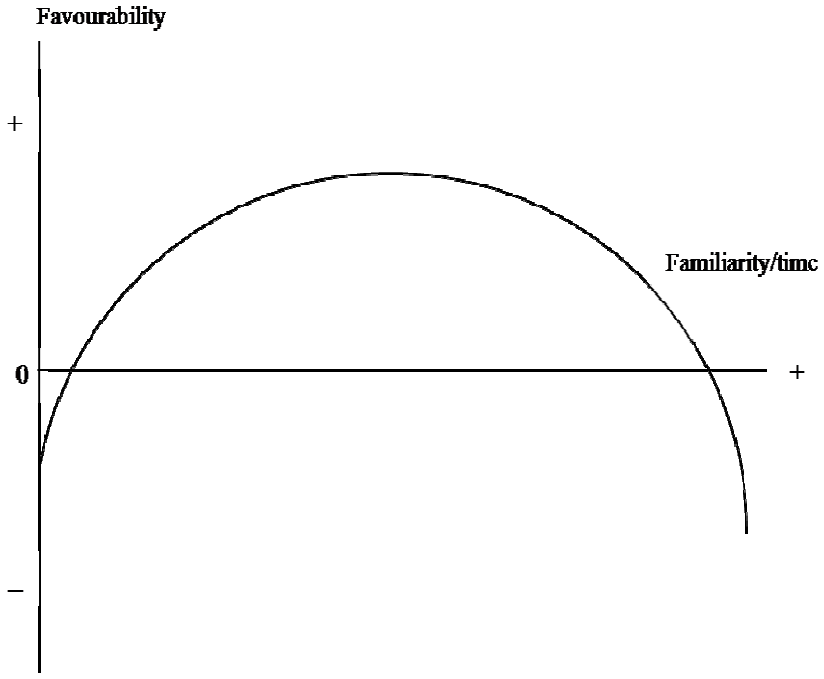

Figure 10: Hargreaves hypothesized inverted-U curve

Cited from Hargreaves, (1989/2004. p. 114)

It will be noted that, whereas the curve starts on the zero intersection point between the abscissa and the ordinate in the Wundt/Berlyne inverted-U curve, the curve starts below the zero point intersection between the abscissa and the ordinate in the Hargreaves hypothesized inverted-U curve. Thus, whereas preference for novel music is initially zero in the Wundt/Berlyne theory, preference for novel music is initially negative in the Hargreaves theory.

Emotional Intelligence

"The twenty-first century's growing global economy, with its inherent rapid changes, provides a compelling case for the need to develop an emotionally intelligent population" (Nelson & Low, 2011. p. 17). In the statement above, (like many authors have also demonstrated) the need for the development of emotional intelligence is stressed. Notwithstanding this great importance of EI, it still has not caught up well with many people as far as its relation to aspects of real life is concerned. There are those who have not heard of it at all, and there are those who have heard but do not know exactly what it is all about.

In this review, pertinent issues on emotional intelligence are raised and discussed. The review covers the following sub-headings: definitional issues on EI, models of intelligence (theoretical viewpoint), EI: historical perspective, salient EI models, research on aspects of music and EI and executive summary of review.

Definitional issues

There are as many definitions of EI as there are writers on it. These definitions are distinguished by their scope and depth. Whereas some definitions are narrow and capture EI as a monolithic construct, others are overly broad, encompassing traits and talents and personality competencies, and other definitions fall within these extremes. The absence of a single agreed-upon definition of EI was one of the main concerns of Matthews, Zeidner, and Roberts (2002) in what became known as 'the challenge of 2002' (Geher & Renstrom, 2004). Mathews, Zeidner, and Roberts put forward that, "some of the conceptualizations of EI are so broad that they render the construct useless". Contrary to this view, Ciarrochi, Chan and Caputi (2001) point out that, although definitions within the field of EI vary, they tend to be complementary rather than contradictory. The complementariness of the EI models find justification in Bar-On (2004) whose comment on the three main EI models (the Mayer-Salovey model, the Goleman model and the Bar-On model) specified that,

> although there are definite differences in the assessment modalities employed by these three approaches and in the conceptualizations of the underlying construct that they measure, there is also a fair degree of overlap between them irrespective of semantic nuances in the way these abilities, competencies and behaviours are described" (p. 116).

The similarities identified above indicates that all theories within the EI paradigm seek to understand how individuals perceive, understand, utilize and manage emotions in an effort to predict and foster personal effectiveness (in Rensburg, 2005). The emphasis on these components of EI is however, placed differently in the different definitions.

In this review, some of the definitions of EI as given by different authors are identified and are subsequently discussed.

"Generally, EI is defined as the ability to effectively deal with emotions." (Geher & Renstrom, 2004). "Emotional intelligence can be said to connect the capacity to carry out abstract reasoning to understanding emotion" (Mayer, 2004 in Geher, 2004). EI 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 action" (Salovey & Mayer, 1990). "Emotional intelligence is an organizing framework for categorizing abilities relating to understanding, managing and using feelings" (Salovey & Mayer, 1994 in Furnham, 2008).

The paragraph above presents four distinct but related definitions of EI. These definitions emphasize only one, two or three aspects of Emotional Intelligence. The first definition (Geher & Renstrom, 2004) conceptualizes EI as a single ability of dealing effectively with emotions. No more, no less. This is quite narrow in the light of the common trend in the available literature on EI. Many authors believe that EI is more than a single ability. The second definition (Mayer, 2004 in Geher, 2004) is the most abstract and most theoretical of them all. It portrays EI as a fully intellectual ability that takes place in the mind. It

ignores expressions of emotions, thoughts of feelings, perception, use or even management of emotions. The third and fourth definitions (Salovey & Mayer, 1990; Salovey and Mayer, 1994 in Furnham, 2008) both address three different components of EI. They omit management of emotion and perception of emotions respectively. In their discussion of emotions (which form the basis of emotional intelligence), Greenberg and Snell (1997) maintain that "emotion includes at least the following four components: 1) an expressive or motor component, 2) an experiential component, 3) a regulatory component, and 4) a recognition or processing component" (p. 96). Bar-On (2004) also maintains that

> from Darwin's initial study of this construct to the present, most descriptions of emotional and social intelligence have included one or more of the following key components; a) the ability to be aware of, understand and express one's emotions; b) the ability to understand others' emotions and relate with people; c) the ability to manage and control emotions; d) the ability to manage change, adapt and solve problems of a personal and interpersonal nature; and e) the ability to generate positive mood and be self-motivated. (p. 117).

In the light of these four (Greenberg & Snell, 1997) and five (Bar-On, 2004) components that discussions of EI must somehow encompass, the definitions above can be considered as restrictive in that, they cover up to a maximum of three aspects of the construct.

Another set of definitions that expands the scope a little to cover four and five components of EI are given in the paragraph below:

"Emotional intelligence (EI) is defined as the ability to perceive emotions accurately, use emotions to enhance thinking, understand and label emotions, and regulate emotions in the self and others (Mayer & Salovey, 1997). "Emotional intelligence involves the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth" (Mayer and Salovey, 1997). "Emotional Intelligence" (EI) refers to "the capacity for recognizing our own feelings and those of others, for motivating ourselves, and for managing emotions well in ourselves and in our relationships" (Goleman, 1998). "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 so as to promote both better emotion and thought" (Mayer & Salovey, 1997). EI refers "to the mental processes involved in the recognition, use, understanding, and management of one's own and others' emotional states to solve problems and regulate behavior" (Mayer & Salovey, 1997). "Emotional intelligence … refers to an individual's capacity to reason about emotions and to process emotional information in order to enhance cognitive processes" (Brackett & Salovey, 2004).

In the preceding paragraph, six definitions of EI can be identified. These definitions, unlike the ones discussed earlier, extend the scope of EI to cover four

and five components. From these definitions, the following emerge as components of EI: a) ability to recognize/perceive/identify/monitor emotions in self and in others, b) ability to motivate one's self using emotions, c) ability to use/generate/express emotions to facilitate thinking, d) ability to tag/understand/describe blends and changes in emotions e) ability to regulate/manage emotions effectively in self and in others.

Considering the components involved, these definitions fall between the ones discussed earlier and the ones that are discussed later in the subsequent paragraphs. Rensburg (2005) notes that "while several theories associated with the EI paradigm currently exist, the three that have generated the most interest in terms of research and application are the theories of Mayer and Salovey (1997), Bar-On (1988, 2000) and Goleman (1998; Goleman, Boyatzis, & McKee,2002)." These major models however, identify four competencies (Mayer & Salovey, Goleman) and five competencies (Bar-On) as embedded in Emotional intelligence. Using this as an organizational framework in this current study, all the definitions that identify four or five components of EI are further described as optimal definitions (as contrasted with restrictive definitions – those with less than three components, and broad definitions – those which are non-specific and those with more than five components).

Furnham (2008) explores the common grounds in the salient models of EI and identifies 15 components in the popular conception of the term. The table below (table 3, next page) gives details of these components.

Table 3: Common facets in salient models of Emotional Intelligence

Facets	High scorers perceive themselves as being or having …
Adaptability	Flexible and willing to adapt to new conditions
Assertiveness	Forthright, frank and willing to stand up for their rights
Emotion expression	Capable of communicating their feelings to others
Emotion management (others)	Capable of influencing other people's feelings
Emotion perception (self and others)	Clear about their own and other people's feelings
Emotion regulation	Capable of controlling their emotions
Impulsiveness (low)	Reflective and less likely to give into their urges
Relationship skills	Capable of having fulfilling personal relationships
Self- esteem	Successful and self-confident
Self-motivation	Driven and unlikely to give up in the face of adversity
Social competence	Accomplished networkers with excellent social skills
Stress management	Capable of withstanding pressure and regulating stress
Trait empathy	Capable of taking someone else's perspective
Trait happiness	Cheerful and satisfied with their lives
Trait optimism	Confident and likely to 'look on the bright side' of life.

Adapted from Furnham (2008, p.57).

Notwithstanding these 15 components, Furnham admittedly points out four different related but independent factors into which these (15) can be combined. These are well-being, self-control skills, emotional skills and social skills. Although scholars differ on the exact components of EI and also refer to similar components by different names, optimal definitions (as far as this study is concerned) acknowledges four or five EI components.

Another group of (four) labels that capture the general components of EI (Furnham, 2008) for example, are *emotional literacy* (the knowledge and understanding of one's own emotions and how they function), *emotional fitness* (trustworthiness and emotional hardiness and flexibility), *emotional depth* (emotional growth and intensity), and *emotional alchemy* (using emotions to discover creative opportunities).

Thus, irrespective of the maninness of the specific components of EI, optimal (unlike restrictive or broad) definitions always capture EI as being made up of (either) four or five abilities or components.

The ability model of EI (Mayer & Salovey, 1997) which is the main model adapted in this study for example, captures EI as being made up of four main abilities: ability to accurately perceive emotions in self and in others, ability to use/generate/express emotions to facilitate thinking and action, ability to label and understand complex emotions, and the ability to manage one's own and others emotions. These four abilities are however, classified under two main areas (experiential EI and strategic EI) and divided among eight different tasks (faces, pictures, sensation, facilitation, changes, blends, self management and

relationship management) – two tasks for each of the abilities. Whereas the abilities to perceive emotion and to use emotion to facilitate thinking fall under the experiential area, the abilities to understand emotions and to use emotions fall under the strategic area. The figure overleaf (Figure 11) captures the divisions into which the ability model of EI is put. (Further descriptions of this EI model are given later in the review). The first two definitions (Mayer & Salovey, 1997) in the optimal set of definitions presented shed considerable light on the ability model of Emotional intelligence which is displayed in the figure eleven below (next page).

The last set of definitions of EI to be reviewed in this study is given in the paragraph below. As noted earlier, these definitions are a little vague in the exact components that make up the concept. They are thus, considered overly broad in this study because, their scope spans beyond five components of EI or are non-specific.

"EI is defined as "an array of emotional and social abilities, competencies, and skills that enable individuals to cope with daily demands and be more effective in their personal and social life" (Bar-On, Denburg, & Bechara, 2003). EI refers to "a set of competencies, or abilities to recognize, understand, and use emotional information about oneself or others that leads to or causes effective or superior performance" (Boyatzis & Sala, 2004). "… emotional intelligence is the intelligent use of one's emotions" (Boyatzis & Sala, 2004, p. 149).

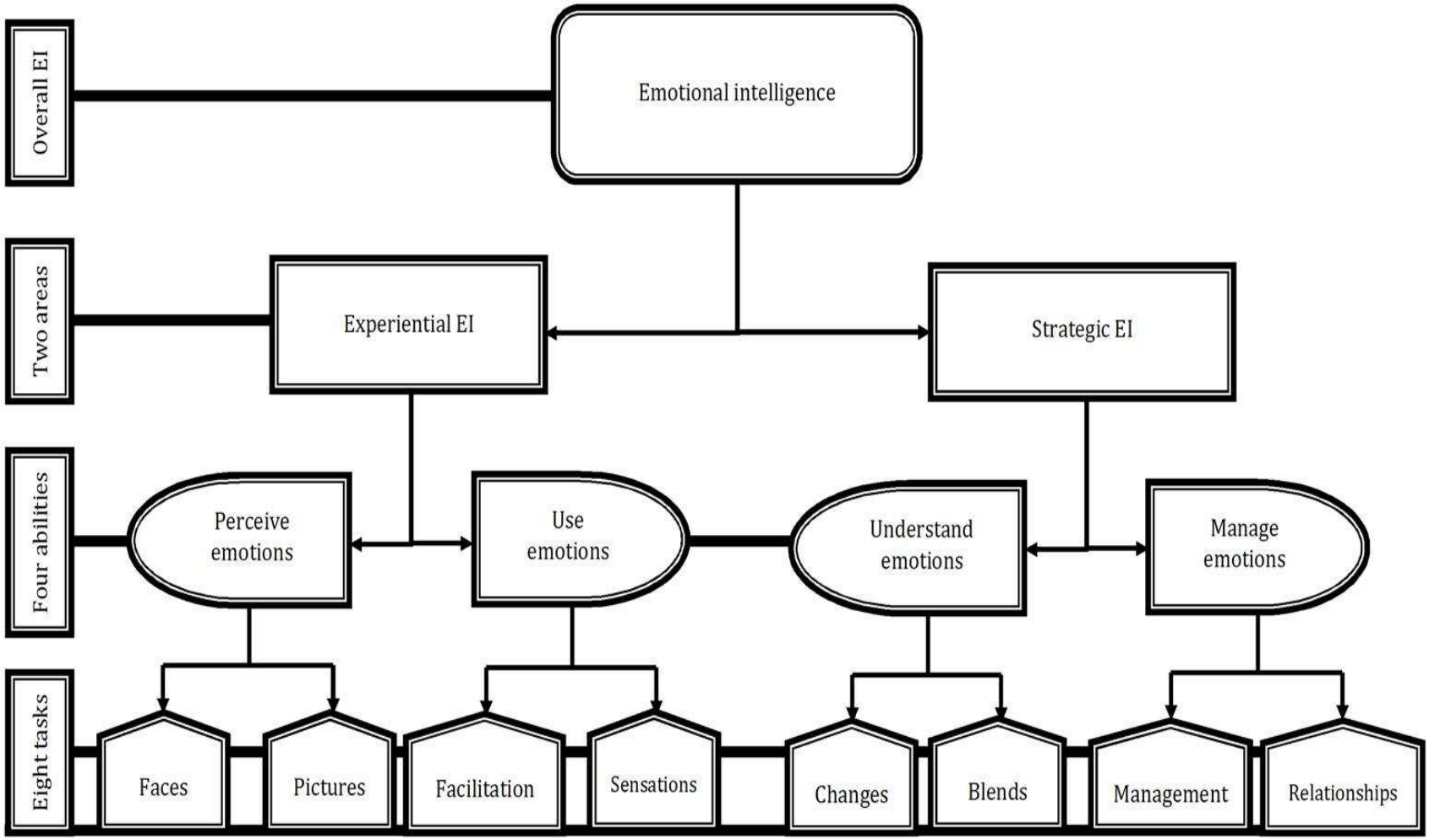

Figure 11: Sub-divisions of the ability model of Emotional intelligence.

They first two of the three definitions in the paragraph above allude to skills, traits, talents, abilities, endowments and other social competencies. In the first definition for example (Bar-On, Denburg, & Bechara, 2003) there is the use of the phrase, *an array of emotional and social abilities, competencies, and skills*" (Bar-On, Denburg, & Bechara, 2003). This certainly is very broad and compares EI to general social intelligence.

According to Rensberg (2005), Bar-On (2000) defines his model in terms of an array of traits and abilities related to emotional and social knowledge that influence our overall ability to effectively cope with environmental demands. As such, it can be viewed as a model of psychological well-being and adaptation. In the second definition, Boyatzis and Sala (2004) portray EI as a *set of competencies… that leads to or causes effective or superior performance.* This definition, like the former, has the tendency to include everything that contributes to or causes effective or superior performance. Everything that contributes to effective performance is definitely beyond what EI alone can embrace. Thus, these definitions are considered broad definitions in this study. The very last of the definitions (Boyatzis & Sala, 2004) is rather vague and non-specific. It does not mention any particular ability or competence. Simply stating that EI is the intelligent use of one's emotions is rather too generic to be considered as very befitting of explaining the construct.

In this review, 13 different definitions of emotional intelligence which vary in the depth and scope of their conceptualizations have been presented and discussed. Of course, the study could not possibly review all the possible

definitions there are on the topic, but 13 definitions surely give a fair picture of what EI is. The implication of the differences in the definitions for this study cannot be overlooked. Different scholars have designed different instruments for measuring EI according to how they conceptualize and define the term. It is therefore, necessary to identify a particular model in order to ensure the consistency and validity of the emergent results. In this study therefore, the ability model of EI (Mayer & Salovey, 1990) is adopted because it best satisfies the purpose. Consequently, it is the definition of Mayer and Salovey (2001) that is used as the operational definition of EI in this study (see definition of terms - chapter one).

Models of Intelligence (Theoretical Viewpoints)

A number of theories of intelligence have emerged within the last century. An overview of some of these theories is given in the subsequent paragraphs below.

The British psychologist, Spearman (1904), described his concept of a general intelligence, or most commonly referred to as Spearman's unifactorial 'g' or the *g factor*. Using the factor analysis technique to examine a number of mental aptitude tests, Spearman observed that the scores on the tests were very similar. High achievers in one test also scored very high marks in other tests and low achievers in one test scored equally low marks in other tests. Stemming from this outcome, Spearman concluded that "intelligence is a general cognitive ability that could be measured and numerically expressed" (Spearman, 1904).

Thurstone (1938) came up with a differing theory of intelligence. He did not support Spearman's stance that intelligence was a single, general ability. Thurstone's theory showcased seven different components which he referred to as "primary mental abilities." These abilities were: verbal comprehension, reasoning, perceptual speed, numerical ability, word fluency, associative memory and spatial visualization. Perhaps the existence of many intelligences rather than one general intelligence was to lay the foundation for future research on the existence of multiple intelligence theories.

In 1983, Gardner put forth his Multiple Intelligence Theory (MIT). This was a sequel to his Shattered mind (1975) in which he first introduced the concept of multiple intelligences. Gardner differed from other scholars in that he thought numerical representations of human intelligence were inadequate and inaccurate in depicting people's abilities. His theory specified seven distinct intelligences that were based on skills and abilities valued in different cultural contexts. These intelligences are: visual-spatial, bodily-kinesthetic, logical-mathematical, verbal linguistic, interpersonal intelligence, musical intelligence and intra personal intelligence. Armstrong (2001) opines that, although Gardner originally started with seven intelligences, an eighth intelligence, 'naturalistic intelligence' has been added to the list and now there is the possibility of a ninth intelligence, 'emotional intelligence'(Armstrong, 2001, Fogarty & Stoehr, 2008). It seems quite logical to suppose that Gardner's theory borrows and builds up on Thurstone's (1935) primary mental abilities.

In 1985, an aspect of Gardner's theory found support in the work of Sternberg, who also agreed that intelligence spanned beyond a single, general ability. Sternberg defined intelligence as a "mental activity directed toward purposive adaptation to, selection and shaping of, real-world environments relevant to one's life" (Sternberg, 1985). Other aspects of Gardner's theory were opposed in the triarchic theory of intelligence which Sternberg proposed. He suggested some of Gardner's intelligences as being better viewed as individual talents. The triarchic theory specified what Sternberg referred to as 'successful intelligence' which comprised three different factors: *analytical intelligence creative intelligence* and *practical intelligence.*

This short review on some models of intelligence has pointed out clearly that issues of what constitute human intelligence are very important to scholars in different fields. The models reviewed present different constituents of human intelligence. The review shows a shift in the conception of intelligence as a single overall potential as claimed by Spearman (1904). Subsequent studies seem to agree on the existence of more than a single intelligence in humans, although the exact number and labels are different. For this study, the ability model of emotional intelligence that views it as a unique intelligence is adopted. This heightens the importance to review other models of existing theories of intelligence and to see how and where this adopted model is situated in the broader framework of theories on intelligence. Thus far, this EI model finds more justification in the multiple theories of intelligence than in the unifactorial model. Considering Thurstone's (1938) mental abilities for example, the ability model of

EI is related mostly to three of the seven outlined by Thurstone. These three are: reasoning, word fluency and associative memory. The *use of emotion* branch of the EI model considers the ability to reason with emotion. It stresses the role of emotion in the reasoning of the individual. The word fluency of Thurstone is also manifest in the *understanding of emotion* branch of EI which deals with the ability to use the right vocabulary to describe the blends of complex emotions and the transitions from one emotional state to another. Thurstone's associative memory is captured in the *ability to recognize emotions* (in faces, pictures, music and in other media) branch of EI.

In the same vein, aspects of both Gardner's (1983) MI theory and Sternberg's triarchic theory of intelligence described above are related to the adopted model of EI. The most related of Gardner's labeled intelligences are those of interpersonal and intrapersonal intelligence (which primarily deal with the ability to relate well with other people and with one's own self respectively). As for Sternberg's successful intelligence, there seems a strong relationship of the individual aspects and the ability model of EI. These aspects and what they entail are: *analytical intelligence* (problem-solving abilities), *creative intelligence* (the ability to deal with new situations using past experiences and current skills), and *practical intelligence* (the ability to adapt to a changing environment). A closer look at the definitions of EI reviewed (earlier in this chapter) demonstrates how similar the descriptions the constructs are. This review thus, expands the construct validity of the current study by expanding its theoretical base and framework.

Emotional Intelligence: Historical perspective

"All learning has an emotional base." (Plato, in Kendra, 2010). Plato's assertion points to the essence of emotion in any learning venture. Right from classical antiquity during the lives of Plato and Aristotle and even before them, issues of emotion have always been considered in the overall success of any education. This historical review however, focuses on theories and researches (mostly within the last few decades), which have impacted directly on emotional intelligence theory (theories) and practice.

To begin with, Bar-On (2004) credits Charles Darwin as the first researcher who subjected the construct (emotional intelligence) to scientific scrutiny (although Darwin never used the words 'emotional intelligence'). This effort of Darwin, according to Bar-On, was long before psychologists began studying cognitive intelligence; "… even before there were psychologists and even before the word 'intelligence' appeared in dictionaries" (p. 115). Bar-On's claim was based on Darwin's (1872) book entitled Expression of the emotions in man and animals. Besides Darwin's work, the literature is silent on other scientific writings that could directly be linked to the concept of emotional intelligence until the 1930s.

In the 1930s, Thorndike introduced a concept of intelligence which he labeled "social intelligence." Among others, the meaning of social intelligence bordered on the ability to get along with other people. Social intelligence was initially defined as "the ability to understand and manage people" (Thorndike & Stein, 1937). It also implied the ability to understand people and to act wisely in

human relations. In the words of Mayer and Salovey (1990), "Thorndike defined social intelligence as the ability to perceive one's own and others' internal states, motives, and behaviors, and to act toward them optimally on the basis of that information." The introduction of social intelligence was a great leap towards the development of emotional intelligence. The definitions given for social intelligence above can be linked directly to the general abilities that make up the full concept of emotional intelligence. In fact, because of this relatedness, scholars like Bar-On (2004) prefer using the broader term 'emotional and social intelligence' instead of just 'emotional intelligence'.

Then came Weschler in the 1940s who suggested that the affective components of intelligence may be essential to success in life. Weschler (1958) defined intelligence as the "aggregate or global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his environment." (cited in Meyer & Salovey, 1990). Perhaps the greatest contribution of Weschler towards the development of emotional intelligence, although he never used the term, was the attention he drew to the importance of the affective rather than the cognitive domain, to the overall success of life. Of the three popularly expressed domains of learning (cognitive, psychomotor and affective), it is the affective domain which is most connected to emotional intelligence.

In the 1950's, humanistic psychologists like Maslow described how one can build emotional strength. In his theory of self-actualization, Maslow (1954) expressed his belief in how man can work out a better world for mankind as well as for himself. According to Chauhan (1991), Maslow "critically examined the

traditional approach of pain avoidance and pleasure seeking and tension reduction as the major sources of motivating behavior." Indeed, any attempt aimed at avoiding pain, seeking pleasure and reducing tension in one's self and in a relationship will have a lot to do with the ability to identify, understand, use and manage emotions. These are the very principles upon which emotional intelligence is built. It follows, therefore, that one of the key characteristics of self-actualizers that Maslow identifies (in Aggarwal, 2007) is the ability to "develop deep interpersonal relations with others." This characteristic is key and very important in determining the emotional intelligence of any individual.

In 1975, Gardner introduced the concept of multiple intelligences and developed it further in 1983 by identifying seven intelligences (initially) and adding on an eighth (naturalistic intelligence) and subsequently others (spiritual intelligence, existential intelligence). Details of the other intelligences have been discussed earlier in this chapter.

In 1985, Wayne Payne introduced the term emotional intelligence in his doctoral dissertation entitled "A study of emotion: developing emotional intelligence; self-integration; relating to fear, pain and desire (theory, structure of reality, problem solving, contraction/expansion, tuning in/coming out/letting go)." According to Hasan (2007), "this was the first-ever-academic use of the term emotional intelligence, popularly known as EQ … Emotional Quotient." There are some scholars, like Bar-On (2004) who attribute the first use of the term 'emotional intelligence' to Leuner in 1966.

In 1987, Keith Beasley is said (Virkus and Ulikool, 2009) to have used the term "emotional quotient" in an article published in Menza Magazine. This according to Virkus and Ulikool (2009) was the first published use of the term, although Reuven Bar-On claims to have used the term in an unpublished version of his graduate thesis.

In 1990, Mayer and Salovey published their landmark article, "Emotional Intelligence," in the journal of *Imagination, Cognition, and Personality.* This indeed marked the beginning of conscious scientific and systematic research into this area, as the authors strove towards defining the concept and designing models as well as constructs for measuring emotional intelligence. In the words of Hasan (2007),

> Mayer and Salovey were trying to develop a way of scientifically measuring the difference between people's ability in the area of emotions. They found out that some people were better than others at things like identifying their own feelings, identifying the feelings of others, and solving problems involving emotional issues.

Hasan adds that, since the work of Mayer and Salovey in 1990, they have developed different tests to measure emotional intelligence. Because nearly all their (Mayer, Salovey & later Caruso) writings have been done in the academic community, their names and their actual research findings are not, comparatively, widely known except to those in academia.

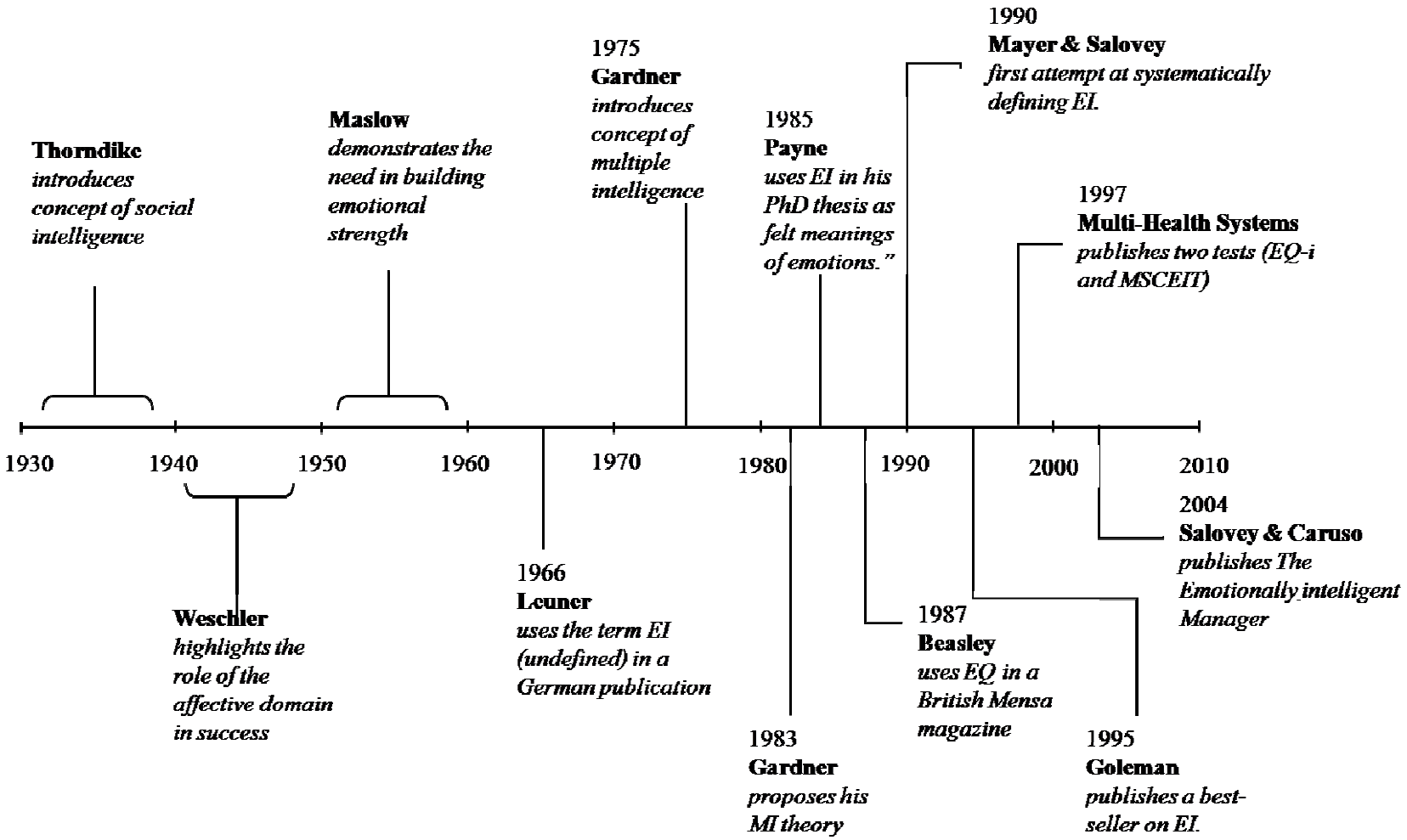

Figure 12: Historical timeline display for the development of Emotional

In 1995, therefore, the concept of emotional intelligence was popularized after the publication of the psychologist and New York Times science writer, Daniel Goleman's book Emotional Intelligence: Why it Can Matter More Than IQ. Perhaps Goleman is most popularly associated with emotional intelligence outside academia than any single writer on the topic. A historical timeline display for the development of EI is shown in Figure twelve (previous page).

In the historical narrative review above, the major landmarks in the development of emotional intelligence have been highlighted. These theories, studies and writings that serve as the direct antecedents of EI are very crucial in explaining a lot of things about the concept as it is now. For example, it explains the reasons for the nuances in the definitions and the basic conceptualizations of EI (depending on which of the works reviewed influenced a particular writer most). Thus, there are three major schools of thought in the present conceptions of EI (Caruso, 2012): a) emotional intelligence as a set of leadership competencies (eg. Goleman, 1995) b) emotional intelligence as a set of personality traits and characteristics (eg. Bar-On, 1997) c) emotional intelligence as a set of abilities that constitute a unique and distinct intelligence (eg. Mayer & Salovey, 1990; later joined by Caruso).

Salient Emotional Intelligence models

As has been mentioned and stressed, three major models of emotional intelligence have dominated the scholarly and scientific discourse on the construct, namely: those of Mayer and Salovey (1997), Bar-On (1988, 2000) and

Goleman (1998; Goleman, Boyatzis, & McKee, 2002). The subsequent paragraphs focus on giving an overview of these three models.

Emotional intelligence as leadership competencies

Caruso (2012) maintains that arguably, the most popularized view of EI is that of Dr. Daniel Goleman. Goleman is perhaps the most popular person associated with the concept of emotional intelligence, particularly outside of academia. Goleman, and the group of scholars working within this domain of EI (Boyatzis, McKee, Sala) follow a framework that attempts to capture a person's potential for mastering a range of competencies. Their standpoint is based on a simple definition of EI and two expanded explanations of the construct based on the simple definition. Broadly, they define EI as "the intelligent use of one's emotions" (Boyatzis & Sala, 2004). The first elaboration on this simple definition captures EI as "how people handle themselves and their relationships" (Goleman *et.al.,* 2002), and the second expansion of the definition is "a set of competencies or abilities, in how a person: a) is aware of himself/herself; b) manages him/herself; c) is aware of others; and d) manages his/her relationships with others" (Boyatzis & Sala, 2004. p.149). Based on the explanations of the initial simple definitions, the authors refine their definition of the construct by seeing emotional intelligence as a competency which "is an ability to recognize, understand, and use emotional information about oneself or others that leads to or causes effective or superior performance" (Boyatzis & Sala, 2004, p. 149).

Table 4: Clusters and sub-competencies of Goleman's EI model

ECI clusters	ECI sub-competencies
Self-Awareness	
	Emotional Self-Awareness
	Accurate Self-Assessment
	Self-Confidence
Self-Management	
	Self-Control
	Trustworthiness
	Conscientiousness
	Adaptability
	Achievement Orientation
	Initiative
Social Awareness	
	Empathy
	Organizational Awareness
	Service Orientation
Social Skills	
	Developing others
	Leadership
	Communication
	Influence
	Change Catalyst
	Conflict Management
	Building Bonds
	Teamwork and Collaboration

Their eventual definition underpins their conceptualization of EI. "Building upon and integrating a great deal of competency research, Goleman, Boyatzis, and McKee (2000) presented a model of emotional intelligence

competencies arrayed in four clusters (Boyatzis, 1982; Spencer & Spencer, 1993; Rosier, 1994-1997; Jacobs, 1997; Goleman, 1998). Subsequently, they identify four major clusters and up to 20 sub-competencies that the overall EI must encompass. These clusters and their sub-competencies are presented in table four (previous page). The chief concern of this EI model is on how the four clusters might translate into success in the workplace. For an assessment of this EI model, Goleman and his colleagues rely largely on a 360^0 instrument which is known as the Emotional Competence Inventory (ECI).

Emotional intelligence as personality traits and characteristics

Emotional intelligence as personality traits and characteristics is championed by Reuven Bar-On. Actually, this model pre-dates that of Goleman and his colleagues. Bar-On's interest is in this model is geared towards getting a better insight into the psychological basis for well-being, and as such, his conceptualization of EI is based on personal attributes that include resilience and optimism, along with many others. According to the Bar-On model of EI, "emotional and social intelligence is a cross-section of inter-related emotional and social competencies that determine how effectively we understand and express ourselves, understand others and relate with them, and cope with daily demands and pressures" (Bar-On, 2004; p. 117). Thus, Bar-On's model of EI does not really distinguish it from social intelligence; in fact he kind of fuses the two concepts into one.

Table 5: Domains and subscales of Bar-On's EI model

EQ domains	EQ subscales
Intrapersonal EQ	
	Self-regard
	Emotional Self-awareness
	Assertiveness
	Independence
	Self-actualization
Interpersonal EQ	
	Empathy
	Social Responsibility
	Interpersonal Relationship
Stress Management EQ	
	Stress Tolerance
	Impulse Control
Adaptability EQ	
	Reality-testing
	Flexibility
	Problem-solving
General Mood EQ	
	Optimism
	Happiness

Caruso (2012) again states that, “at its most fundamental level, this approach provides an estimate of a person’s capacity to effectively cope with pressures and demands of daily life”. As such, five broad domains are assessed through self-report and/or 360^0 instruments. These five broad domains are Intrapersonal skills, Interpersonal Skills, Adaptability, Stress Management, and General Mood. Each of these five domains also has corresponding sub-domains. Table five gives details of the five main domains and their corresponding sub-scales.

As far as this model of EI is concerned, the notion that personality can play a meaningful role within the broad context of emotional competence holds a great deal of value. Bar-On’s model of EI is assessed using a 133-item instrument called the Emotional Quotient Inventory (EQ-i).

Emotional intelligence as a distinct intelligence and set of abilities

This model of EI is championed by John Mayer, Peter Salovey and (later joined by) David Caruso. This ability model views EI as a unique intelligence comprised of measurable abilities in four areas of performance: a) ability to accurately perceive emotions, b) ability to use emotions to facilitate thought processes, c) ability to understand complex emotions and transitions between stages of emotions, and d) ability to integrate data and emotions to devise effective problem solving strategies (Caruso, 2012).

Since emotional intelligence is built on two words: ‘emotion’ and ‘intelligence’, the authors believe that a model of EI should embrace both

concepts. Thus, this model of emotion views emotions working together with cognition (thinking) rather than as working in opposition to thinking. To the authors of this model, every emotional display contains data/information which must be perceived and used to optimize decisions. The point of emphasis in this model is on the ability to understand and to reason with emotional information and to combine thought and emotion to effectively perform in specific situations. Caruso (2012) again avers that "this view of EI as an intelligence creates unique focus on measuring EI through actual mental performance rather than self-reported personality traits, behavior observed by others, or competency levels that a person might or might not actually possess".

This model of EI is assessed using a 141-item test called the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT). This test is discussed in detail in chapter three under the research instruments.

To sum up on the overview of the three EI models, Bar-On (2004) draws evidence from Spielberger's (in Press) The Encyclopedia of Applied Psychology and notes that there are

> three major approaches to defining and measuring emotional intelligence: 1) the Salovey-Mayer model (Salovey & Mayer, 1990; Mayer & Salovey, 1997), which defines this construct as the ability to perceive, understand, manage and use emotions to facilitate thinking, is assessed by an ability-based measure (Mayer *et.al.*, 2002); 2) the Goleman model (Goleman, 1998), which views the

> construct as a wide array of emotional and social competencies that drive managerial performance, is measured by multi-rater assessment (Boyatzis *et. al.*, 2001); and 3) the Bar-On model (Bar-On, 1997b & 2000), which describes a cross-section of emotional and social competencies that impact intelligent behavior, is measured by a combination of self-report (Bar-On, 1997a) and multi-rater assessment (Bar-On & Handley, 2003) within a potentially expendable multimodal approach. (p. 116).

Research on aspects of Music and Emotional Intelligence

It is evident (both from the background and the need for the study – chapter one) that comparatively, very little research has been done on music and emotional intelligence. A study that specifically examines the relationship between musical preference and emotional intelligence (as this study seeks to do) seems to be completely unavailable; which gives the conduct of this study a fortiori. However, the relationship between emotional intelligence and some other aspects of music has caught the attention of some (very) few scholars. Two of such studies are reviewed in the subsequent paragraphs below.

In the first study, Resnicow, Salovey and Repp (2004) set out to explore the relationship between the recognition of emotions in music performance and emotional intelligence, as measured by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT). They were particularly interested in the perception,

identification or recognition of emotion branch of the MSCEIT (the first part of the instrument which assesses emotion identification from faces and pictures). To achieve this purpose, they selected twenty-four undergraduate students (9 men and 15 women) at Yale University whose ages were between 18 and 24 and whose musical training ranged from 0 to 15 years of instruction on one or more instruments. The participants were scored on the MSCEIT using the general consensus criterion (the alternative to expert scoring which is based on the responses of a large number of individuals who have taken the test in the past). Speaking to this scoring criterion, Mayer *et al*. (2003), based on a normative sample of 5000 individuals, found a split-half reliability of the full-scale MSCEIT to be .93, and for the four branches to be, .91, .79, .80, and .83 respectively.

Three short piano pieces: Prelude No. 6 in D minor (Andante espressivo) from Johann Sebastian Bach's *Twelve Little Preludes* (Vienna: Universal-Edition, 1951), "Children's Song" in C major (No. 2, Andante) from Béla Bartók's *For Children* (London: Boosey & Hawkes, 1947), and "Dialogue"(No. 3, Andante) from Vincent Persichetti's *Little Piano Book* (Bryn Mawr, PA: Elkan-Vogel, 1954) formed the musical stimuli in this study. These pieces were selected and performed by a 58 year old classically trained amateur pianist on a Yamaha Clavinova CLP-611 digital piano and recorded in MIDI format on a Macintosh Quadra 660AV computer. Each of the pieces above was recorded five times, first with an expression deemed appropriate for the music (normal), and then with four different emotional intentions: happiness, sadness, anger, and fearfulness, in that order.

The participants took the online version of the MSCEIT before taking the music test. The performances were blocked by piece. Bach was always first, Persichetti second and Bartok last. For each of the pieces, the normal performance was played first to serve as a standard relative to the judgment of the subsequent performances. After each of the performances, participants rated the degree to which each of the four emotions (happy, sad, angry, and fearful; always in that order) was conveyed by the performance using a numerical scale that ranged from 0 to 10 for each of the emotions. Total scores ranged from 78 to 142, with a mean of 110.2 and a standard deviation of 16.4. Women tended to have higher scores than men (M = 114.2 vs. 103.7), but the difference did not reach significance, t (22) = 1.57, $p < .14$., because the highest score was obtained by a man. (The next 11 rank-ordered scores were all obtained by women). Years of musical training were not correlated with the overall score (r = .08, n.s.).

The researchers found the following correlations between emotional intelligence and the music test scores. The result is presented in their own word:.

> The correlation between the total scores of the two tests was significant, r(22) =.54, $p < .01$. The total music test score correlated significantly with the experiential area level score of the MSCEIT, r (22) = .58, $p < .01$, but not with the strategic score, r (22) = .31, $p > .10$. The higher correlation with the experiential score makes sense because that score reflects “how accurately a person can ‘read’ and express emotion, and how well a person can compare that emotional stimulation to other sorts of sensory

experiences (e.g., colors or sounds)" whereas the strategic score "indexes how accurately a person understands what emotions signify (e.g., that sadness typically signals a loss) and how emotions in him/herself and others can be managed." Of the two branches of the MSCEIT that contribute to the experiential score, Branch 2 ("Using Emotions to Facilitate Thought") correlated more highly with the total music test score, $r(22) = .51$, $p < .01$, than did Branch 1 ("Perceiving Emotions"), $r(22) = .47$, $p < .05$. This, as the authors admit, may seem surprising, but it could easily have been due to sampling error in this small sample, and certainly does not represent a significant difference. Correlations with the branches contributing to the strategic score, Branch 3 ("Understanding Emotions"), $r (22) = .21$, $p > .10$, and Branch 4 ("Managing Emotions"), $r (22) = .20$, $p > .10$, were positive but not significant. The branch scores themselves were all positively inter-correlated, with the highest correlation obtaining between Branches 1 and 2, $r (22) = .49$, $p < .01$, and the lowest between Branches 2 and 3, $r(22) = .30$, $p > .10$, as appears to be the case in most research involving the MSCEIT (The correlation matrix of branch scores has a positive manifold, as it should; Mayer et al., 2003).

In their discussion, the authors acknowledged that the significant correlation between the overall scores of the MSCEIT and the music test suggests

that individual differences in sensitivity to emotion conveyed by music performance are related to individual differences in emotional intelligence. In particular, they seem to be related to the ability to generate a mood in the service of cognitive tasks and, to a lesser extent, to the ability to recognize emotional information in faces and pictures. In their conclusion, however, the authors identified a number of shortfalls with their study for which a follow-up study that aims at replicating theirs would be necessary. Among these shortfalls are the facts that their findings were based on a small sample, and that their musical materials were produced by a single individual who was not a professional musician.

The findings in this study are extremely useful to the current study in two major ways. First of all, the authors suggested "a connection between sensitivity to musical emotion and everyday emotional intelligence that should be of interest to researchers working in both areas" (Resnicow, Salovey & Repp, 2004). They went on to indicate that, researchers concerned with musical emotion can now be even more confident that they are dealing with an aspect of human communication that is related to real-life situations in which correct recognition of emotion is important. The interest to explore a relationship between music and emotional intelligence thus has an even stronger empirical background.

Secondly, the research procedures used in the study above are very helpful to the current study. In Resnicow, Salovey and Repp's (2004) study, the sample size and the sampling procedure indeed influenced the results (rather negatively). This has informed the nature of the sampling in this current study – a bigger

sample size that is more varied in characteristics and a more vigorous random selection approaches. The study also highlighted the importance of using strong and reliable research instruments. This has also informed the careful selection of the research instruments in this current study. It appeared also that, the selection of the particular music(s) and the rendition of the music to the participants, the context in which the music was rendered and all, had some impact on the results as well. Therefore, in the present study, I played no context-stripped music to participants; the participants were expected to indicate the preferences for the music that they listen to on their normal day-to-day basis. Important cues were however, given to participants to guide them in identifying the correct musical genres within which their preference styles fell. Appendix A is a good apotheosis to the cues provided.

The second study on music and emotional intelligence to be reviewed in the study was conducted by Magdalena Petronella Jansen Van Rensburg in 2005. This study, dubbed, *the role of emotional intelligence in music performance anxiety* involved two main articles: a) critical perspectives on emotional intelligence and music performance anxiety b) the relationship between emotional intelligence and music performance anxiety: an empirical study.

The aim of the first article was to provide a theoretical frame of reference for Music Performance Anxiety (MPA) and emotional intelligence through an investigation of existing theories on the two constructs. Rensburg discussed prominent approaches to the development of MPA and proceeded to discuss the different theories concerning EI. Tangential points between the two constructs

were then highlighted. Rensburg, hypothesized that EI is a cognitive-positive way of processing emotions and that it can be used to the advantage of musicians. The discussion on MPA was built on the premise, that MPA forms an intrinsic part of a musical performance from which no musician, amateur or professional is entirely free. MPA may involve a chain of intense physiological, behavioural, cognitive and emotional reactions. Rensburg noted one of the major problems encountered by research on MPA being the absence of an adequate operational definition of the construct. Consequently, the development of MPA can be explained in different ways by each of the different schools of thought in psychology; for example, among others, the psychoanalytical, phenomenological, behavioural and cognitive-behavioural theories. These theories formed the basis of discussion on MPA in the article. The conclusion made after the review of these theories indicated that the construct of MPA has a central affective domain which can prove to have definite tangential points with EI.

In his review of EI theories, Rensburg acknowledged three major EI theories that have generated the most interest in terms of research and application, namely: those of Mayer and Salovey (1997), Bar-On (1988, 2000) and Goleman (1998; Goleman, Boyatzis, & McKee, 2002). He however, adopted Bar-On's model (which can be viewed as a model of *psychological well-being*) in his study because it suited the purpose of the study in the most adequate way to find tangential points between MPA and EI. Rensburg went on to discuss the tangential points between MPA and EI using the five main domains of Bar-On's EI model (see details in table five) which are: intrapersonal skills (self-esteem,

emotional self awareness, assertiveness, independence and self-realization), interpersonal skills (empathy, social responsibility and interpersonal relationships), adaptability (reality testing, compliancy and problem solving), stress management (stress tolerance and impulse control) and general mood (optimism and happiness) (Bar-On, 1997; Thompson, 2004). In his conclusion, Rensburg noted how anxiety can be used to enhance rather than blight performance; and suggested the inclusion of an EI approach in the training of musicians as it can play a very important role in the management, control and use of MPA. He notes, "it is important for musicians to learn how they create their own levels of MPA, how they can cope with MPA and use it to achieve an optimal level of functioning" (p. 20).

Rensburg's second article was based on a non-experimental, correlational study which was aimed at determining the correlation between the constructs MPA and EI. This was done through the exploration of the state-anxiety of participants, experienced before a public performance at the 42nd Free State Eisteddfod in May 2005. The research sample consisted of 47 female participants who had entered for the Eisteddfod; each with at least three years of musical training and ranged between the ages of 15 and 18. The state-anxiety scores, together with the participants' trait-anxiety scores, were then compared with the subscale scores of their emotional intelligence. These measures were obtained by the administration of the Spielberger State-Trait Anxiety Inventory (STAI) and the Bar-On Emotional Intelligence Inventory: Youth Version (Bar-On EQ-i, YV) respectively. Due to the fact that these instruments had not been standardized for

a South African population, raw scores were used for all measures. The predictor variables that were used in this study were the subscale scores of the Bar-On EQ-i:YV (Bar-On & Parker, 2000), giving an indication of four aspects of EI, namely intrapersonal dimension, interpersonal dimension, stress management and adaptability. These four variables were used as the predictors of both state- and trait-anxiety which were the two main criteria under discussion. The focus was to determine the extent to which the variance in these two criteria could be explained by the sample's EI. A hierarchical regression analysis was performed. The aim was to determine the total variance of all predictor variables (complete model) with regard to the criterion variables. Following this, each of the predictor variables were omitted to determine that specific variable's contribution to the overall variance. The variance percentage, as defined by the predictors, was denoted by R^2 (squared multiple correlation coefficient). Investigation by means of the hierarchical *F*-test determined whether a specific variable's contribution to the value of R^2 was statistically significant. It was for this reason that the overall EI score was not used in the analysis, as it is comprised of the four subscale scores and therefore could not be used in the hierarchical regression analysis.

When the significance of an increase in R^2 was investigated, it was also necessary to calculate the effect size of the contribution of each specific predictor. The effect size gave an indication of the contribution to R^2 in terms of the proportion of unaccounted variance of the previous model. Due to the fact that participants could be divided into two main groups, namely those that performed individually (piano) and those who were playing with an accompanist, it was

determined whether there were significant differences regarding the mean scores of the relevant variables for these two groups. Inter-correlations between the predictor variables and the criterion variables were, apart from the hierarchical regression analysis, also indicated and discussed. Descriptive statistics (means and standard deviations) of all variables measured on the interval scale were also calculated and indicated. The 1% as well as the 5% levelS of significance were used in Rensburg's study. The study was based on the hypothesis that an inverse relationship exist between the constructs of MPA and EI.

According to Rensburg, the results strongly supported the preset hypothesis. More specifically, the data provided evidence that there is a significant inverse relationship between the intrapersonal and stress management dimensions of EI and state- and trait-anxiety. The highest inverse correlation existed between the stress management dimension of EI and trait-anxiety. Furthermore, because of the high inverse correlation between the stress management dimension and trait-anxiety, it could be suggested that EI might prove to be a valuable domain of an intervention and prevention model to cope with MPA.

Notwithstanding the results above, Rensburg advices some level of caution in viewing the findings because of some methodological limitations. He notes, for example, that the sample group consisted of females only, so the possibility exists that the results might not generalize to males. Again, all the assessments of constructs were through self-report questionnaires and only the variables hypothesized to be associated were assessed. It is possible that the

results may not reflect the participants' behaviour, since the researcher relied entirely on the participants' honesty and ability to provide accurate descriptions of their psychological state. On the sample size, Rensburg notes this was relatively small, which may cause problems where multiple comparisons are concerned. The results are restricted to middle class to upper class white subjects and thus limits the generalizability of results. Furthermore, it was acknowledged that this research did not attempt to measure all possible variables, which could generate MPA. The final regression model left 40.09% of the variance for trait-anxiety and 67.11% for the variance for state-anxiety unaccounted for. Still more, Rensburg made it clear that, it would be important for future research to attend to criticisms leveled at the Bar-On measuring instrument, concerning the fact that the Bar-On EQ-I:YV (Bar-On & Parker, 2000) is seen by some researchers as a measurement of skills or personality traits rather than a measure of ability. Finally, Rensburg noted the limitation of an ex-post facto research type. The correlational design of this study was a good example of non-experimental research, and therefore it was not possible to conclude that a low score on EI is necessarily the cause or effect of a high level of MPA, or vice versa.

The importance of this review for the current study, especially for the methodology, is enormous. The review prompts the need to be wary of the limitations associated with self-report instruments. In this current study, I also use self-report instruments. Such considerations of their limitations are therefore, fully considered in drawing any conclusions that made in this study. Again, this review identified the problem with a small homogeneous sample in such studies.

In this current study, therefore, I take an important cue and strive towards sampling a bigger and much more heterogeneous sample. Furthermore, the review of the available literature has given further support to the use of the MSCEIT that this current study has adopted for measuring EI since it best measures EI as a distinct ability.

The conclusions made from the two main sets of studies reviewed above in relation to EI and aspects of music clearly indicate, that there are connections between aspects of music and aspects of emotional intelligence. In both studies, the music related variable helped the researchers to understand and gain greater insights into aspects of the EI models that they adopted and vice versa. Again, both studies highlight important factors that must be considered in further research related to this area. Factors such as gender, age, musical training are for example, very essential. For this reason, the authors in both studies admit the need to use a bigger and a more varied sample in order that the nuances among groups during multiple comparisons can clearly stand out. Another important issue that the review of the two studies shows is that of being cautious about the interpretation of self-report measures. This is because; participants may not always be good at assessing their own selves, especially in psychological attributes. All in all, the review gave out important directions that helped me to strengthen the design of this current study.

Summary of literature review

In this review, pertinent and related literature on Musical Preference (MP) and Emotional Intelligence (EI) have been discussed. The introduction to the chapter set the tone for the discussion by acknowledging the importance of the whole exercise and presenting the structure of the review. Consequently, the review was done under sub-headings on MP and EI respectively.

On MP, the review focused on the factors that affect the preference of individuals for particular genres of music. Among the factors discussed are: age, gender, ethnic and cultural factors, socio-economic status (social class), specific characteristics of the music and other factors (individual, situational/contextual, occupation, peer group, home environment, media). The relationship between these factors and the focus of the current study was also discussed in the concluding paragraphs of each of the factors. Generally, these factors highlighted the amount of research that different scholars have already done in relation to musical preference. The factors provided a basis for interpreting the emergent data in this study and gave suggestions on the methods employed in this study. To increase the construct validity of these variable, theoretical foundations of MP was also discussed. The theories that emerged in support of the variation in the preference of individuals for particular kinds of music included general familiarity theories like the *mere exposure theory, social judgment theory*, and the *anchoring and adjustment heuristic* theory. The review went further to consider how these general theories have been explored in research on musical preference and how specific models for musical preference have emerged. Two of the specific models

that were discussed are the Wundt/Berlyne inverted-U model and the Hargreaves hypothesized inverted-U curve (see figures 7 and 8). These models provide some basis for explaining the musical preference of people. Basically, the models indicate that people prefer music that they are familiar with, and which gives them some optimal amount of information. When, eventually, this information is no more (because it has been over-exposed and there is nothing relatively new), the preference of the individual declines for the particular music.

On EI, I reviewed literature on the absence of a single universally accepted definition of the concept which appears to be a major problem. The review specifically discussed thirteen different definitions of the concept, which showed that the scope of the definitions differed. Whereas some were restrictive in their conceptualizations, others were overly broad and non-specific in the exact components that made up the concept, and others fell in the middle of these extremes. It became clear from the review, however, that irrespective of the nuances in definition, they tended to complement rather than contradict each other. Since the EI model adopted in this study views EI as a distinct intelligence, it became expedient to review literature on other existing models of intelligence in order to locate where EI lies in the broader domain of research on intelligence.

It became clear that EI shared some similarities with the concepts of some of the existing theories of intelligence, for example, social intelligence, primary mental abilities, multiple intelligence and successful intelligence (triarchic theory of intelligence). This done, I shifted attention to the historical perspective of EI by discussing the major researches, theories and works that directly preceded the

conception of EI. Figure 10 gives a picture of this historical development. Furthermore, I discussed three salient models of EI that have gained the most attention in research and in practice. These salient models were: emotional intelligence as leadership competencies, emotional intelligence as personality traits and characteristics, and emotional intelligence as a distinct set of abilities that constitute a unique form of intelligence.

Having already noted the seeming absence of research on the relationship between MP and EI, I turned to discuss two major studies on relationship between different aspects of music (recognition of emotion in music and music performance anxiety) and EI. The review of these two works further gave very relevant ideas towards shaping the research methods in the current study. These studies gave pointers to issues of gender, race, sampling, research instruments and other limitations that may negatively impact such studies.

In conclusion, the literature reviewed on the two variables indicates that, some of the factors that seem to affect musical preference are also very likely to affect emotional intelligence. Examples of these factors include age, gender, ethnic and cultural factors (language, different emphasis on acceptable emotional display rules, etc), individual factors and the like. With all the claimed importance of EI, exploring a variable that it is likely to have a relationship with, and that may help predict it, seems a worthwhile venture.

CHAPTER THREE

METHODOLOGY

Introduction

In this chapter, I discuss the general procedures designed and carried out in this study. I describe the gamut of major activities which were involved in the whole research process. Specifically, I address, in this chapter, the research design used in this study, the population and sample, the sampling procedure, the nature of the data collected, the research instruments used, validity and reliability, data collection procedure, data reduction procedure, data analysis procedure(s), the role I played as the researcher in the entire research process, the anticipated limitations in the study and suggested solutions to the limitations.

Research Design

There are, indeed, many different types and designs of research; each with its own peculiar expectation and practice. The choice of a particular design depends on, but not limited to: the nature of the research problem (and the questions that the research seeks to answer), the purpose of the study, the use of the results, the time-frame involved in the study (Neuman, 2003), the extent to which subjects in the study are (or are not) manipulated, and the level of discourse or generalizability (McMillan & Schumacher, 2001). Sarantakos (2005) couches

these factors that influence the choice of a research design a little differently. He writes, "… research designs vary according to the nature and purpose of the study, the type of population, the structure of the research, the number of researchers and research assistants, and the ideological affiliation of the researcher, among other factors" (p. 106). It is clear, therefore, that the selection of a research design for use in a study should be backed by a number of carefully considered factors. Using the dimensions spelled out above as a kind of checklist, the research design for the current study is vividly discussed below.

By function, this study falls within the description of applied research. Aside other qualities, applied research seeks to determine empirical relationships and analytical generalizations within a given field. It uses general discourse related to a given field, adds to research based knowledge in a given field and advances research and methodology in a given field (McMillan & Schumacher, 2001). The given field in the present study is Psychology in Music Education. The main terminologies used in this study bear on emotional intelligence and musical preference. The study aimed at determining the possible relationship that exists between the two variables in order to make analytical inferences for research and practice.

By the purpose of research, Neuman (2003) identifies three types of research: descriptive, exploratory and explanatory. Among these three, the present study fell more under exploratory research. In exploratory research, the researcher stems forth to find out the possibility of occurrence of a variable, or the possibility of a relationship among specified variables; based on educated

guesses, informed haunches or hypotheses. Classifying an exploratory study from the viewpoint of the objectives of a study, Kumar (2005) notes that "it is usually carried out when a researcher wants to explore areas about which s/he has little or no knowledge" (p. 10). As already mentioned in chapter one and stressed in chapter two of this study, practically nothing (or at most very little) is known (beyond mere unempirical speculation) about a relationship between musical preference and emotional intelligence. The subject is relatively uncharted and this forms the basis for the exploration. Wagenaar and Babbie (2004) lend their support by averring that "exploratory studies are often done when a researcher is examining a new interest, or when the subject of study is relatively uncharted" (p. 58). It is the results from an exploratory study that might prompt further in-depth descriptive or explanatory studies into aspects of the phenomenon that might emerge or be established. In the present study, my purpose was to find out if there was any possible relationship between musical preference and emotional intelligence. Thus, by purpose, the design adopted in this study was the exploratory research design.

According to the time-frame and the nature (and involvement) of samples used in a study, research may be longitudinal, cross-sectional or case study. The present study fell under the domain of cross-sectional research. The study involved sampling a cross-section of the subjects in the population in a comparably short-frame of time, soliciting responses from them, analyzing the responses and drawing conclusions. According to Johnson and Christensen (2000), "in a cross-sectional study, data are collected from the research

participants at a single point in time or during a single, relatively brief time period (i.e., a period long enough to collect data from all of the participants selected to be in the study)" (p. 297). They go on to suggest the multiple groups or types of people who are normally involved in this kind of study. They write, "data in a cross-sectional study might be collected from males and females, from persons in different socioeconomic classes, from multiple age groups, and from persons with different abilities and accomplishments" (p. 297). This is exactly what I did in this current study; I collected data from people with the above mentioned characteristics at single points in time. This is the extent to which the current study fell within the domain of cross-sectional research.

Again, this study was non-experimental in nature. Ary, Jacobs and Razavieh (2002) explain non-experimental quantitative research as a study in which "the researcher identifies variables and may look for relationships among them, but does not manipulate the variables" (p.24). Indeed, this was exactly the case in this present study. The aim was to look for relationships among identified variables (musical preference and emotional intelligence) without manipulating any of them. Commenting on a type of non-experimental research (causal-comparative research), Johnson and Christensen (2000) avow, "in this type of research the researcher studies the relationship between one or more *categorical* independent variable(s) and one or more quantitative dependent variables" (p.25). Again, this was exactly the case in this present study. The study was on the relationship between a categorical independent variable (musical preference) and a quantitative dependent variable (emotional intelligence). What made this study

particularly non-experimental however, was that the independent variable was not manipulated and there was no random assignment to groups. "Non-experimental modes of inquiry describe something that has occurred or examine relationships between things without any direct manipulation of conditions that are experienced" (McMillan & Schumacher, 2001. p. 33). Since I examined the relationship between musical preference and emotional intelligence in this study without any direct manipulation of conditions that were experienced by the subjects, it was non-experimental in nature.

Furthermore, the present study was a classical example of correlational research. "Correlational research is concerned with assessing relationships between two or more phenomena. This type of study usually involves a statistical measure of the degree of relationship, called correlation" (McMillan & Schumacher, 2001. p.34). In correlational studies, two distributions that represent two variables are normally involved. The two distributions are normally made up of paired scores from a single group of individuals. The researcher is interested in how the scores in the distributions correlate or covary (Wiersma, 1986). Correlation shows more than just relationships, it also shows the direction and the strength of the relationship. "Correlational research seeks to examine the strength and direction of relationships among two or more variables" (Ary, Jacobs & Razavieh, 2002). Considering the present study, there were two variables (musical preference and emotional intelligence) on which data were collected from the same respondents. This gave two different distributions of scores. The distributions were subjected to statistical analysis and a measure of the degree of

relationship was used to determine the extent to which the two variables co-varied or correlated as well as the direction of the variation. Creswell (2002) provides further support to the correlational nature of this study by commenting that in correlational research designs, "investigators use a correlation statistical technique to describe and measure the degree of association (or relationship) between two or more variables or sets of scores" (p. 361) without attempting to control or manipulate the variables involved. Because this current study aligned itself to the foregoing descriptions, it can be classified as a correlational design.

Finally, this study, according to the mode of inquiry (Kumar, 2005), adopted the mixed method approach. This refers to "research in which the investigator collects and analyzes data, integrates the findings, and draws inferences using both qualitative and quantitative approaches or methods in a single study or a program of inquiry" (Tashakkori & Cresswell, 2007). According to this approach to research, the use of more than one method of research can be beneficial. The quantitative and qualitative research approaches and the specific quantitative and qualitative research methods are seen as complementary. When aspects are drawn from both qualitative and quantitative research approaches, it makes the study stronger. This is supported by Johnson and Christensen (2000) who indicate that "when a research finding has been demonstrated using more than one type of research, one can place more confidence in it" (p. 31). In the words of Miles and Huberman (1994), "… numbers and words are *both* needed if we are to understand the world" (p. 40). These authors (Miles & Huberman,

1994) proceed to offer a detailed list of reasons to combine methods, as given by Sieber (1973).

> Quantitative data can help the qualitative side of a study during *design* by finding a representative sample and locating deviant cases. It can help during *data collection* by supplying background data, getting overlooked information, and helping avoid "elite bias" (talking only to high-status respondents). During *analysis* quantitative data can help by showing the generality of specific observations, correcting the "holistic fallacy" (monolithic judgments about a case), and verifying or casting new light on quantitative findings.
>
> Looked at the other way, qualitative data can help the quantitative side of a study during *design* by aiding with conceptual development and instrumentation. They can help during *data collection* by making access and data collection easier. During *analysis* they can help by validating, interpreting, clarifying, and illustrating quantitative findings, as well as through strengthening and revising theory (p. 41).

The foregoing strengths inherent in combining both qualitative and quantitative approaches to research formed the basis for using the mixed method approach in this study. I sought, in this study, to critically focus on the variables

using multiple lenses in order to make the best out of it as possible. In this study, there were a number of research hypothesis which were tested statistically (quantitatively) and a number of research questions which were answered descriptively (qualitatively). To sum up on the usefulness of using a mixed-method approach, Kaplan (1964) in Miles and Huberman (1994) states, "quantities are of qualities, and a measured quality has just the magnitude expressed in its measure" (p. 40). This implies that, qualitative and quantitative modes of inquiry are very much related. Identifying and fusing the strengths of each approach leads to the gaining of a better understanding of the phenomenon under investigation. This is what Creswell (2006) means when he posited that "mixed methods research provides strengths that offset the weaknesses of both quantitative and qualitative research" (p. 9).

There are different types of mixed methods research according to a) the time order for data collection, b) the emphasis or priority on a particular approach, and c) the procedure for combining and analyzing the emergent data from the different sources (see Creswell, 2003). Following the criteria above, the mixed method approach employed in this study was a concurrent, quantitative-dominant (Johnson & Onwuegbuzie, 2007), quasi-explanatory mixed method approach (respectively). The data for the study were collected with different research instruments concurrently. In analyzing the emergent data however, the qualitative procedure of observational particularism (with respect to context, nature of respondents, circumstances of administration, language, normalization sample, specialized vocabulary, and so on), as well as the use of thematic analysis (see

Braun & Clarke, 2006) and some descriptive statistics were employed to help explain the emergent results solicited by the otherwise quantitative-oriented instruments. These processes justify the selected mixed methods approach described above. The figure below (Figure 13) gives a visual display of the mixed-method approach that was employed in this study.

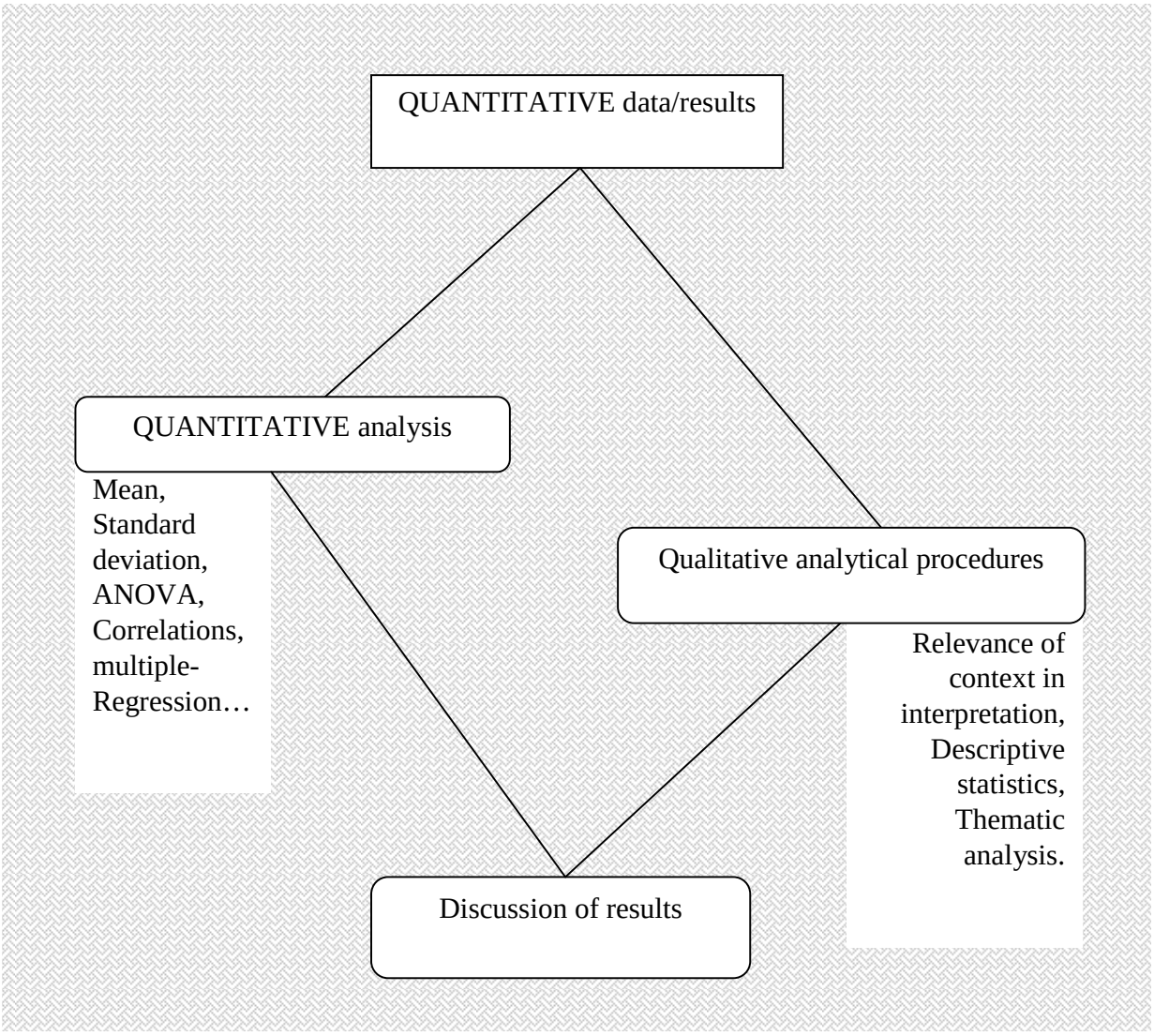

Figure 13: Visual display of the adopted mixed- method approach

As far as the data collection and analysis processes were concerned, the exact steps that were taken can be seen from figure 11. After the collection of the data on the two variables (musical preference and emotional intelligence), both quantitative and qualitative analytical procedures were employed in making sense of the emergent data and subsequently discussing the results. Being a quasi-explanatory mixed method study however, the qualitative analytical procedures employed were to help explain the quantitative results in terms of logic, literature and theory. The words in upper-case (in figure 11) indicate the quantitative sway of this particular mixed method design.

All in all, the research design used in this study was an eclectic one, embodying applied (function), exploratory (purpose), cross-sectional (time frame), non-experimental (extent of subject and variable manipulation), correlational (nature) and mixed-method (mode of inquiry) approaches. These designs, notwithstanding, the dominant overall research design can be said to be the mixed-method design. However, the strengths of all these types of research were fused in the design and execution of the current study.

Population

The population for a study is the larger group from which the sample is drawn and for which inferences (depending on the kind of study) may be made from the selected sample. Members in the population are supposed to share some common characteristics (Glenberg, 1988/2010) which a carefully chosen sample must reflect. In this study, the population (the larger group from which the

sample was drawn) was University undergraduate students. For this reason, undergraduate students in one of the public universities in Ghana formed the target population. Members in this population shared some common characteristics such as: being undergraduate students, having acquired some form of prior education (at least high school or equivalent), possibility of being 17 years and above (the minimum age required to fill out the MSCEIT – the questionnaire on emotional intelligence).

The selection of this population was not without reasons. At this level (above 17 years, having acquired some level of education; at least secondary school) it was assumed, that people have acquired adequate skill and vocabulary to be able to describe, to a fair extent, their preferences and experiences. This was a basic requirement towards achieving the purpose of this study.

Sample

In all, a sample size of 100 was selected from the population. This sample size was determined using the sample size calculator presented as a public service of the Creative Research Systems survey software (Creative Research Systems, 2012. See overview in appendix E). This software, like others, calculates the sample size on the proviso that the confidence level, the confidence interval and (if not extremely large or unknown) the population size are provided. Using a confidence level of 95% (Wiersma, 1986; Glenberg, 1988/2010), a confidence interval of 10 and a population size of 15,500 (which was about the population size of the selected University in the 2011/2012 academic year during which time

the fieldwork took place) the sample size for this study was computed. Actually, these inputs resulted in a sample size of 95; but the size was increased to 100 to make room for any errors that may stem from the filling out of the questionnaires.

Addressing the size of the sample, Glenberg (1988/2010) believes that a sample size of even 30 (irrespective of the population size) randomly selected from the population, is large enough to exhibit important characteristics of the population from which it is selected. Even Wiersma (1986) suggests a lesser sample size. It appears that such authors who mention small sample sizes are more concerned about the rigor involved in the sampling more than the number. They rather emphasize the procedures used in getting the sample; that once the sampling is well-done, the resultant sample will be appropriate. A representative sample is one that captures all (or at least most of) the attributes in the target population. This issue on representation is justified by Ary, Jacobs and Razavieh (2002) who affirm that, "the most important characteristic of a sample is its representativeness, not its size" (p. 171).

Stemming from this, the sample in this study was meticulously selected in order that they reflected (if not entirely) a greater part of the characteristics of the target population. The selection of the participants for this study was informed by the purpose of this study as well as the studies that were reviewed in the literature. From the review, it became clear that such characteristics as age, gender, social class, ethnic and cultural factors, musical training and the like, are worth considering in the selection of the sample if the purpose of this study was to be achieved. In the light of this, a conscious effort was made to randomly sample

participants that exhibited this variety. Consequently, the sample of 100 was made up of 25 people from each of the four undergraduate levels, 50 non-music students and 50 music students, and 50 males and 50 females. It can also be seen that apart from the variety, the sample size in this study was bigger than those of the two major related studies that were reviewed in chapter two. This was because both studies recommended the use of a bigger sample in similar future studies. In sum, the sample used in this study was "as large as necessary, and as small as possible" (Sarantakos, 2005. p.170).

Sampling techniques

This study employed a number of probability sampling techniques as well as a mixed-method sampling technique. The main probability sampling techniques used were: the dependent within-subject sampling, disproportionate stratified random sampling and the independent-within-sample random sampling. The mixed-method sampling approach used was the stratified purposive sampling. These techniques and how they were used in this study are described respectively in the subsequent paragraphs below.

Samples from two (or more) populations are dependent when the scores in one of the samples are related to the scores in the other sample(s). The scores are related if there is a logical method for pairing each score in one sample with a score in the other sample (Glenberg, 1988/2010). The two most common types of dependent sample are the matched-group sampling and the within-subject sampling. The later, rather than the former, was employed in this study. There

were two distributions (populations) of scores; one for each of the variables. Whereas one distribution helped in telling the musical preferences of the participants, the other distribution helped in describing the emotional intelligence of the participants. These should have called for the selection of different samples (for the separate studies). However, the purpose of this study was to find out the relationship between the two variables. Therefore, the same participants contributed to both distributions. This type of dependent sampling is called within-subject sampling (Glenberg, 1988/2010). It provided a logical method for pairing each score on the two variables. Therefore, the musical preference of a sampling unit could logically be compared to his or her emotional intelligence score. According to Glenberg (1988/2010), dependent sampling is "the only type of sampling amenable to regression analysis". This study also sought to perform regression analysis; hence the choice of this sampling method was not only relevant, but a requisite.

Considering the importance of selecting a sample with a wide variety in their characteristics, the suitability of the stratified random sampling technique in this study could not be underplayed. The survey population for this study was undergraduate students. In order that, the sample really reflected this population, a conscious effort needed to be put in place to ensure this. Therefore, the undergraduate students were sampled according to the levels (100, 200, 300 and 400). The levels thus, formed the strata from which the sampling units were drawn. A total number of 25 students were drawn from each stratum (level) in the selected university. This was disproportionate because the different levels did not

have the same number of students. Assigning a fixed number therefore, gave the different levels different percentages of representation in the study. However, this did not affect the validity of the study; it rather ensured that students from all the levels were duly represented. A secondary stratum that was considered was that of gender. This was also to ensure that both males and females were adequately represented. The equal number of males and females (50 each) that was eventually selected was also disproportionate to the actual percentages of either gender in the specified population. Again, stratified sampling was employed in the selection of music majors and non-music major students; using the course areas as a stratum. This was to get participants that varied in their musical training. Considering the fact there are many different naturally occurring sub-groups from the population that could have constituted different strata for sampling, for example: religion, ethnicity, halls of residence, faculties, and so on; but only the strata of levels, gender, and musical training were used point to some kind of purposive underpinnings in this general stratified sampling approach. The selected strata was chosen on purpose (based on the purpose of the study and the findings in the literature review); and this becomes a typical example of the mixed-method sampling procedure described as stratified-purposive sampling (Kuzel, 1992; Patton, 1990). This sampling approach illustrates purposefully selected sub-groups and tags them in specified strata so that random selection of subjects is undertaken within each of the strata to enhance comparison.

The next type of sampling that was used in this study (after putting the members in the target population into different strata) was the independent-

within-sample random sampling. This study aimed at making careful and subtle inferences from the sample to the population. Glenberg (1988/2010) avers that, "only random samples can be used to make inferences about the population." Many probability (random) sampling techniques are however, not random enough in the true sense of the word; if random samples are supposed to give an equal opportunity to every member of the population to be included in the study. In a systematic random sampling for example, the choice of subsequent units depend on the prior selection of other units after the sampling interval has been calculated. Therefore, once the sample interval is known and the first subject is selected, it becomes quite predictable who/what the next selection will fall on. Independent-within sample random sampling, however, is random in the true sense of the word. Every member of the population has an equal, calculable, non-zero chance of being selected and included in the study. The selection of subsequent units does not depend on the prior selection of others. A good apotheosis of this sampling technique is the lottery-with-replacement method. For this reason, it was employed in this study. Such a sampling technique carried with it the advantage of avoiding many biases that could have stemmed up in sampling, and provided a good representative sample from the survey population.

In sum, this study aimed at sampling participants that exhibited as many characteristics of the population as possible, and at the same time participants that satisfied the dictates of the purpose of the study.

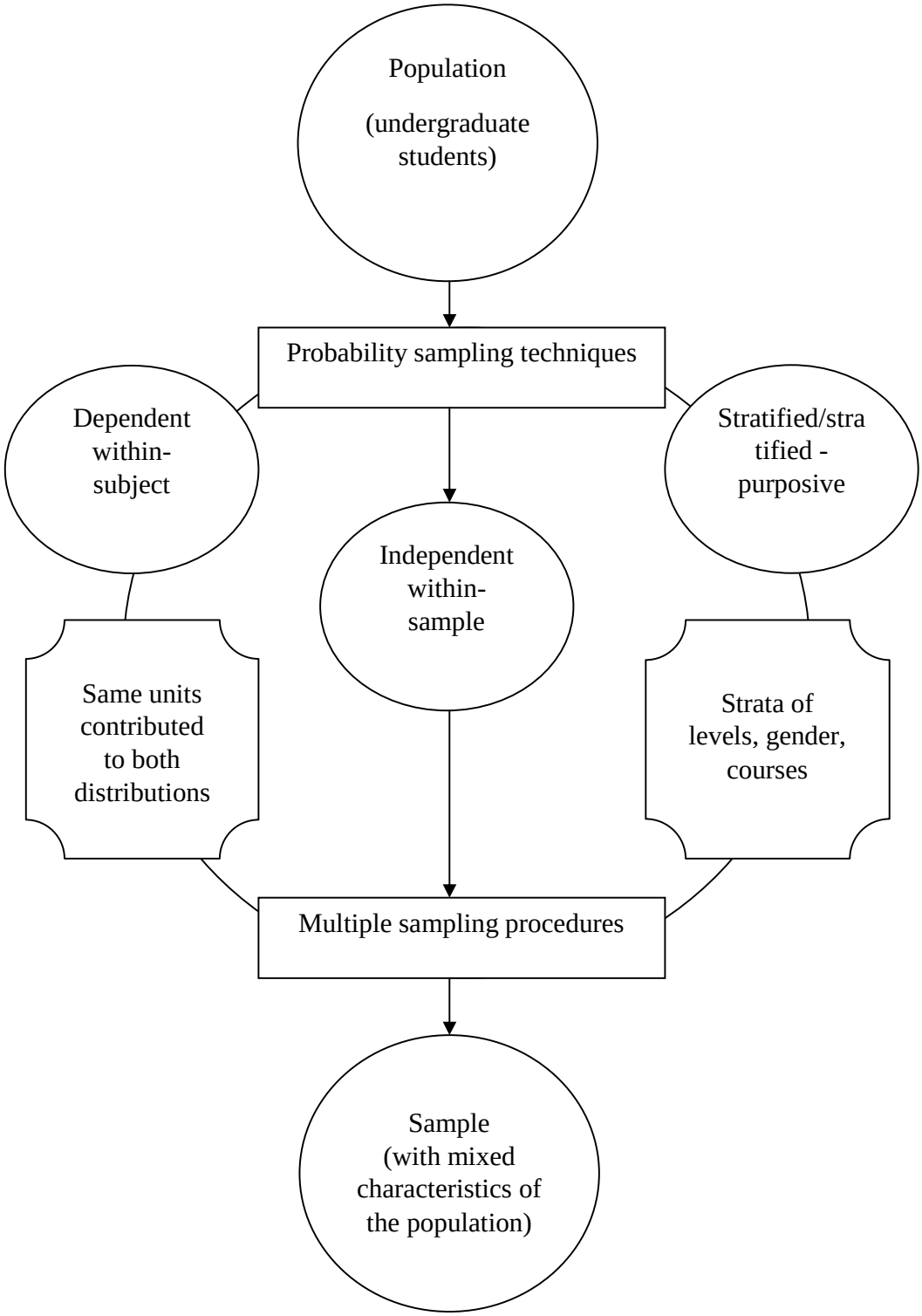

Figure 14: Sampling techniques employed

The selection of such a sample was achieved through the fusion of three major probability sampling techniques; namely, the dependent within-subject sampling, disproportionate stratified random sampling (extended and modified into the stratified-purposive sampling) and the independent-within-sample random sampling.

Synthesizing all these different sampling techniques results in a multiple probability sampling procedure described by Teddlie and Yu (2007. p. 80) or the mixed purposeful sampling identified by (Johnson & Christenson, 2000). In figure 16, I give a visual display of the adopted probability sampling techniques employed in this study.

Sampling procedure

Having discussed the sampling techniques employed in the study, I now present a description that highlights the exact procedures through which the techniques were applied in selecting the exact sample units.

To begin with, I consulted the time-table unit of the University for a copy of the general teaching time table which also indicated the venues for the various lecture sessions for the semester. This served as the first sampling frame for the study. From this, various classes were selected using the independent-within-sample random sampling from each of the levels (the first stratum).

The next task was to consult the various registration officers in each of the departments of the selected courses to acquire the list of students in each of the courses selected. This constituted the second sampling frame for the second stage

of sampling. From this list, the stratified (in the strata of gender) random sampling and the lottery-with-replacement methods were used to select the number of respondents from each of the courses identified in each level. I also considered music students as against non-music students as a stratum so that I could get in the sample, music students as well as non-music students. This explains the purposive nature of the otherwise non-purposive sampling technique (the stratified sampling) as an example of a mixed-method sampling approach.

Permission was sought from the lecturers of the various courses selected, so that the names on the list of the selected students were announced during the lectures, so that such students would meet me (the researcher) afterwards. This was not very easy because in some instances, some students were absent from class and in other instances, some of the students whose names were mentioned, for some reason best known to them, refused to wait.

Subsequently, after getting the students who obliged to stay behind, I introduced myself and established the necessary rapport. I explained the purpose of the study to them and sought their consent to include them in the study; assuring them that their inclusion and responses will be treated with the utmost professionalism and confidentiality, and that their participation will be bound by the ethics that guide research in the University. I also introduced my research assistants to them before the instruments were administered.

Research Instruments

The main instrument that was used to solicit information from the sample units was the questionnaire.

Two different questionnaires were used in this study; one soliciting information on musical preference and the other soliciting information on emotional intelligence. Whereas the musical preference instrument (STOMP) was designed by Rentfrow and Gosling (2003), the questionnaire for emotional intelligence was designed by Mayer, Salovey and Caruso (2002). The STOMP (printed version) was taken first by each participant before the MSCEIT (online version). A detailed description of these instruments is given in the subsequent paragraphs below. Highlights of the instruments are also given in appendices B and C (for the STOMP and MSCEIT respectively).

The Short Test of Musical Preference (STOMP)

Systematically designed to solicit responses on the preference(s) people have for different musical genres, STOMP has been used extensively in many studies and seems to have achieved much. It was designed to assess music preferences at the level that naturally arises when people think about and express their music preferences (Rentfrow & Gosling, 2003). Based on the studies of Jellison and Flowers (1991), Rentfrow and Gosling (2003) designed the STOMP on the premise that,

> when people discuss their music preferences they tend to do so first at the level of genres and to a lesser extent

> subgenres and only later step up to broader terms (e.g., loud) or down to specific artists (e.g., Van Halen) or songs (e.g., 'Running with the Devil') (p. 1241).

Subsequently, Rentfrow and Gosling (2003) used a panel of five judges who were asked to list all the music genres and subgenres that came to mind. They also consulted online music stores (e.g., towerrecords.com, barnesandnoble.com) to identify additional genres and subgenres to supplement the initial pool. These processes resulted in the generation of 80 music genres and subgenres that varied in specificity, comprising 14 genres and 66 subgenres. Having verified these genres in a study with 30 participants, the final version of the instrument, called the Short Test Of Music Preferences (STOMP), was designed. It was made up of 14 music genres: alternative, blues, classical, country, electronica/dance, folk, heavy metal, rap/hiphop, jazz, pop, religious, rock, soul/funk, and sound tracks (this list of musical genres has increased to 23 in the new revised STOMP – see appendix B). The preference for each genre is rated on a 7-point likert-type scale with end points at 1 (not at all) and 7 (a great deal). Exemplar songs for each of the 14 initial music genres are given in appendix A. The list of exemplar songs for each of the musical genres is meant to help participants who are not too sure about the musical genres within which their most preferred music fell.

In a follow-up study with the STOMP, Rentfrow and Gosling (2003) made an exploratory factor analysis of music preferences and made the following observations: The genres loading most strongly on Factor one were blues, jazz,

classical, and folk music—genres that seem to facilitate introspection and are structurally complex—and this factor was named *Reflective and Complex*. Factor two was defined by rock, alternative, and heavy metal music—genres that are full of energy and emphasize themes of rebellion—and was named *Intense and Rebellious*. Factor three was defined by country, sound track, religious, and pop music—genres that emphasize positive emotions and are structurally simple—and was named *Upbeat and Conventional*. Factor four was defined by rap/hip-hop, soul/funk, and electronica/dance music—genres that are lively and often emphasize the rhythm—and was named *Energetic and Rhythmic*. The four names that stemmed from the factor loadings (reflective and complex, intense and rebellious, upbeat and conventional, and energetic and rhythmic) thus form the dimensions for discussing the musical preferences of people as solicited by the STOMP.

The test-retest reliability of STOMP "showed that preference for each of the dimensions remained stable across time, with retest *rs*_ .77, .80, .89, and .82 for the Reflective and Complex, Intense and Rebellious, Upbeat and Conventional, and Energetic and Rhythmic dimensions respectively" (Rentfrow & Gosling, 2003. p. 1242). The tables below (pages 137 & 138) give a display of the normative data for the four music preference dimensions of STOMP (table six) and some external correlates of the music preference dimensions (table seven). A preview of STOMP is displayed in Appendix B.

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Table 6: Normative data for the four music-preference dimensions of the Short Test Of Music Preference (STOMP)

		Whole sample				Male				Female			
Ethnicity		R&C	I&R	U&C	E&R	R&C	I&R	U&C	E&R	R&C	I&R	U&C	E&R
All ethnicities		(N =12,032)				(N = 4,525)				(N = 7,450)			
	Mean	3.87	5.00	3.74	3.99	4.10	5.03	3.46	3.77	3.72	4.98	3.92	4.12
	SD	1.49	1.46	1.28	1.51	1.43	1.43	1.20	1.48	1.51	1.47	1.29	1.52
White		(N =9,483)				(N = 3,635)				(N = 5,801)			
	Mean	3.85	5.08	3.70	3.85	4.08	5.10	3.40	3.65	3.71	5.07	3.90	3.99
	SD	1.49	1.40	1.28	1.48	1.42	1.39	1.18	1.44	1.52	1.40	1.30	1.50
Hispanic		(N =433)				(N = 164)				(N =268)			
	Mean	3.88	5.08	3.87	4.44	4.23	5.16	3.60	4.22	3.66	5.03	4.04	4.57
	SD	1.53	1.52	1.33	1.57	1.50	1.45	1.27	1.50	1.51	1.56	1.34	1.60
Asian		(N =866)				(N = 332)				(N = 534)			
	Mean	4.06	4.66	4.14	4.63	4.22	4.75	4.03	4.44	3.96	4.59	4.21	4.75
	SD	1.37	1.52	1.17	1.48	1.38	1.51	1.22	1.54	1.35	1.53	1.13	1.43
Black.		(N =283)				(N = 86)				(N = 195)			
	Mean	3.65	3.36	4.03	5.22	3.82	3.28	3.66	5.03	3.55	3.39	4.18	5.30
	SD	1.42	1.68	1.25	1.14	1.49	1.51	1.22	1.21	1.38	1.75	1.24	1.10
Other ethnicities		(N =808)				(N = 265)				(N = 539)			
	Mean	3.88	4.97	3.65	4.16	4.26	4.94	3.43	3.97	3.69	4.99	3.75	4.25
	SD	1.54	1.53	1.23	1.53	1.52	1.50	1.17	1.49	1.52	1.55	1.25	1.54

Note. R&C = Reflective and Complex (Blues, Classical, Folk , and Jazz); I&R = Intense and Rebellious (Alternative, Heavy Metal, and Rock); U&C = Upbeat and Conventional (Country, Pop, Religious, and Sound Tracks); E&R = Energetic and Rhythmic (Electronic, Hip-hop/Rap, Soul). All data are self-report.

Table 7: External correlates of the music preference dimensions

Criterion measure	*M* (*SD*)	Reflective and Complex		Intense and Rebellious		Upbeat and Conventional		Energetic and Rhythmic	
		S2	S3	S2	S3	S2	S3	S2	S3
Personality									
Big Five									
Extraversion	3.42 (0.85)	.01	−.02	.00	.08*	.24*	.15*	.22*	.19*
Agreeableness	3.80 (0.62)	.01	.03	−.04	.01	.23*	.24*	.08*	.09*
Conscientiousness	3.57 (0.64)	−.02	−.06	−.04	−.03	.15*	.18*	.00	−.03
Emotional Stability	3.11 (0.81)	.08*	.04	−.01	−.01	−.07	−.04	.01	−.01
Openness	3.75 (0.61)	.44*	.41*	.18*	.15*	−.14*	−.08*	.03	.04
Interpersonal dominance	1.52 (0.25)	.07*	.06*	.04	.06*	.05	.08*	.04	.05
Social dominance	2.70 (1.00)	−.16*	−.12*	.06*	.04	−.06*	−.14*	−.09*	−.10*
Blirtatiousness[a]	2.95 (0.70)	.00	.00	.01	.07*	−.04	.01	.08*	.11*
Self-esteem	3.05 (0.69)	.02	.00	−.02	−.01	.07*	−.05	.06*	−.04
Depression	0.87 (0.34)	.01	−.03	.03	.03	−.08*	−.07*	−.02	.04
Self-views									
Politically liberal	3.17 (1.22)	.15*	.09*	.03	.08*	−.20*	−.17*	.07*	.14*
Politically conservative	2.83 (1.21)	−.09*	−.03	−.04	−.03	.24*	.23*	−.06*	−.09*
Physically attractive	3.69 (0.91)	.00	−.03	−.04	−.05	.07*	.09*	.15*	.08*
Wealthy	2.86 (1.11)	−.04	−.06	−.03	.00	.08*	.05	.02	−.01
Athletic	3.33 (1.26)	−.07*	−.08*	.06*	.07*	.13*	.12*	.11*	.07*
Intelligent	4.22 (0.71)	.10*	.06*	.07*	.08*	−.05*	−.02	−.02	.01
Cognitive ability (Wonderlic)[b]									
Verbal	19.09 (3.72)	.19*	—	.19*	—	−.18*	—	−.01	—
Analytical	6.11 (2.16)	.08	—	.05	—	.02	—	−.08	—
Column vector correlations		.977		.863		.923		.851	

Note. *N*s = 1,704, 1,383, and 118 for S2, S3, and SS2, respectively. Means and standard deviations are averaged across samples. Dashes in cells indicate data were not collected. S2 = sample from Study 2; S3 = sample from Study 3; SS2 = sub-sample from Study 2.
[a] Blirtatiousness = tendency to express thoughts and feelings as soon as they come to mind (from the acronym for the Brief Loquaciousness and Interpersonal Responsiveness Test [BLIRT]; see Swann & Rentfrow, 2001). [b] SS2.
* $p < .05$.

From Rentfrow and Gosling (2003) p. 1250

Because the STOMP has not been standardized within any Ghanaian sample, I took some steps to do some modifications in the instrument before administering it to the participants. First of all, I introduced a preliminary section where participants had to provide some biographical information about themselves - for example: gender, age range, years of musical training and so on. Again, I added some musical genres which are popular in Ghana and yet which were not in the list of musical genres on the questionnaire – for example: highlife and hip-life.

I looked at genres on the instrument that were very similar in style to these styles and classified them appropriately under the broader music dimensions. Finally, because I am aware of the fact that some of the musical genres (such as heavy metal, rock, soul) are not popular genres among Ghanaians, I extended the range of the likert-scale on which participants were to indicate their preferences to include '0'; so that participants will write a zero against any of the genres that they were not familiar with at all. The procedure for obtaining permission to use the STOMP are shown in appendix D.

Mayer Salovey Caruso Emotional Intelligence Test

The second instrument, the MSCEIT was designed by Mayer, Salovey and Caruso in 2002 (an improvement of the MEIS which was previously used). The instrument assesses the four-branch model of EI (perceiving, using, understanding and regulating/managing emotions) with 141 items that are divided among 8 tasks (two for each branch). The test yields seven scores: one for each of the four

branches, two area scores, and a total EI score. The two area scores are termed: Experiential EI (branches 1 and 2 combined), and Strategic EI (branches 3 and 4 combined). The various subtests of MSCEIT as given by Brackett and Salovey (2004) are discussed below:

The first branch of EI (Perception of emotion) is measured by asking respondents to identify the emotions expressed in photographs of people's faces (faces) as well as the feelings suggested by artistic designs and landscapes (pictures). Below the picture is a list of five emotions; the subject is asked to rate on a five-point scale how much of a particular emotion is expressed in the picture.

The second branch of EI (use of emotion to facilitate thought) is measured by two tests that assess people's ability to describe emotional sensations and their parallels to other sensory modalities using a non-feeling vocabulary (sensations), and identify the feelings that might facilitate or interfere with the successful performance of various cognitive and behavioral tasks (facilitation). Participants are given a list of adjectives pertaining to other sensory modalities and are asked to rate on a five-point scale from "Not Alike" to "Very Much Alike" how much a particular feeling is similar to the adjectives.

The third branch of EI (understanding of emotion) is measured by two tests that pertain to a person's ability to analyze blended or complex emotions (blends) and to understand how emotional reactions change over time or how they follow one another (changes). Participants are presented with a list of response alternatives and are required to choose the most appropriate.

Table 8: Reliabilities of the MSCEIT and Convergence Across Scoring Methods

Total Test Level Area Level Branch Level Individual Tasks	Mayer et al., (2002) Consensus-Expert agreement	Mayer et al., (2003) Consensus*	Mayer et al., (2003) Expert*
Total Test	**.98**	**.93**	**.91**
Experiential Area	**.98**	**.90**	**.90**
Perceiving/Identifying	**.98**	**.91**	**.90**
Faces	.97	.80	.82
Pictures	.93	.88	.87
Using/Facilitating	**.97**	**.79**	**.76**
Facilitation	.98	.64	.63

Table 8 continued.

Sensations	.95	.65	.55
Strategic Area	**.97**	**.88**	**.86**
Understanding	**.98**	**.80**	**.77**
Changes	.99	.70	.68
Blends	.98	.66	.62
Managing	**.96**	**.83**	**.81**
Emot. Management	.97	.69	.64
Emot. Relationships	.94	.70	.64
N for analyses	5000	2015-2112	2015-2111

*At the total, area, and branch levels, split half reliabilities are employed to accommodate for item heterogeneity (e.g., equal numbers of items of each task are placed on each half). Individual task reliabilities are coefficient alphas.

Adapted from Caruso, 2012 (MSCEIT certification pre-work)

The fourth branch of EI (management of emotion) has two subtests that assess how participants manage the emotions of others (social management), and how a person would regulate his or her own emotions (emotion management). A social management task may require participants to read a short story about another person, and then determine how effective several different courses of action would be in coping with emotions in the story. Participants rate a number of possible actions ranging from "Very ineffective," to "Very effective". Highlights of questions on the four branches described above are given in appendix C.

The MSCEIT is an objective test because there are better and worse answers on it, as determined by consensus or expert scoring (Brackett & Salovey, 2004). Table eight (pages 141 -142) gives the reliability coefficients of the MSCEIT and its convergence across the scoring methods. It was adapted from Caruso, 2012 (MSCEIT certification pre-work). The table shows very high reliabilities of the MSCEIT across time and across the two different scoring modes. The standardization group for the general consensus scoring was 5000 and that of the expert scoring was 23 experts who belonged to the International Society for the Study of Emotions (ISSE).

Since the MSCEIT is designed to measure a set of abilities that constitute a distinct form of intelligence, the scores are reported in the same way as any traditional intelligence scale; having an average score of 100 and a standard deviation of 15. A person's relative standing is judged based on this, so that if an individual obtains a score of 115 and another obtains a score of 85, the two people

will be one standard deviation, above (84th percentile) and below (16th percentile) the mean respectively. All the subset results (the task level, branch level and area level) are scored in the same manner. It is however, significant to note that the MSCEIT compares "individuals against the normative sample, not with the population in general" (Mayer, Salovey & Caruso, 2002b, p.71).

Also, based on the fact that when an individual's results can vary in the test when the person takes the test again, the authors are cautious of the inherent variability and recommend reporting an individual test-taker's true ability at a 90% confidence interval or range. Again, since the MSCEIT scoring is predominantly based on North American data, the authors prompt test administrators who administer the test to samples from emerging or non-Western nations, particularly samples who are non-native English speakers, to be alert to the fact that cultural variation can lower the scores on the MSCEIT. This notwithstanding, Mayer and colleagues argue that the results on which the tests are based "suggest that the MSCEIT has cross-cultural applicability and utility" (Mayer, Salovey & Caruso, 2002b, p. 9).

In sum, two research instruments have been described: the Short Test of Music Preference (STOMP) and the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT). It is clear from the descriptions that these instruments have proven valid and reliable in many different studies over time for the respective variables they measure.

The main reason for using the MSCIET in this study was that, whereas there are different models of EI (as already discussed in chapter two), the ability

model was adopted in this study. In line with that, the instrument that measures EI as ability is the MSCEIT.

Also, the Short Test Of Music Preference was used in this study because the fundamental assumptions of music preference which formed the basis for the design of the instrument shared some similarities with the adopted definition of music preference in this study (see definition of terms). Rentfrow and Gosling conceive music preference as the ordinary, everyday music choices; what naturally arises when people think about and express their music preferences; a liking for a particular musical genre over other genres at a given point in time. The four dimensions of STOMP provided a good basis for discussing the emergent preferences of the participants in this study.

Furthermore, STOMP has been used in studies with variables which are similar to EI (e.g., Big Five personality Traits, interpersonal dominance, self-views, etc). Table eight (pages 141 – 142) gives evidence of the correlations in such studies. Finally, the normative and standardization sample of STOMP was made up of college students. This present study was also carried out among college students (undergraduates). The appropriateness of this instrument in this study therefore, cannot be overemphasized.

Procedure for data collection

The procedure for collecting the data in this study was subdivided into two stages: before the field, and in the field. The activities that went under each of the stages are described below:

Before entering the field

Having clarified and set the research topic into perspective, I ensured that the various instruments for the data collection were acquired and organized. This process involved the printing out of the STOMP (after the necessary permission had been granted by the Test authors) and the setting up of online templates that generated access codes and passwords in the Multi-Health Systems scoring organizer software for the administration of the MSCEIT. I also made the necessary modifications in the STOMP in order to satisfy the true purpose of my study.

Afterwards, I organized an orientation for the two research assistants who helped in the sampling and data collection processes of the study. In their orientation, they were made aware of the aims of the study and were assigned specific roles that they were to play. To guide them in the execution of their duties, a small handout that explained the aims of the study, their specific roles, the nature of the research instruments, the nature of the samples and the modes of administration was given to each of them and discussed.

They were also given an overview of some of the ethics in research. Among the ethical issues included: respect for subjects, getting subjects' informed consent to participate in the study, not interfering with the responses of subjects, not making promises of rewards for participants, reporting any unusual cases, and ensuring the privacy and confidentiality of participants. In addition to these, I personally administered the questionnaires to the research assistants as a form of demonstration to them on what they were expected to do.

In the field

Whiles in the field, I sought the necessary permissions, assembled the needed sampling frames and drew out the sample units (with the help of the trained research assistants).

I then explained the study to the selected participants, established the needed rapport, introduced the research assistants, and sought their required consent to participate in the study. When this was done, the STOMP (printed version) was distributed to them (with the aid of research assistants). The participants were given an orientation on how they were to complete the MSCEIT online; using the access codes and passwords that were provided to them on the front page of the STOMP which had been distributed to them. Extra attachments which contained exemplar songs for the genres mentioned in the STOMP were also distributed to the participants before they were given enough time to fill out the details of the questionnaire. This additional attachment (shown in appendix A) was to help participants cross-check the preferred musical genres which they were not too sure about. After participants had filled out the questionnaires, all the printed copies were collected, counted and arranged for further processing (coding, entry and analysis). Participants were given some refreshment as a gesture of appreciation for accepting to participate in the study.

Role of the researcher

The role of the researcher as a 'vertical monolist' has been addressed by Miles and Huberman (1994). This implies that the researcher (mostly in

qualitative research) is instrumental and fully involved in every stage of the research. The researcher in this study was no different. To equip myself for this task, I took a number of steps to help me get better prepared. The following are some of the experiences which enabled me to pursue this study effectively.

To begin with, I enrolled in advanced research methods courses in both qualitative and quantitative research approaches run by experts in either field. To get hands on application of these paradigms and modes of inquiry, I assisted (in different ways) qualified professors in undertaking a number of research projects, and I have also taken the lead in conducting a number of researches in my field, as part of the requirements of my terminal degree. These practices have given me adequate exposure in the designing and carrying out of research, and also given me a greater insight into some of the ethics of research.

Also, for the sake of this particular study, I attended a workshop on the use of one of my research instruments, and am now a certified administrator of the Emotional Intelligence test (MSCEIT). This workshop was a sequel to courses taken in psychological testing, test and measurement which formed part of the workshop's pre-work as well as the course work for the Doctor of Philosophy program in Music Education run by the Music and Dance Department of the University of Cape Coast. Some of the specific topics addressed in the course of the workshop were on the scoring of the MSCEIT, interpretation of MSCEIT results, and understanding the whole ability model of EI. As a requirement to being certified after the workshop, participants were to administer the instrument

to a client and interpret the results. This exercise put me in a better position to use the instrument in this research effectively.

With these prior experiences and preparations, the specific roles I played as the researcher in this study were: a) designing the study, b) acquiring research instruments and getting trained in how to use the instruments, c) selection and training of research assistants, d) selection of sample, e) administration of instruments, f) cleaning of data – coding, g) treating the data (entering, analyzing, organizing data), and h) writing the report.

Verification

A number of procedures were used to verify the authenticity of information provided by the respondents in this study.

First of all, I, after establishing the necessary rapport, explained what the respondents stood to gain if they honestly answered the questionnaire. For example, that their emotional intelligence scores (which is quite expensive if they had to pay and take it by themselves) would be made available to them at no extra cost apart from their agreement to take part in the study. This was to make sure, that the participants were as honest and as meticulous in answering the questions on the questionnaires as possible.

Secondly, the instruments that were used in this study had very high validity and reliability scores that had been demonstrated over the years. There were different questions on the questionnaire(s) which responses helped in cross-verification and triangulation; helping to weigh the evidence of some responses in

the light of other responses. Furthermore, the nature of the instruments used in collecting the data ensured that, the researcher effect on the responses given was put to absolute check. There was very little room for the researcher to interfere with the responses of the participants.

Thirdly, the researcher, to verify the quality of information, employed multiple lenses in viewing the responses. The researcher considered the meaning and interpretations given by the respondents according to the meaning they make in themselves (inductive), how they relate with the literature and to the broader framework of backing theories (deductive), and how they complement expert opinion (parallel analysis). This stresses the need for using the mixed-method approach in this study.

Furthermore, since the MSCEIT was administered online, it corrected the errors that could possibly stem up if a paper-and-pencil format was used and later entered for analysis. The scoring of the MSCEIT was also done by an expert body of scholars; the Multi-Health Systems (the test publishers themselves). Therefore, there was no room for any bias my side as the researcher.

Also, participants were required to provide biographical information on both research instruments. This was to help check for consistency in the responses and also to help match the responses of participants in the two tests. For example, if a participant wrote a different name, gender or age on both instruments, that would indicate inconsistency and that particular participant's entry would not be scored at all.

Finally, in order to ensure that errors that could stem from entering the large amount of information on the computer were minimized, each of the responses on the musical preferences of participants was entered twice by different research assistants. The two entries were then compared to make sure that they were consistent and representative of the responses given by the participants before the analysis of the data proceeded.

Representation

Problems of representation often stem from what Miles and Huberman (1994) describe as *pitfalls*. These (three of them) according to them are: a) sampling non- representative informants b) generalizing from non-representative events or activities, and c) drawing inferences from non-representative processes. Being fully aware of these pitfalls that border on representation in research, I took a number of steps to ensure adequate representation in this study.

To begin with, I used a relatively large sample size (compared to the similar studies I reviewed in chapter two) selected randomly from the population. This was consistent with the demands of exploratory research and was required if there are intentions of making inferences, no matter how subtle, towards the population. Large sample sizes are more likely to be representative of the population from which they are drawn (Glenberg, 1988/2010). There was also great variety of characteristics among the sample units since they were carefully drawn on the basis of empirical propositions, nature of the topic, demands of the

research questions, the theoretical models adopted, the research design and the demand of the research instruments inter alia.

Also, I took a lot of care in making the necessary inferences. The procedures for testing the hypothesis were guided by writings of experts in the field (Glenberg, 1988; Sarantakos, 2005; Opoku, 2004). All the assumptions (on population, sample and data) were carefully checked and satisfied before the necessary corresponding analysis and inferences were finally made.

Data analysis procedure

Generally, there were two major stages in the data analysis procedure. In the first stage (the preliminary analysis stage), the results of the individual variables (MP and EI) were presented and discussed separately. This was done using simple descriptive statistics such as central tendencies (particularly, means) and measures of dispersion (particularly, variance and standard deviation) as summaries of the effect sizes exhibited by participants on both variables.

The second stage (the main analysis stage) involved analytical procedures which were aimed at testing the preset hypotheses and answering the research questions. In all, there were three research hypotheses and four research questions. The first three research questions corresponded to the three research hypotheses in their respective order. Each research question was addressed after its corresponding hypothesis had been statistically tested, using the hypothesis testing steps prescribed by Glenberg (1988/2010).

The first three research questions (which corresponded to the three research hypotheses) aimed at finding out if there was any significant difference in the emotional intelligence and musical preferences of participants who either differed or shared preferences for different musical genres. The hypothesis that required testing by showing a relationship between the variables were, tested by computing both the Pearson's Correlational Coefficient (*r)* for the two variables and comparing the resultant scores (*p*) to the critical values obtained at a .05 alpha level, and also by using a multiple regression approach; computing an *F* statistic and checking the two-tailed significant value in the light of the R^2 (the amount of variance in the dependent variable that could be attributed to changes in the independent variable). This was to test if there were any statistically significant outcomes that could lead to the rejection of, or acceptance of the null hypothesis in each case.

The other hypotheses that sought to find out if there were significant differences in the variables were tested using ANOVAs (with Post-hoc tests – Bonferroni and Scheffe in some instances) and *t* tests.

Based on the outcomes of the hypotheses testing, the research questions were addressed in terms of inductive analysis (evidence gathered from the data and manifested by the outcome of the hypotheses), deductive analysis (top-down relationships of the outcomes to the available literature and theoretical foundations addressed in chapter two) and logic (the personal interpretations based on my own experiences as a researcher). The interpretation and discussion of the results took cognizance of a number of ecological factors, including: the

nature of the sample, the environmental constraints (as addressed in the limitations), the atmosphere in which the instruments were administered and the time participants took in answering the questions.

Another important analytical tool that I employed (particularly for the qualitative analysis of data) was the thematic analytical approach as proposed by Braun and Clarke (2006) for use in psychology. According to these authors, "thematic analysis should be seen as a foundational method for qualitative analysis" (p. 78). They define this analytical tool as "a method for identifying, analyzing and reporting patterns (themes) within data" (p. 79). A theme captures something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set. Considering the nature of the data that the questionnaires solicited and the predominantly quantitative nature of the mixed-methods design adopted, it is very easy to ignore important information that may be present in the data. This is because the use of statistical analytical tools may project many otherwise useful observations as statistically insignificant. This is where the thematic analysis becomes important; so it can account for all the useful details that the statistical analysis may find insignificant. Commenting on the advantages of using the thematic analysis in research, Braun and Clarke (2006) state, among other things, that thematic analysis "…. can highlight similarities and differences across the data set, summarize key features of a large body of data, and /or offer a 'thick description' of the data set, and can generate unanticipated insights" (p. 97).

These advantages were the main reasons for employing this analytical tool in this study.

In sum, both quantitative and qualitative analytical tools were used in this study. Whereas the research hypotheses were mostly tested using various statistical tools, the research questions were mostly addressed descriptively. The thematic analytical tool was used to identify major patterns that emerged from data and which could not be accounted for by the quantitative procedures.

Limitations

I anticipated the following limitations in this current study among others: ecological validity of instruments, appropriateness of vocabulary for discussing musical preference, the setback with the research design and the general problem with self-reporting instruments.

Ecological validity of instruments as a limitation in this study stems from the fact that, the instruments for measuring the variables in this study were both designed and validated on and by people in a different cultural settings altogether. Considering the EI variable for example, the expression of some emotions and the terminologies for describing some emotional expressions may be culturally specific. Granted this is so, the ecological viability of using the instrument in Ghana and outside America may be highly reduced.

Considering the STOMP also, some of the musical genres that are common in Ghana, for example highlife and hip-life were not found in the list of genres from which participants were to select. Also, the anticipated limitation of

lack of familiarity to some of the specified genres could not be overlooked. This anticipation stemmed from a previous study in which participants could not tell the type of music they preferred, although they knew the songs they preferred. Participants found difficulties in distinguishing between different types of music such as R&B and rock, jazz and blues, country and bluegrass, hip pop and hip-life, highlife, religious and gospel and the like. The favorite songs that many participants named did not particularly fall under the type of music that the same participants named. This only explained how low musical literacy was among the respondents.

Again, as far as the research design is a correlational design and an example of non-experimental, ex-post-facto research, it would not be possible or appropriate to conclude that emergent high or low EI score is the result of a particular musical preference. Thus, the conclusions that the research design permit would only be possibilities of relationship among the variables and not necessarily, actual relationships.

Finally, both instruments used in the study were self-reporting instruments which rely solely on the assumption that respondents are very honest and are well able to describe their preferences and emotions; which of course, may not necessarily be the case. Very little could be done to verify the truth or falsehood of answers provided by participants. For example, Gembris (2006) asserts :

> it is a peculiarity of preference research that evaluative statements about music that are based on verbal labels will be more negative than preferences reported after listening to an actual example. The

> reason is that verbal preferences seem to be influenced by social desirability to a greater extent than behavioral preferences. Verbal preferences therefore represent the publicly expressed musical taste of a peer group, while behavioral preferences represent a more *private* taste. Thus it is entirely possible for a student to generally dislike a genre like opera, but when confronted with a recording of, say, "Che gelida manina" from Puccini's *La Boheme*, be quite touched (p. 143-144).

In the above quotation, Gembris (2006) makes it clear the difficulty involved in using self-reporting verbal instruments in measuring musical preferences. In his view, the employment of a more behavioural approach in measuring musical preferences is comparatively more effective. This view notwithstanding, a verbal self-report measure of music preferences was used in this study. Hence, the associated limitation with the STOMP in collecting data on music preferences in this study must be considered in making sense of the emergent results.

Suggested solutions to limitations

The limitation of ecological validity was a difficult one to solve totally. However, the following measures were taken to reduce the errors that could have arisen in this direction.

The MSCEIT is an objective test because there are better and worse answers on it, as determined by consensus or expert scoring (Brackett & Salovey, 2004). In spite of the strong correlations between the scoring methods, emphasis was put on the expert scoring since the normalization sample used for the consensus scoring were quite different in their cultural orientation from the sample in this study. Also, the use of the large sample size was beneficial. Although the terms on emotions vary, they were likely to vary across culture than within culture. Therefore, since the instrument was administered within members of relatively similar cultures, there was likely to be a consensus on how different emotions are expressed and labeled. Thus, the scoring of the MSCEIT by the Multi-health systems was compared with the summary of the scores by the participants in this study. Again, a split-half reliability test was run to verify the extent to which the instrument was consistent within the selected setting in this study. The results helped in validating the instrument ecologically.

The second limitation which had to do with inadequate appropriate vocabulary to describe the musical preference and the non-familiarity to some of the musical genres on the STOMP informed the institution of some measures. A sheet with examples of songs and the categories they belong (such as shown in appendix A) was attached to each of the STOMP questionnaires as a guide. This sheet contained many popular composers and examples of their works put in their respective genres. Again, the questionnaires were administered in an environment where the researcher and some research assistants were present to provide assistance for any respondent who was not sure of the particular genre that his/her

preferred music belonged. Samples of songs in each of the genres on the STOMP were also played to respondents before they begun to fill out the questionnaire. Furthermore, I made some modifications in the STOMP to include musical genres such as hip-life and highlife. I also expanded the range of the preference scale and included the number '0'; so that for any musical genre that a participant was completely unaware of, the person wrote a '0' against it.

The limitations on the research designs and those on the self-reporting nature of the instrument also informed the nature of the conclusions that were made in the study. These limitations also partly led to the use of an alpha level of .05 instead of .01 in the testing of the hypothesis. Thus, an appreciable error margin was created to cater for the errors of limitations in the research instruments as well as any sampling errors.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND DISCUSSION OF DATA

Introduction

In this chapter, the data collected on musical preference and emotional intelligence through the use of the short test of music preferences and the Mayer-Salovey-Caruso emotional intelligence test respectively; are presented, processed and discussed. The chapter encompasses the three broad and interrelated processes of analysis, synthesis and representation (see Creswell, 2003). In terms of analysis, the different facets of each of the variables are spotlighted and discussed as they relate to the sample in the study. This level constitutes the first stage of the analysis (the preliminary analysis stage). At the level of synthesis, the component parts of the variables are brought together in order to show the general meaning, relationships and interconnections between them. The preset hypotheses and research questions generally direct the focus at this level. This stage constitutes the second stage of the analysis (the main analysis stage). At the level of representation, data is transformed into tables, figures and graphs to give visual summaries and provide aid in the discussions of emergent results.

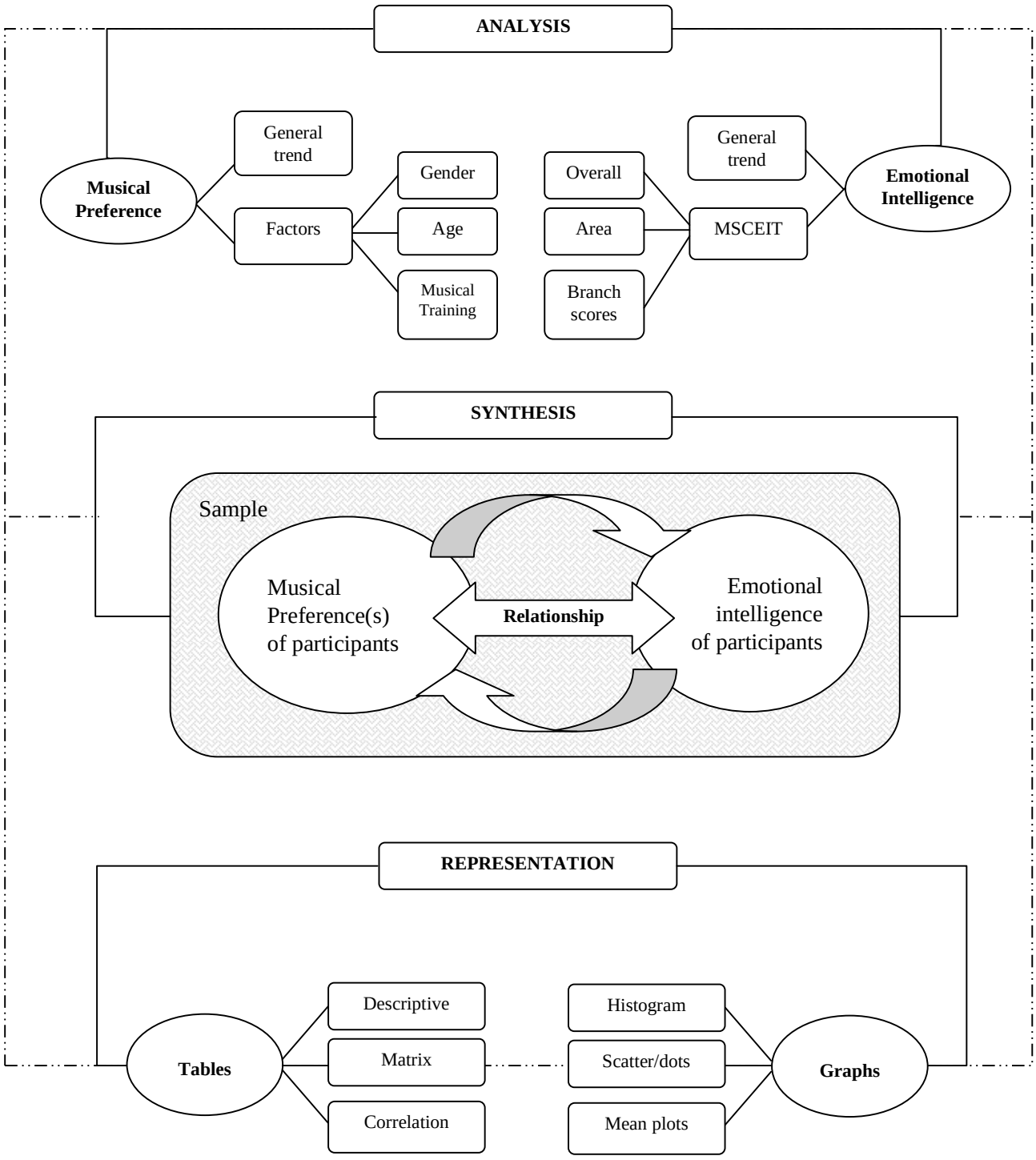


Figure 15: Organizational map for the analysis, synthesis and representation of data

Figure 15 gives an organizational map of this chapter and describes how the three processes (analysis, synthesis and representation) are specifically explored in this study.

General biographical data

Out of the 100 dependent-within-subject participants that were included in the study, 50 were males and 50 were females. Many (53%) of them were in the 22-26 years age group with the others (in descending order of frequency) between the age ranges of 17 – 21 (27%), 27-31 (12%) and finally, 32 and above (8%). Majority (64%) of the participants indicated that they have had no formal musical training. The remaining 36% of the participants however, indicated having received some form of formal musical training ranging between one year (minimum) to seven years and above. These were music students who were specifically sampled from the Department of Music, University of Cape Coast. All the participants were randomly sampled from the undergraduate population of the University of Cape Coast.

Musical Preference

Data on the musical preference of participants was procured through the use of Rentfrow and Gosling's (2003) Short Test of Musical Preference (STOMP). For the sake of any analysis that uses this instrument, the STOMP

classifies the various musical genres under four major dimensions according to an exploratory factor analysis done (by the designers of the instrument) to indicate which genres loaded strongly on four selected factors, as well as the inherent complexity and dominant style. The authors performed principal-components analysis on participant's ratings and used multiple converging criteria to decide on the appropriate number of factors to retain: the Kaiser rule, parallel analysis of Monte Carlo simulations, and the interpretability of the solutions (Rentfrow & Gosling, 2003). Following these criteria, a four-factor solution was retained. The four main musical dimensions that emerged from the whole process are presented in the words of the authors:

> The genres loading most strongly on Factor 1 were blues, jazz, classical, and folk music—genres that seem to facilitate introspection and are structurally complex—and this factor was named *Reflective and Complex*. Factor 2 was defined by rock, alternative, and heavy metal music—genres that are full of energy and emphasize themes of rebellion—and was named *Intense and Rebellious*. Factor 3 was defined by country, sound track, religious, and pop music—genres that emphasize positive emotions and are structurally simple—and was named *Upbeat and Conventional*. Factor 4 was defined by rap/hip-hop, soul/funk, and electronica/dance music—genres that are

lively and often emphasize the rhythm—and was named *Energetic and Rhythmic* (p. 1241).

Since 2003 when these categorizations were done, the authors have worked on and added many more genres under the four main identified broad musical dimensions. Table nine provides details of the revised sub-genre groupings.

Table 9: Categorization of the musical genres

Major dimensions	Sub-genres
Reflective and Complex	Bluegrass, Blues, Classical, Folk, International/Foreign, Jazz, New Age, Opera.
Intense and Rebellious	Alternative, Heavy Metal, Punk, Rock
Upbeat and Conventional	Country, Gospel, Oldies, Pop, Religious, Soundtracks/Theme songs
Energetic and Rhythmic	Dance/Electronica, Funk, Rap/Hip-hop, Reggae, Soul/ R & B.

General trend

From the responses of the participants, the Upbeat and Conventional dimension emerged as the most preferred musical dimension. Forty-eight percent (48 %) of the participants indicated a strong liking for the sub-genres that fall under the Upbeat and Conventional dimension. Among the sub-genres here, however, gospel was the most popular whilst soundtracks/theme songs was the least popular. The second most preferred musical dimension was the Reflective and Complex (35%). Among the sub-genres under this dimension, classical and blues emerged as the most preferred and the least preferred respectively. The third most preferred musical dimension was the Energetic and Rhythmic (10%) and the least preferred musical dimension (with just 1%) was the Intense and Rebellious. Of the sub-genres under the Energetic and Rhythmic, rap/hip-hop and hiplife were the most popular and the least popular was dance/electronica.

The sub-genres under the Intense and Rebellious dimension were mostly unfamiliar to the participants. Apart from rock (which was the most familiar in this dimension), participants mostly showed their unfamiliarity to alternative and heavy-metal music. It is interesting to note, that the least preferred sub-genres in the Upbeat and Conventional (soundtracks/theme songs) as well as in the Reflective and Complex (blues) were still more popular than even the most preferred sub-genre under the Intense and Rebellious dimension (rock). All in all, heavy-metal music was the most unpopular among all the sub-genres. Six percent (6%) of the participants however, indicated an equal preference for two different major dimensions, namely: Reflective and Complex together with Upbeat and

Conventional (5%) and Upbeat and Conventional together with Energetic and Rhythmic (1%).

Table 10: Ranking of musical genres

Musical genre	Mean preference score	Rank
Religious / Gospel	6.22	1st
Country	5.44	2nd
Classical	5.05	3rd
Pop / highlife	5.05	3rd
Folk / Traditional	4.81	5th
Blues	4.61	6th
Jazz	4.51	7th
Rap / hip-hop / hip-life	3.95	8th
Soul / funk	3.71	9th
Sound tracks / theme songs	3.60	10th
Rock	3.31	11th
Dance / electronic	2.98	12th
Alternative	1.80	13th
Heavy metal	1.71	14th

One interesting observation was that, the participants who indicated their most preference for Upbeat and Conventional music also indicated the Reflective and Complex as their next favorite. The opposite was also true

(participants with Reflective and Complex as the first on their list of preference also had selected the Upbeat and Conventional as the second on the list). This relationship did not exist between the two other music categories. Table ten shows details in the ranks of each of the 14 musical genres that were used in this study. The ranking was done with the aid of the mean scores obtained by participants under each of the genres.

Using the 14 musical genres specified in the table above, I also performed a factor analysis employing the Principal Components Analysis (PCA) extraction approach. The strength of the relationship among these genres, judging with the Kaiser-Meyer-Olkin (KMO) and Bartlett's test, was significant: KMO = .688, Bartlett's test of sphericity = .000 (see details in appendix R). It turned out, that the 14 musical genres (unlike in the study of Gosling and Rentfrow, 2003) loaded strongly on five (and not four) extracted factors at a 0.05 cut-off point (see Kaisen, 1974; Fiedel, 2005).

Factor one accounted for 26.28% of the total variance and was made up of Dance/Electronic, Rap/Hip-Hop/Hip-Life, Soul/Funk, Rock and Pop/Highlife. The musical genres that loaded strongly on factor two (14.19% of the total variance) were Classical, Blues, Country and Jazz. On factor three (9.40% of the total variance), Alternative as well as Heavy Metal music loaded strongly. Sound track/ theme song was the only musical sub-genre that loaded strongly on factor four (8.36 % of the total variance). Finally, Folk/Traditional and Religious/Gospel were the two genres that loaded strongly on factor five (7.84% of the total variance) (see appendix S for details).

These observations raise questions about the ultimate potency of the musical dimensions described in the STOMP. The musical genres that loaded strongly on factor two, with the exception of 'Country' were consistent with the sub-genres under the Reflective and Complex dimension. Similarly, the two musical genres that loaded strongly on factor three were both under the Intense and Rebellious dimension. The musical genres that loaded strongly on factors one, four and five were those that largely indicated inconsistencies with the labeling of Rentfrow and Gosling (2003) as far as the musical dimensions of Upbeat and Conventional as well as Energetic and Rhythmic are concerned.

Factors affecting musical preference

The literature that was reviewed on MP (Denisoff & Levine, 1972; Russell, 1997; Olsson, 1997; Gan, 1997; O'Neill, 1997; North & Hargreaves, 1997) brought to the fore certain important factors (example; gender, age, musical training, complexity of the music, and so on) that affect musical preference and which are worth considering in any research on the subject. As a result of this, I consciously sampled in such a way that some of these factors could be explored in this study as well. Three of these factors and how they turned out in relation to MP in this study are discussed below.

Gender

The literature on MP and gender (Olsson, 1997; Gan, 1997; O'Neill, 1997), clearly specifies marked gender differences in the preference for different musical genres. In this study however, such clearly marked musical preferences among gender were not observed.

Table 11: Differences in gender preferences for the four musical dimensions

Musical dimensions	df	Mean Square	F	Sig.
Preference for Reflective and Complex music	1	6.891	4.303	.041
	98	1.601		
	99			
Preference for Intense and Rebellious music	1	.360	.181	.671
	98	1.988		
	99			
Preference for Upbeat and Conventional music	1	.051	.049	.826
	98	1.041		
	99			
Preference for Energetic and Rhythmic music	1	1.440	.496	.483
	98	2.905		
	99			

The differences here were very mild and subtle. As far as preference for the four broad musical dimensions were concerned, there was no significant

difference ($F_{1,100}$=2.066. p = .154) between the preferences of males and females. Table 11 (previous page) gives details of the analysis of variances in the MP of males and females for the four broad musical dimensions.

Focusing on the specific sub-genres, Folk/Traditional music recorded the highest variance between males and females ($F_{1,100}$ = 4.36. p = .039), whilst Country music recorded the least variance ($F_{1,100}$ = .013. p = .908). On the whole, more males indicated preference for Classical, Blues, Folk/Traditional, Soul/Funk, Religious/Gospel, Alternative, Jazz, Heavy metal and Rock than females. More females also indicated preference for Country, Dance/Electronica, Rap/Hip-hop/Hip-life, Pop/Highlife, Soundtracks/Theme songs than the males. It appears, therefore, that whereas the males in this study have a general preference for Reflective and Complex as well as for Intense and Rebellious music, the females have a general preference for Upbeat and Conventional, as well as Energetic and Rhythmic music. These observed differences are, indeed, not newfangled at all. They are fully justified in the literature (see the review under 'Gender and musical preference' in Chapter Two). However, none of these observed differences in this study was statistically significant (refer to appendix F for further details of the gender differences in the preference for the sub-musical genres).

Age

Another factor that affects musical preference according to the literature (Denisoff & Levine, 1972, Russell, 1997) is age. The first table in Chapter two (Table two) provides a summary of many empirical studies that report differences in musical preferences among people in perceptibly differing age groups. In this study, each participant belonged to one of four different age groups: 17-21, 22-26, 27-31, 32 and above (these age groupings was informed by the literature; see Mayer, Salovey & Caruso, 2002). The number of people in each of the age groups was not equal (as can be seen from the biographical data above). In this study, the fact that the participants belonged to different age groups could not be inferred from their preferences for the four broad musical dimensions; in fact their preferences for the four were largely homogeneous (SD < 1.6 in each case. See figures in appendix G). Table 12 provides details of the variances between and within the different age groups as far as their preferences for the four musical dimensions were concerned.

There was no statistical significance in the musical preferences of the different people who belonged to different age groups ($F_{3,100} = .175$, $p = .913$). In other words, there was inadequate quantitative evidence to support a relationship between age and musical preference in this study. Age could not be used as a factor in predicting the musical preference of participants either. A Bonferroni post-hoc test that was employed in carrying out multiple comparisons of the preferences that the people in the different age groups had for the specific sub-musical-genres also revealed a no statistically significant difference ($\alpha = 0.05$).

On the whole, therefore, the finding on age and musical preference in this study was largely inconsistent with the reviewed literature, as far as the statistics are concerned. Notwithstanding the statistical insignificance in the relationship between age and musical preference, a closer observation of the two variables reveals certain interesting outcomes.

Table 12: Differences in age group preferences for the four musical dimensions

Musical dimensions	df	Mean Square	F	Sig.
Preference for Reflective and Complex music	3	.562	.333	.802
	96	1.689		
	99			
Preference for Intense and Rebellious music	3	3.012	1.553	.206
	96	1.939		
	99			
Preference for Upbeat and Conventional music	3	.587	.562	.641
	96	1.045		
	99			
Preference for Energetic and Rhythmic music	3	.677	.229	.876
	96	2.959		
	99			

It is significant to note, for example, that the age group with the biggest variety in their preferences (though not statistically significant) was the 32 and above. This observation seems quite logical since that group had an infinite range; compared to the age range of five between the other groups. A closer look at the mean preferences of the age groups in relation to the musical categories (see the means plots in appendix H) showed that, preference for Energetic and Rhythmic music declined with age.

The age group that showed the highest preference for Energetic and Rhythmic music contained the youngest participants (17 – 21). This was followed in descending order by the age groups 22 – 26, 27 – 31, and finally 32 and above.

Putting the findings in this study and those in the literature (Denisoff & Levine, 1972, Russell, 1997) side by side, there appears to be some points of convergence, although significant differences were not observed between the broader musical dimensions. Many of the studies that have reported age differences in musical preference have focused on differences between pre-adolescence, adolescence and adulthood (early and late). This means that, the insignificant differences observed in this study could have been due to the fact that the age differences among participants in this study were too close together. The range of five between the first three groups was too small to capture any great nuances that age may have to bring to the musical preference table. Even for those who were in the 32 and above group (only eight percent of the sample), there was no participant whose age was beyond 40 years old. Therefore, the fact

that the age range was small could have accounted for the homogeneity in the preferences of the participants.

Again, the stance of Russell (1997) that "musical tastes formed in youth tend to persist into and across the adult years…" could be helpful in the interpretation of the findings in this study. In a sense, all the participants in the study could be considered as adults (the youngest participant was 18). It is therefore, not out of place if their musical preferences were similar.

Musical training

The extent to which musical training matters as a factor affecting musical preference, according to the literature (Hargreaves, North & Tarrant, 2006), bears much on the level of complexity of the music. The scholarly convergence on this topic is that the day to day musical preference of people is mediated, among other things, by the level of complexity of specific musical genres (Hargreaves, North & Tarrant, 2006) which is a function of the two related and yet independent factors: musical training and familiarity. Without a doubt, the expressive organization of musical elements and the internal structure of music make some musical genres more complex than others. From the findings in the literature (see "specific characteristics of music" under the literature review in Chapter Two), there is a strong positive relationship between one's level of musical training and preference for music that is relatively comparably complex. In this study, therefore, I expected to find that the participants with some form of formal

musical training will have a high level of preference for the musical genres tagged under the Reflective and Complex dimension than those who had no formal musical training.

On the contrary, however, the analysis of the variance between the musical preferences of participants with some form of formal musical training and those without any formal musical training did not reach significance as far as the four broad musical dimensions were concerned. In fact, the mean score for each of the dimensions was fairly close between the participants and in no single case was there a standard deviation beyond 1.9 (see the detailed description in appendix I). This implies that the preferences of the participants, irrespective of their musical training, were quite similar. The level of musical training did not seem to influence the preferences that the participants had for the four broad musical dimensions. Table 13 displays the analysis of variance in the musical preferences of participants on the basis of their levels of musical training.

Although none of the differences was statistically significant, it is interesting to note that the participants with more than six years of formal musical training (seven and above) expressed the highest preference for three out of the four broad musical dimensions, namely: Reflective and Complex, Intense and Rebellious, and Upbeat and Conventional. The Energetic and Rhythmic dimension was mostly preferred by the participants who had no formal musical training (see the mean plots in appendix J). Thus, those participants at the tails (no musical training on one hand, and most years of musical training on the other hand) became the focus of attention.

Table 13: Differences in musical preference in relation to years of musical training

Musical dimensions	df	Mean Square	F	Sig.
Preference for Reflective and Complex music	3	3.564	2.235	.089
	96	1.595		
	99			
Preference for Intense and Rebellious music	3	2.398	1.224	.305
	96	1.959		
	99			
Preference for Upbeat and Conventional music	3	.785	.756	.522
	96	1.039		
	99			
Preference for Energetic and Rhythmic music	3	3.587	1.251	.296
	96	2.868		
	99			
Most Preferred musical genre	3	1.903	1.208	.311
	96	1.576		
	99			

In the three dimensions that were mostly preferred by participants with seven years and above of musical training, the participants who showed the least preferences were those who have had between one and three years of formal musical training. It is also interesting to note that the group that expressed knowledge of most musical genres on the questionnaire were those with seven years and above of musical training. These observations point to the fact that extended musical training could be an important factor that affects musical preference (as supported by the literature).

Since those participants with seven years and above of formal musical training were only few in this study (9% of the participants), it is quite possible that a larger number could have achieved a statistically significant result. Considering the specific musical genres, classical music had the highest variance with $F_{3,100} = 4.21$, $p = .008$ (the closest to reaching significance). The musical genre with the least variability in preference was Soul/Funk ($F_{3,100} = 164$, $p = .92$).

The following variable-ordered descriptive meta-matrix (table 13) gives a summary of the three variables (gender, age, musical training) and how they related to the musical preferences of the participants in this study. The differences in the musical preferences for both the broader dimensions and the sub-genres are indicated.

Emotional Intelligence

The dependent variable in this study (Emotional Intelligence - EI) was measured with the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT), version 2.0 (see a full description of this instrument in Chapter Three and highlights of the nature of questions in appendix C). The test, which was administered online, was hosted and scored by the Multi-Health Systems using the Expert consensus scoring, controlled for age, gender and ethnicity.

The scoring (of the MSCEIT) gives 15 important summative scores (eight - task scores, four - branch scores, two - area scores and one - overall score), as well as two other supplementary scores: scatter scores and bias scores that help to interpret the reliability of the total score and its direction. In this analysis, the overall EI score (also referred to as the overall EI quotient), the area scores and the branch scores of participants are discussed. The subscales (task scores) are not discussed because the authors themselves (Mayer, Salovey & Caruso, 2002), based on several studies conducted, admit that "the MSCEIT subtasks are less reliable…" The authors therefore, encourage test users to "place greater emphasis on the Branch, Area, and Total scores" (p.35). The bias scores are also discussed so as to see the general direction of emotional response among the participants; whether they assign more positive or negative judgments to perceived emotions.

Table 14: Variable-Ordered Descriptive Meta-Matrix -

Gender, Age and Musical Training and how they relate to the musical preference of participants

Variable	*Sub-categories of variable*	*Qualitative outcome*	*Quantitative outcome*
Gender	Male	Higher preference for classical, blues, folk/traditional, soul/funk, religious/gospel, alternative, jazz, heavy metal, rock. General preference for Reflective and Complex as well as Intense and Rebellious music.	Differences in the preference between males and the females did not reach statistical significance.
	Female	Higher preference for country, dance/electronica, rap/hip-hop/hip-life, pop/highlife, sound tracks, theme songs. General preference for Upbeat and Conventional as well as Energetic and Rhythmic music.	

Table 14 continued

Age	17 – 21	Indicated the highest preference for Upbeat and Conventional as well as for Energetic and Rhythmic music; and had the least preference for Intense and rebellious music.	None of the differences in the preferences for the different music categories between the age groups reached statistical significance.
	22 – 26	Showed the highest preference for Reflective and Complex music; and the second highest in preference for both Upbeat and Conventional and Energetic and Rhythmic.	
	27 – 31	Indicated the highest preference for Intense and Rebellious music and the least preference for Upbeat and Conventional music.	
	32 and above	Did not have the highest mean preference for any of the broad musical categories, but were the second age group in the preference both Reflective and Complex music, and Intense and Rebellious music. They indicated the least preference for Energetic and Rhythmic music.	

Table 14 continued

Musical Training	None	Indicated the highest in preference for Energetic and Rhythmic music, followed by Upbeat and Conventional, and then Intense and Rebellious.	Differences in the preference between participants with no formal musical training and those with varying years of musical training did not reach statistical significance.
	1 – 3 years	Reported the least preference for three of the broad musical categories: Reflective and Complex, Intense and Rebellious, and Upbeat and Conventional.	
	4 – 6 years	Demonstrated the least preference for Energetic and Rhythmic music, but showed the second highest preference for Reflective and Complex Music.	
	7 years and above	Indicated the highest preference for three out of the four broad musical genres: Reflective and Complex, Intense and Rebellious, and Upbeat and Conventional.	

Like other standardized Intelligence tests, "MSCEIT scores are computed as empirical percentiles, then positioned on a normal curve with an average score of 100 and a standard deviation of 15" (Mayer, Salovey & Caruso, 2002. p. 18). It must be noted that MSCEIT scores compare individuals to the normative group and not to the population in general. Table 15 gives descriptive guidelines for the interpretation of MSCEIT scores as provided by the authors. The score ranges and their corresponding qualitative tags are clearly shown in this table.

Table 15: Guidelines for Interpreting MSCEIT Scores

Emotional Intelligence Quotient Range	Qualitative Range
69 or less	Consider Developing
70 – 89	Consider Improvement
90 – 99	Low Average Score
100 – 109	High Average Score
110 – 119	Competent
120 – 129	Strength
130+	Significant Strength

General trend (Overall EI scores)

The overall EI score, also called the Total Emotional Intelligence Quotient score (Total EIQ), is a single figure that gives an overall summary of the respondent on the test. It is a handy summary of a respondent's performance in

the test. In all, the total EIQ scores obtained by the participants in this study were normally distributed. The test of normality was done using the Kolmogorov-Smirnov normality test and was verified by the Shapiro-Wilk test of normality (see table 16). Both tests produced significant results ($p > .05$ in each case); implying that the distribution of the scores was truly normal.

Table 16: Tests of normality

Variable	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Overall Emotional Intelligence	.048	100	.200*	.987	100	.415

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

The histogram with the normal distribution curve below (figure 14) gives a picture of the distribution of the total EIQ scores of participants in this study.

The distribution of the total EIQ scores had a mean of 81.70 and a standard deviation of 13.05. According to the guidelines for interpreting the MSCEIT scores, as shown in Table 14 (above), the EI of the participants was generally low, and was significantly different, t (100) = -14.02, $p < .001$, from that of the normalization sample. Many of the participants in this study obtained scores that were within the 'consider improvement' range. A mean score of 81.70 is less than one standard deviation below the mean; implying that the participants

in this study are on the average, a little below the 16th percentile. A number of factors could possibly account for this outcome.

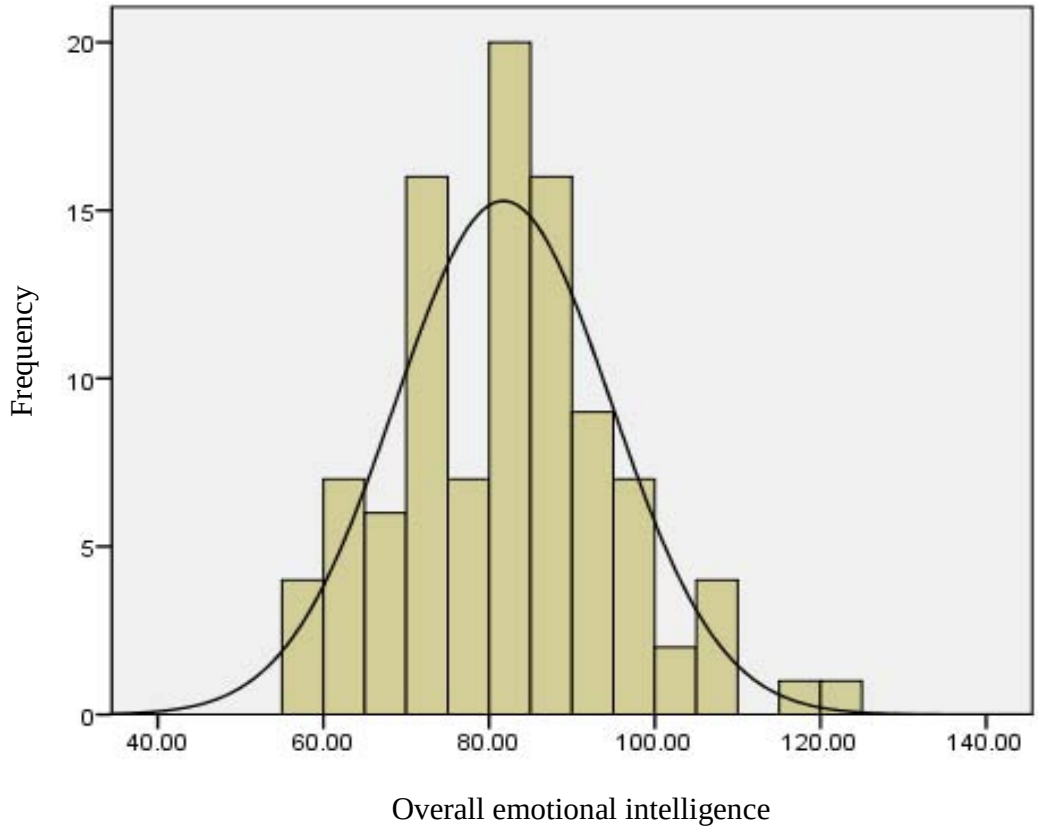


Figure 16 - Histogram (with normal distribution curve) showing the distribution of the Total EIQ scores of participants.

First of all, the language of the test (English) was not in the mother tongue of any of the participants in this study. This could have created a hindrance for some of the participants in the accurate description of their emotions. For example, in many Ghanaian languages (say Twi or Fante) the degree to which a

person feels an emotion is expressed through the use of intensity adverbs (such as ‘paa’ or ‘papa’) and can generally be judged through the actions of the person. The use of different words to describe different levels of the same emotion; such as annoyance – anger – rage, or apprehension – fear – terror (see other examples in Plutchik’s emotion circumplex in appendix Q) as participants were required to do in some sections of the test (see sample questions in appendix D; particularly the third branch), therefore, could have impacted the scores negatively.

Secondly, a look at the time that some of the respondents took to complete the test also provides some hint to another problem. The general test administration duration specified for the MSCEIT is between 35 to 45 minutes. However, it took some of the participants less than 20 minutes and others more than 90 minutes to complete the test. These extremes provide some caution in the interpretation of the scores as the contributing factors may have influenced the scores. A few of the participants who took a relatively longer time to complete the test, reported problems that they encountered with the internet facilities (regular breaks in internet connectivity) when they were taking the test. This, and the fact that some of the tests were administered during a time of the semester when many of the students were preparing to write examinations could all have had negative implications on the test results.

Thirdly, although primary emotions are relatively universal (Caruso, 2012), the display rules and the management strategies may, in some sense, differ across some cultures. This presupposes that the assumptions and experiences upon which the test was developed could have been different in some ways, from

the experiences of the participants in this study; in which case the results could be negatively affected. For example, in many Ghanaian cultures, similar to many other male-dominated societies (see Opengart, 2003; Russell and Fehr, 1994; Rotundo, 1993) there is an unwritten norm that forbids males to cry or more generally, to openly display emotions of pain or sadness. They are supposed to be the 'tougher ones' and thus are expected to be strong in times of pain to be able to console their female counterparts who are more 'free' to display such emotions. Socialized this way, many Ghanaians are likely to read more than a surface meaning, for example, of happiness that might be displayed in a smiling face. They are more likely to read a positive or negative meaning into an emotional display; knowing very well that the outward expression is not always necessarily the emotion that is felt within. Granted this is so, then the mean score of the respondents in this study is not far-fetched.

Age differences on the MSCEIT

As far as age is concerned, the total EIQ scores were not consistent with the findings in the literature. According to several analysis done to investigate age differences in the MSCEIT, the authors report that age "differences were localized, with young adults (< 25) scoring significantly lower than older groups" (Mayer, Salovey & Caruso, 2002. p.32). Contrary to this observation, this study recorded a direct opposite. The youngest age group (17 – 21) scored highest in the test, and the oldest age group (32 and above) scored the lowest in the test. Perhaps this could be attributed to the learned ability to mask emotions which

seems to develop with age. The mean plot below (figure 15) gives a pictorial of the foregoing discussion on the relationship between age and the overall EIQ of participants.

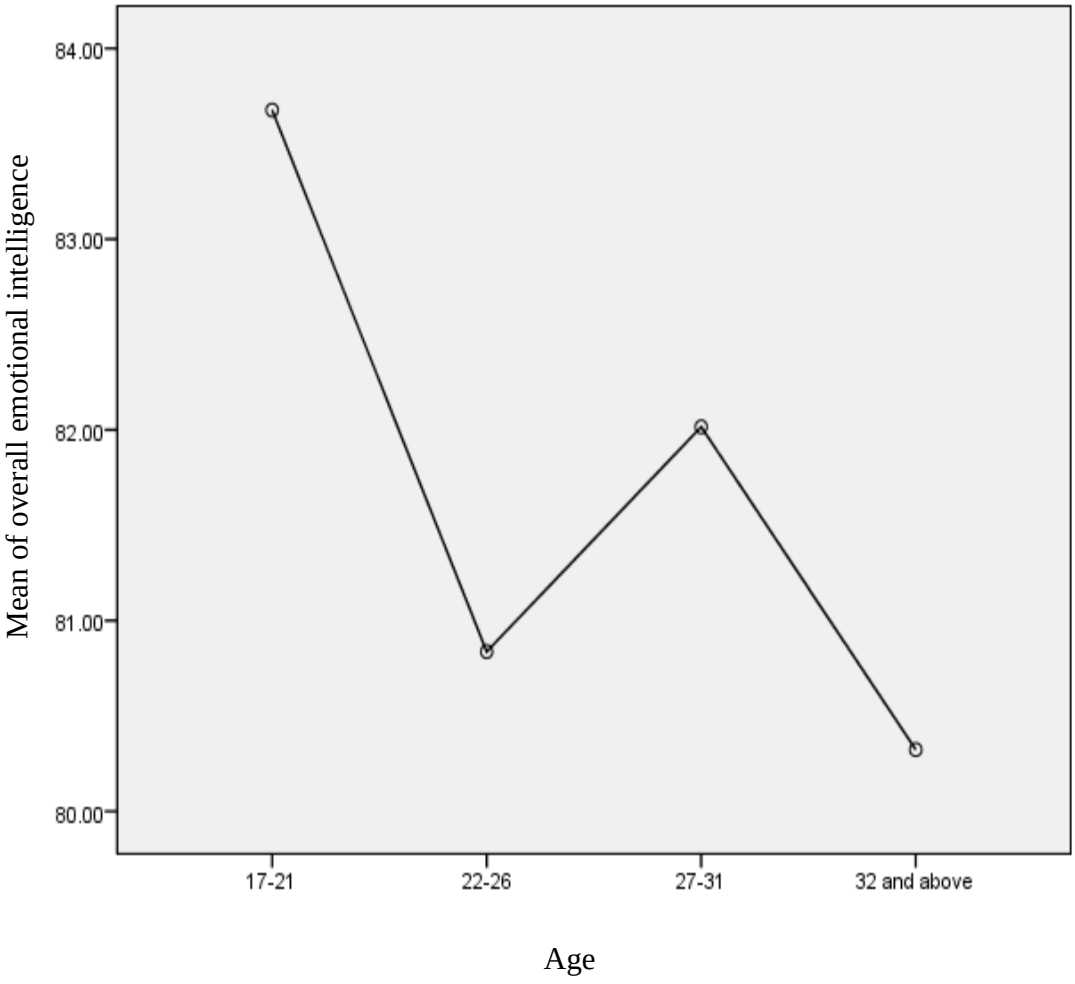


Figure 17: Age differences in the total EIQ scores

It must be noted, however, that the mean differences of the different age groups did not reach significance, $F_{3,100}$ = .309. p = .819 (see the analysis of variance in table 17). Further details of the age differences in the total EIQ scores are also provided in the descriptive table in appendix K.

Table 17: ANOVA in the EIQs of the different age groups

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	161.362	3	53.787	.309	.819
Within Groups	16701.644	96	173.975		
Total	16863.007	99			

Gender differences on the MSCEIT

Unlike age, the gender differences (although also not significant, $F_{1,100}$ = 1.52, p = .220 *ns*) among the participants in this study were consistent with that in the extant literature. On the whole, the females outscored the males in the overall EI, in the two areas, as well as in all the branches apart from the Use of Emotions branch (see the descriptive details in appendix L). The superiority of females over males as far as the MSCEIT is concerned is not new at all. Mayer, Salovey and Caruso (2002) as well as Resnicow, Salovey and Repp (2004) found similar results. The reason(s) for this outcome remains a subject for further research. Table 18 gives details of the differences of males and females in the overall EIQs.

Table 18: ANOVA in the EIQs of males and females

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	258.103	1	258.103	1.523	.220
Within Groups	16604.904	98	169.438		
Total	16863.007	99			

According to Boyatzis and Sala (2004), "the articulation of one overall emotional intelligence might be deceptive and suggest a close association with cognitive capabilities (i.e., traditionally defined 'intelligence' or what psychologists often call 'g' referring to general cognitive ability). In line with this submission, I shift my attention from a discussion of the overall EIQs of participants and focus on the sub scores.

MSCEIT area scores

The MSCEIT area scores help the test administrator to gain insight into possible differences between the participants' ability to perceive and utilize emotions on one hand, and the ability to understand and manage emotions on the other hand. There are two scores generated for the two MSCEIT areas: the Experiential Emotional Intelligence Quotient (EEIQ) score and the Strategic Emotional Intelligence Quotient (SEIQ) score. The EEIQ assesses the ability to perceive, respond, and manipulate emotional information without necessarily

understanding it. It demonstrates how well a respondent can identify emotions and express emotional information to other sorts of sensory experiences such as sounds or colors; and may also indicate how a respondent is likely to function under the influence of different emotions. The SEIQ also assesses the ability of respondents to understand and manage emotions without necessarily perceiving feelings well or fully experiencing them. It shows how well a respondent comprehends what emotions stand for and how emotions in oneself and others can be managed (Mayer, Salovey & Caruso, 2002).

Generally, the participants in this study demonstrated greater prowess in the SEIQ (M = 88.31) over the EEIQ (M = 84.83) although the difference was not significant. The females performed better than the males in both areas. Again, the participants in the youngest age group performed better in both areas than their counterparts in the older age groups (see the mean plots in appendix M for the details) although the Scheffe post-hoc test revealed no significant differences. Similar to the overall EI scores of respondents, the area scores also fell within the 'consider improvement' range under the guidelines for interpreting the scores (see Table 15, page 182); implying that, compared to the normalization sample, the participants in this study did not perform too well on the test (below average).

Table 19 shows a summary of the performance of participants in the MSCEIT area scores according to gender and age.

Table 19: Gender and age groups performance in the MSCEIT area scores

Gender		Experiential EI	Strategic/Reasoning EI
Male	Mean	83.3222	87.4151
	N	50	50
	Std. Deviation	12.89693	15.44158
Female	Mean	86.3379	89.2145
	N	50	50
	Std. Deviation	13.91503	13.93010
Total	Mean	84.8301	88.3148
	N	100	100
	Std. Deviation	13.43346	14.65873
Age groups			
17-21	Mean	87.2389	89.6456
	N	27	27
	Std. Deviation	14.03893	15.41711
22-26	Mean	83.3458	88.2031
	N	53	53
	Std. Deviation	12.19472	14.19801
27-31	Mean	86.5366	85.7156

Table 19 continued

	N	12	12
	Std. Deviation	16.42236	5.80384
32 and above	Mean	83.9741	88.4618
	N	8	8
	Std. Deviation	15.70763	24.23252
Total	Mean	84.8301	88.3148
	N	100	100
	Std. Deviation	13.43346	14.65873

MSCEIT branch scores

The MSCEIT branch scores provide information of specific emotional abilities of respondents. The MSCEIT yields four branch scores: perceiving emotions (the ability to recognize how an individual and those around the individual are feeling), using emotions to facilitate thought (how much a respondent's thoughts and other cognitive activities are informed by his or her perception of emotions), understanding emotions (ability to describe how different emotions blend and also how they change over time) and, managing emotions (ability to regulate the emotions in self and others towards positive ends).

In this study, the differences in the scores of participants in the four branches were not statistically significant. However, the participants scored

highest in the Understanding of emotions branch (M = 90.55). This was followed in descending order by the Managing of emotions branch (M = 88.98), the Use of emotions branch (M = 88.82) and the Perception of emotions branch (85.68) respectively. With the exception of the Understanding of emotions branch which fell within the range of 'low average', the mean score of participants in all the other branches fell in the 'consider improvement' range (see Table 14). This again implies that, compared to the normalization sample, the respondents in this study did not perform too well on the test. The fact that the participants obtained the highest mean score in the Understanding of emotions branch is very interesting and paradoxical. This is because, the questions in that branch (more than in any other branch) are meant to assess the accurate description of emotions; with emphasis on the use of appropriate vocabulary to describe blends and changes of complex emotions. Considering that the participants were non-native English speakers, the expectation (which would have been quite justified) was that participants were going to score rather lower in that branch than in the other branches. However, the results turned out to be positively different.

The mean plots illustrated in appendix N clearly demonstrate that the participants in the youngest age range (17 – 21) again outperformed those in the older age ranges in three of the MSCEIT branches (Perception, Use and Management of Emotions). Since this observation has been fairly consistent in this study (as far as the overall EI score, the Area scores and the Branch scores are concerned), it is significant to consider some possible explanations. It seems that the older people get the more conservative they become and the less ready they

are to alter their long acquired behaviors and practices. The results in this study imply that, more young adults, compared to their older counterparts, are able to identify and express their emotions freely. The younger adults do not generally read too many possible interpretations into an emotional display as do their older adult counterparts. In effect, the scores signify that the younger people are, the more open they are to their emotions. The older people grow, the less open they are to their emotions. It is also important to note that these interpretations are based on the results of a self-report test (which is subject to error). Further research will be necessary to confirm these observations.

Also, the fact that the only branch in which the participants in the older age groups outscored the younger participants was the Understanding of emotions is worth some explanation. The implication of this observation is that the older participants have a richer repertoire of emotion-related vocabulary than their younger counterparts. Therefore, they could more adequately and vividly describe how complex emotions blend and occur concurrently, and also how emotions change from one to the other over time.

The variable-ordered descriptive meta-matrix (table 20, next page) gives a summary of the EI scores obtained by participants in this study.

Table 20: Variable-Ordered Descriptive Meta-Matrix -

Gender and Age and how they relate to the overall, area and branch scores of participants

EI Scores	*Sub-domains*	*Qualitative outcomes*		*Quantitative outcome*
		Gender	Age	
Total EIQ score		The females generally scored higher than the males.	Participants in the youngest age group (17-21) performed better than those in the older age groups.	The mean differences in both age and gender were not statistically significant.
Area scores	EEIQ score	The females scored higher than the males.	Participants in the youngest age group (17-21) performed better than those in the older age groups	The mean differences in both age and gender were not statistically significant.
	SEIQ score	The females scored higher than the males.	Participants in the youngest age group (17-21) performed better than those in the older age groups	
Branch	Perceiving	The females scored higher than	Participants in the youngest age group	

Table 20 continued

scores	emotions	the males.	(17-21) performed better than those in the older age groups	The mean differences in both age and gender were not statistically significant.
	Using emotions	The males scored higher than females	Participants in the youngest age group (17-21) performed better than those in the older age groups	
	Understanding emotions	The females scored higher than the males.	Participants in the second youngest group (22 – 26) performed better than those in the other age groups.	
	Managing emotions	The females scored higher than the males.	Participants in the youngest age group (17-21) performed better than those in the older age groups	

MSCEIT positive-negative bias scores

The MSCEIT bias score indicates the extent to which a respondent reads positive or negative meanings to perceived emotions. Like the other scores on the MSCEIT, the bias scores are interpreted using a mean of 100. Respondents who scores significantly above this mean are considered to read more positive meanings to emotions whiles respondents who score significantly less than the mean are considered to read more negative meanings to perceived emotional expressions. The bias scores of participants in this study were fairly normally distributed (as shown in the histogram with the normal distribution curve below – figure 16) and ranged from as low as 69.09 to as high as 139.86.

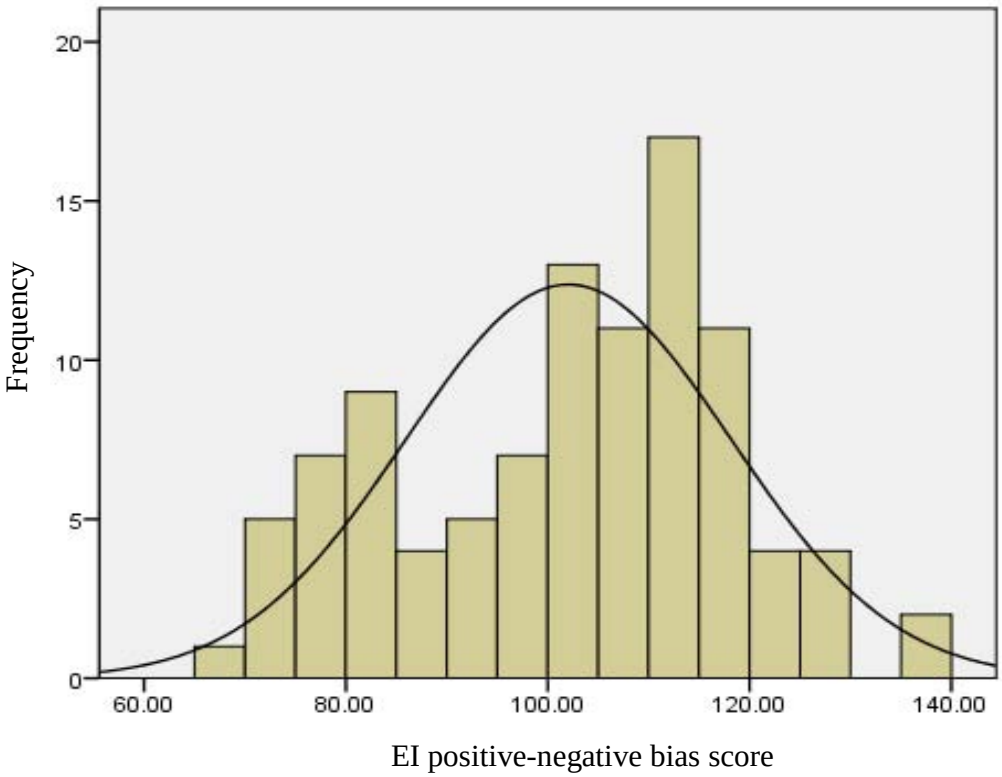


Figure 18: Distribution of participants' bias scores

The mean bias score of the participants was 102.06 which was not significantly different from that of the normalization sample. This implies that generally, the participants did not read more negative or positive meanings into emotions. The female participants were slightly tilted towards the positive side whiles the males were slightly towards the negative side. However, the difference was only infinitesimal and non-significant. Again, as far as age was concerned, there was no relevant difference in the bias score of the participants in this study.

Having discussed the results of both the independent and dependent variables in isolation, I now proceed to the main analysis stage where I present a synthesis of the two variables. The three preset research hypotheses as well as the four research questions are addressed in the subsequent paragraphs. In each case, the research hypothesis is statistically tested and the outcome is used to address the corresponding research question as well.

Research Question 1: EI of participants with different music preferences

The aim of the first research question was to find out the difference in the EI of participants who indicated preferences for different musical dimensions. To answer this, a corresponding hypothesis that stated a no difference in the EI of participants who preferred different musical dimensions was set and tested. Consequently, the analysis of the variances between the mean EI scores of the different participants who indicated preferences for different musical dimensions revealed no significant differences ($F_{5,100} = .552$, $p = .736$ *ns*). This shows that, there was not enough evidence to reject the null hypothesis; instead, the

alternative hypothesis that predicted the existence of a difference in the EI of participants who preferred different musical dimensions was rejected (see the ANOVA Table below).

Table 21: Analysis of the variance in the EI of participants

	Sum of Squares	df	Mean Square	*F*	Sig.
Between Groups	481.016	5	96.203	.552	.736
Within Groups	16381.991	94	174.276		
Total	16863.007	99			

To further strengthen the support for the rejection of the alternative hypothesis, the participants within each of the four broad musical dimensions were treated as independent samples and their mean EIQs were compared with the approximated mean EIQs of the overall group. The Levene's test for equality of variances within the groups (see Table 22), yielded support to the insignificant differences obtained earlier (Table 21) in the EIQs of participants.

Table 22: Levene's Test for Equality of variances between variables

Music categories	Levene's Test for Equality of Variances	
	F	Sig.
Preference for Reflective and Complex music	1.884	.173
Preference for Intense and Rebellious music	1.715	.193
Preference for Upbeat and Conventional music	.026	.872
Preference for Energetic and Rhythmic music	.133	.716

Since the null hypothesis stood tall over the alternative hypothesis, the resultant answer to the first research question was that the differences in the EI of different participants (see details in appendix O) who had a preference for different musical dimensions were statistically infinitesimal and were, thus, insignificant. Such differences could have been the result of chance or could be attributed to sampling error. Figure 17 gives a visual of the differences in mean between the different participants who indicated preferences for different musical dimensions.

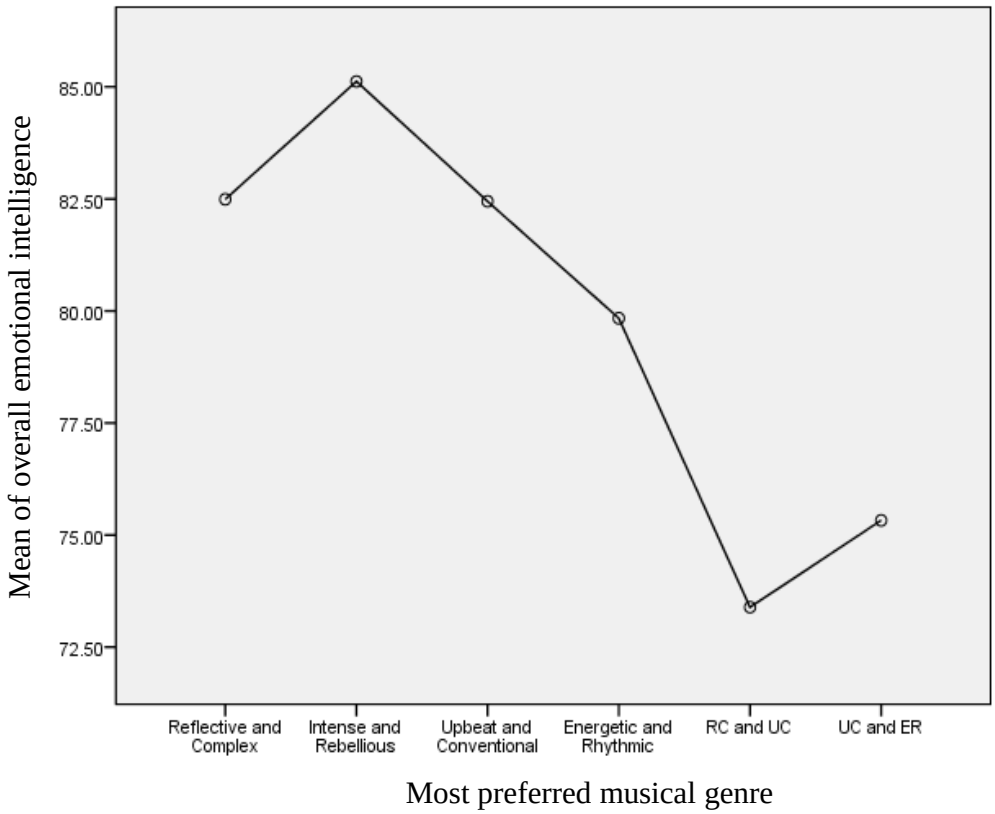


Figure 19: Mean plot of the differences in the EIQs of participants who preferred different musical dimensions.

Research Question 2: EI of participants with similar music preferences

To find an answer to the second research question, a corresponding hypothesis that stated a no difference in the EI of participants who indicated a preference for the same musical dimensions was set and tested. In testing this hypothesis, the one way analysis of variance (with emphasis on the 'within group' values) was employed. The test revealed a non-significant difference in the mean EIQs of different participants who indicated their preference for the same musical category ($F_{94,100} = 0.55$, $p > 0.01$). In other words, the EIQs of participants who

indicated a preference for the same musical dimensions were largely homogeneous. The conclusion drawn here, just like in the first research question, is that there was not enough evidence to reject the null hypothesis ($\alpha = .05$, two-tailed), instead the alternative hypothesis that stated that there is a difference in the EIQs of different participants who preferred the same music dimensions was rejected.

Among the four broad music dimensions, the Upbeat and Conventional (which emerged as the most preferred genre among the participants) had the highest range span between 55.49 (which was the lowest EIQ among all the participants) and 120.71 (which was the highest EIQ among all the participants). The fact that these two extreme scores were obtained by participants within the same musical dimension seems to suggest that the musical preferences of the participants are not necessarily related to their emotional intelligence. The Reflective and Complex musical dimension (which was the second popular among the participants) also had the next highest range EIQ span, between 56.83 and 106.30 (the next highest EIQ among all the participants). The other participants within these two broad musical genres obtained EI scores that were fairly spread between the minimum and maximum scores in each case, so that the participants who had the boundary scores could hardly be regarded as outliers (see the SDs between the groups in appendix O).

Considering the individual EIQ scores (and not the mean EIQs) of participants, it is significant to note that the individual who had the highest EIQ (120.71) was from the most preferred musical dimension: Upbeat and

Conventional (n = 48). The next highest score (106.30) was obtained by a participant who belonged to the second most preferred musical dimension: Reflective and Complex (n = 35). The third highest score of 88.19 (that is if those who had an equal preference for two simultaneous musical categories are excluded) was obtained by a participant from the third most preferred musical dimension: Energetic and Rhythmic (n = 10) and the fourth highest EIQ score (85.12) was obtained by a participant who also belonged to the fourth (the least) preferred musical dimension: Intense and Rebellious (n = 1). See the descriptive details in appendix O. Taken in isolation, these findings seem to show a kind of relationship between the musical preference of participants and their emotional intelligence. However, these are single cases, and the fact that the overall averages of participants in the various musical categories did not follow such a trend and were not statistically significant; they can only be considered as mere coincidence.

Since there was not enough evidence to reject the null hypothesis, the differences in the EIQs of participants who indicated a preference for the same music dimension(s) were insignificant. The differences could have occurred as a result of chance or errors in sampling.

Research Question 3: Relationship between the MP and the EI of participants

For research question three, a corresponding null hypothesis and its alternative hypothesis that specified a no relationship and a relationship

respectively between the MP and EI of participants were set to be tested. A paired samples *t* test; pairing the most preferred musical categories of participants and the overall EI of participants was employed. The test divulged a very low (Pfeifer, 2000 cited in Sarantakos, 2005), statistically insignificant, negative Pearson's moment correlation coefficient: r (100) = -.110, p > .001. The implication of this result is that when the overall EIQs of respondents are juxtaposed with the broad musical preference dimensions, there is no significant relationship between them (see the scatter dots/ plot of the distribution of EI scores in appendix P). Therefore, there was not enough evidence to refute the null hypothesis here (just like in the first two sets of hypothesis). The alternative hypothesis that predicted a significant relationship between the two variables was therefore rejected.

However, if the individual broad musical dimensions are considered in relation to the EIQs, a significant but low positive correlation; r (100) = .264, p < .05, α = 0.05, two-tailed) is found between preference for Upbeat and Conventional music and the overall EIQs (see details in Table 23, next page). Because correlation does not indicate causation, it cannot be concluded that the EIQs of these respondents are due to their preference for the Upbeat and Conventional music category.

Table 23: Inter-correlations between musical dimensions and overall EIQs.

		Overall Emotional Intelligence	Preference for Reflective and Complex music	Preference for Intense and Rebellious music	Preference for Upbeat and Conventional music	Preference for Energetic and Rhythmic music
Overall Emotional Intelligence	Pearson Correlation	1	.188	-.092	.264*	.122
	Sig. (2-tailed)		.128	.461	.031	.326
	N	67	67	67	67	67
Preference for Reflective and Complex music	Pearson Correlation	.188	1	.471**	.476**	.201
	Sig. (2-tailed)	.128		.000	.000	.102
	N	67	67	67	67	67
Preference for Intense and Rebellious music	Pearson Correlation	-.092	.471**	1	.397**	.344**
	Sig. (2-tailed)	.461	.000		.001	.004
	N	67	67	67	67	67

Table 23 continued

Preference for Upbeat	Pearson Correlation	.264*	.476**	.397**	1	.173
and Conventional music	Sig. (2-tailed)	.031	.000	.001		.161
	N	67	67	67	67	67
Preference for Energetic	Pearson Correlation	.122	.201	.344**	.173	1
and Rhythmic music	Sig. (2-tailed)	.326	.102	.004	.161	
	N	67	67	67	67	67

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Rather, the presence of a correlation provides fertile grounds for further (more closed up and focused) research. A follow-up multiple-regression was done to find out if any of the four broad music dimensions was a logical predictor of the EIQ of participants. Again, the result was statistically insignificant ($F_{4,95}$ = 2.53, p = .046, R^2 = .096). The predictors could only account for a .096 of the variance in the dependent variable.

The following table (Table 24) gives details of the predictor variables in the multiple-regression that was conducted. The dependent variable was the overall EIQ of participants and the enter method was used.

Table 24: Details of predictors in the multiple regression analysis

Predictor variables	B	β	*p*
Reflective and Complex music	-.059	-.006	.960
Intense and Rebellious music	-2.991	-.322	.004
Upbeat and Conventional	1.888	.147	.224
Energetic and Rhythmic	.312	.041	.717

The result of the multiple-regression supports that of the Pearson's correlation coefficient to explain the general non-significant relationship that existed between MP and EI in this study.

Research Question 4: Musical dimension and high, average or low EI

The last research question, unlike the first three, had no corresponding research hypothesis. The aim of this question was to find out the extent to which a particular type of music is likely to engender high, average or low emotional intelligence than other types. Here, the focus was more on the specific musical genres as well as the broader musical dimensions, and how they related to the various aspects of the ability model of EI adopted in this study.

In all, the overall EI scores of participants was significantly correlated positively with only one of the broad music dimensions, Upbeat and Conventional (r = .264, p < .05, α = 0.05, two-tailed). The EEIQ of participants found no significant correlations with any of the specific musical genres or the broader music categories. Conversely, a low but positive correlation was found between the SEIQ of participants who indicated a preference for soundtracks/theme songs (r = .293, p = .003, two-tailed, α = 0.05). Again, preference for Soundtracks/Theme songs correlated positively with the two branches of EI that come under the Strategic EI, namely: Understanding of Emotions (r = .306, p = .002, two-tailed, α = 0.05) and Management of Emotions (r = .213, p = .033, two-tailed, α = 0.05). Since the correlations here were all positive, the implication is that the more people engage in critical listening to Soundtracks/ theme songs, the more likely it is, that their Strategic EI area (abilities to understand and to manage emotions) is enhanced. However, since correlation does not imply causation, this conclusion is only speculative; further research is needed to establish this claim.

The only other specific musical genre that correlated with an aspect of EI was rock. There was a weak but significant negative correlation between rock and the Understanding of Emotion branch of EI (r = -.196, p = .048, two-tailed, α = 0.05). Literarily, this correlation implies that the more people listen to Rock music, the lesser their ability to Understand emotions; and the lesser they listen, the better their ability to Understand emotions.

Among the broad music dimensions, only the Intense and Rebellious dimension correlated significantly with aspects of EI. It correlated negatively with both the Understanding of emotions branch and the Strategic EI area (r = -.233, p = .020, two-tailed, α = 0.05 and r = -.249, p = .012, two-tailed, α = 0.05 respectively). Again, the literal interpretation of these correlations is that an increase in the listening to the genres under the Intense and Rebellious music dimension leads to a corresponding decrease in the Understanding of emotions branch and the Strategic area of EI; and a decrease in the listening of the sub-genres under the Intense and Rebellious dimension leads to a corresponding increase in the Understanding of emotions branch, as well as in the Strategic area of EI . Although these correlations are rather weak, they still provide important leads for further research.

Based on these observations, it is clear, that whereas the listening to Soundtracks / Theme songs seems to have the potential of improving EI, listening to Rock and the other genres under the Intense and Rebellious music category seems to have the potential for inhibiting the development of EI. There was not

enough evidence to comment on the other musical genres or the other music dimensions.

General discussion (thematic analysis)

So far, the analysis of the data has been predominantly quantitative, and as such, has ignored certain minute details that may count or increase our knowledge on the relationship that exist between and within the variables in this study. Some of such details are discussed in the subsequent paragraphs from a qualitative inductive and interpretive standpoint. The emergent themes/patterns within the data are discussed without recourse to whether they are statistically significant or not.

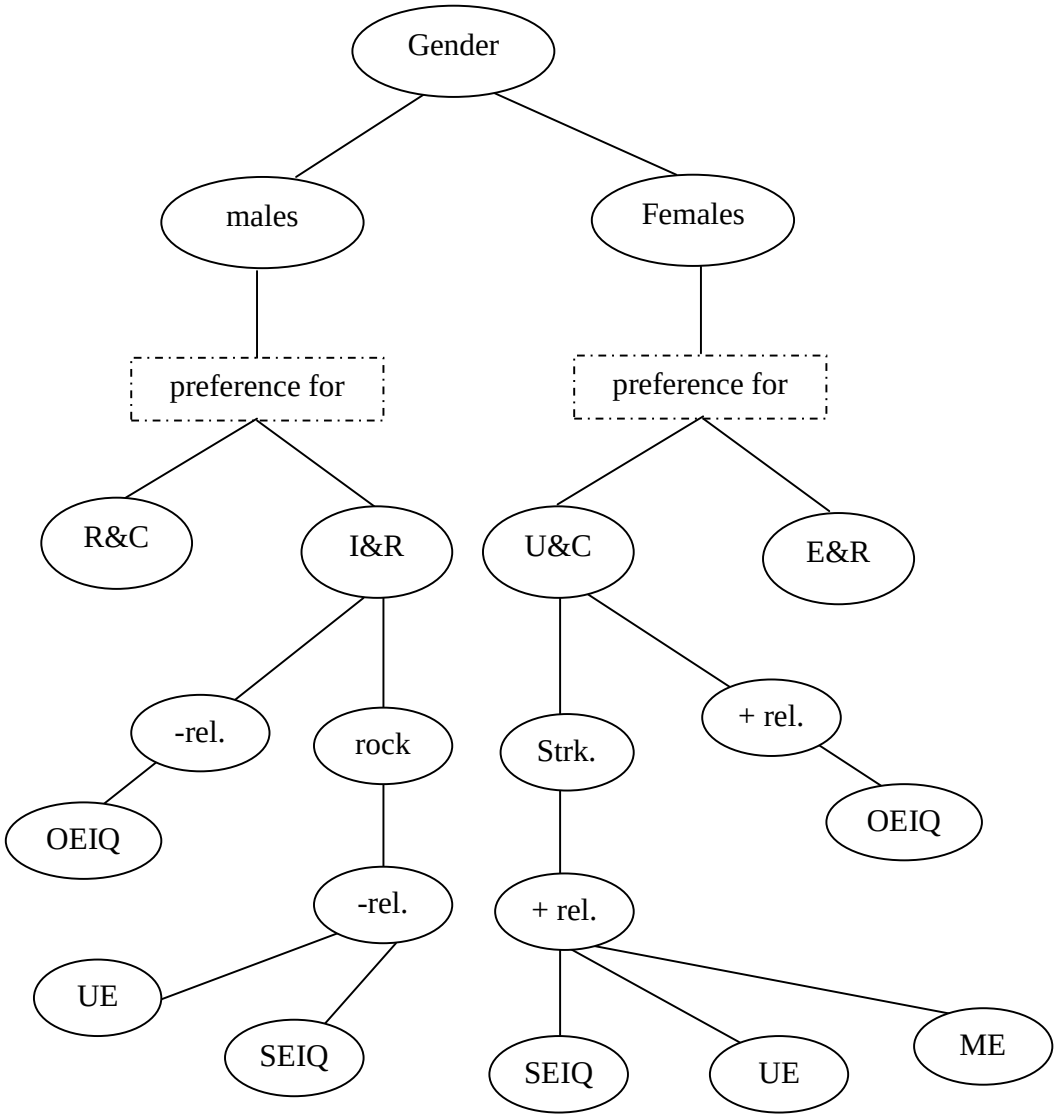
To begin with, the relationship between gender and the two variables (MP and EI) is worth noting. As far as MP is concerned, the males in this study indicated their liking for the genres under the Reflective and Complex, as well as the Intense and Rebellious music dimensions. The analysis of the data on EI also showed a negative correlation between the Intense and Rebellious music dimension and the overall EI score. Rock (which is a genre under the Intense and Rebellious dimension) was also found to be negatively correlated with both the Understanding of emotions branch of EI and the Strategic area of EI. This offers a logical explanation to the fact that the males in this study did not perform as well in the MSCEIT as did the females.

In looking for an explanation to the general triumph of the females over the males in the MSCEIT, the musical preferences cannot be overlooked. The

females indicated a greater preference for the musical genres under the Upbeat and Conventional, as well as the Energetic and Rhythmic music dimensions. It also became clear in the analysis that the only broad music category that correlated positively with the overall EI scores was the Upbeat and Conventional dimension. In fact, Soundtracks /theme songs (which is one of the genres under the Upbeat and Conventional category) was found to be positively correlated with two of the MSCEIT branches (Understanding of Emotions and Management of Emotions), as well as with one of the two MSCEIT areas (Strategic EI). It is therefore, a logical syllogism that the females outscored the males in the total EIQ scores, in the two MSCEIT areas and in three of the MSCEIT branches.

Considering these findings (in the musical preference of males and females and their corresponding results in the EI) carefully, there appears to be an important connection between MP and EI. The network map below (figure 18) shows the connections between gender and the two variables (MP and EI).

In terms of age, a similar pattern of explanation also emerges. When the age ranges in the study are crumbled into two major groups so that we have the younger adults (17 – 26) and the older adults (28 – 32 and above) a pattern appears that seems to support a relationship between MP and EI.



Legend

R&C – Reflective and Complex	I&R – Intense and Rebellious
U&C – Upbeat and Conventional	E&R – Energetic and Rhythmic
OEIQ – Overall EI Quotient	- rel. : negative relationship
UE – Understanding of emotions	+ rel. : positive relationship
ME – Management of emotions	Strk: - Soundtrack/ theme songs

Figure 20: Network map showing the relationship between gender and the two variables (MP and EI)

First of all, the younger adults (as can be seen from the mean plots in appendix H) generally indicated a stronger preference for the musical genres classified under three main categories: the Reflective and Complex, the Upbeat and Conventional, and the Energetic and Rhythmic. The only music category in which the older adults indicated a stronger preference was in the Intense and Rebellious category.

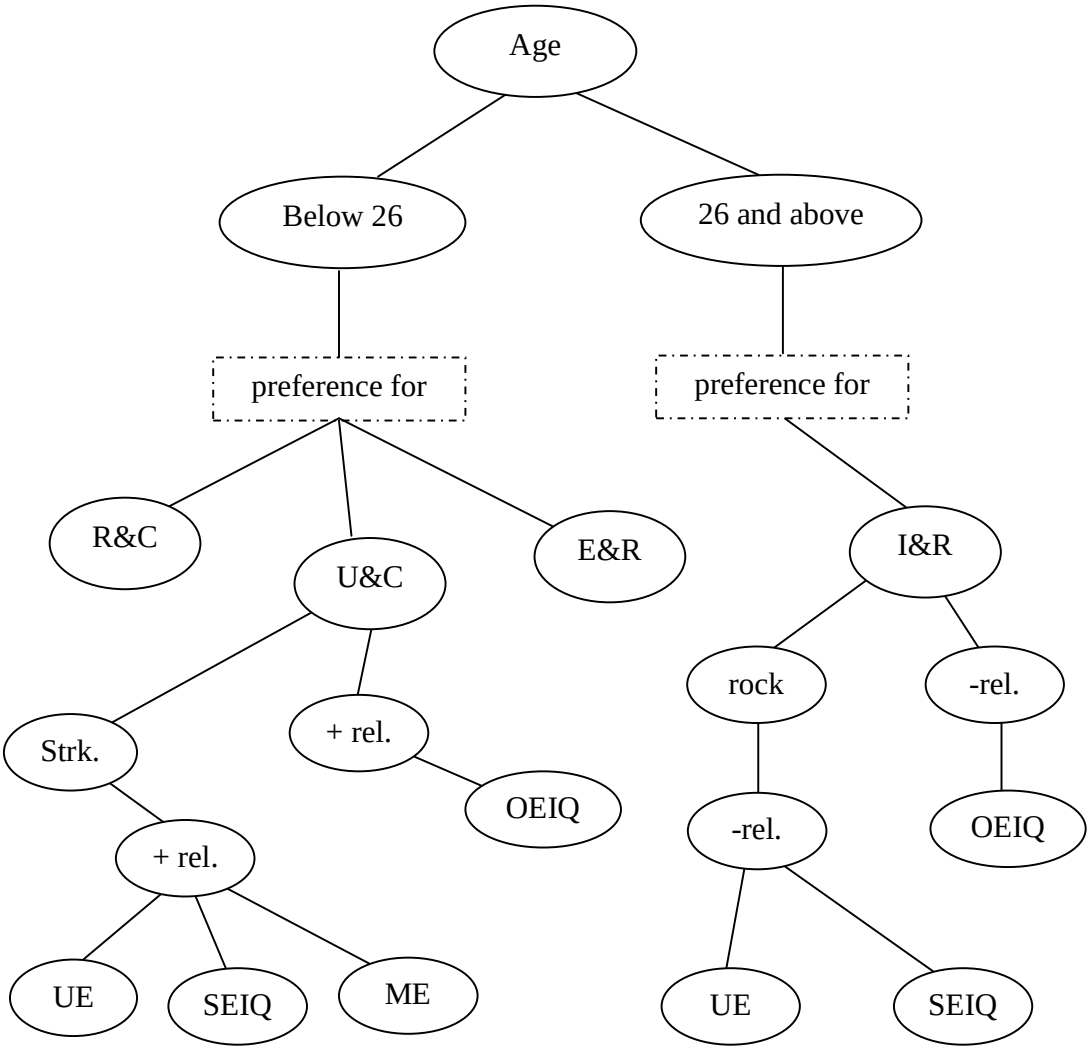
Secondly, according to the analysis of the EI data, the younger adults performed better than the older adults in the MSCEIT. The younger ones achieved higher scores in the overall EI, in the two MSCEIT areas and in three of the MSCEIT branches.

When the musical preferences and EI scores are reconciled for the two broad age groups, they make a lot of sense. As already indicated in the description of the gender differences, the Upbeat and Conventional dimension correlates positively with the overall EI scores, and Soundtracks / theme songs (a genre under the Upbeat and Conventional dimension) also correlates positively with three of the EI sub-scores. It follows therefore, that the higher scores achieved by the younger adults could be attributed to their musical preferences. On the other hand, the only broad musical dimension in which the older adults indicated a stronger preference over the younger ones (Intense and Rebellious) was found to be negatively correlated with the overall EI scores. One of its sub-genres (Rock) was also found to be negatively correlated with two of the MSCEIT sub-scores. This also offers a plausible explanation to the comparably low achievement of the older adults in the MSCEIT. Again, the network map

below (figure 19) gives a visual display of the connections between age and the two variables (MP and EI).

All in all, the discussion of the emergent patterns in the data in relation to gender and age has revealed the strong possibility of a connection between MP and EI. Although these patterns are quantitatively (statistically) insignificant in many areas, they are so telling (qualitatively) that completely overlooking them will not make much sense. Gender and age, thus provide significant gateways for further exploring the relationship that may exist between Musical preference and Emotional Intelligence. It is also useful to note, that although the level of musical training had some form of connection with the musical preferences of participants, such connections were not found with the EI scores of participants.

Last but not least, the inter-correlations displayed in table 21 indicate, that the preferences of participants in this study for the four broad musical dimensions were not unrelated. Although the participants had greater preferences for particular musical dimensions, such preferences did not stop them from listening to musical genres under other broad musical dimensions. For example, preference for Reflective and Complex music correlated significantly with Upbeat and Conventional as well as with Intense and Rebellious music at even a 0.01 level of significance (two-tailed).



Legend

R&C – Reflective and Complex	I&R – Intense and Rebellious
U&C – Upbeat and Conventional	E&R – Energetic and Rhythmic
OEIQ – Overall EI Quotient	- rel. : negative relationship
UE – Understanding of emotions	+ rel. : positive relationship
ME – Management of emotions	Strk: - Soundtrack/ theme songs

Figure 21: Network map showing the relationship between age and the two variables (MP and EI)

Similarly, the Intense and Rebellious musical dimension correlated significantly with the three other musical dimensions, also at a 0.01 significance level (two-tailed). These observations go a long way to support the assertion of Hargreaves that, "music, live as well as recorded, is ubiquitous, and it follows that the potential range and diversity of the musical experience of any individual is vast" (Hargreaves, 2001. p.105). A stronger preference for a particular genre of music does not inhibit any listener from listening to other musical genres.

Figure 22 provides a visual summary of the trends discussed in the preceding paragraphs. The model shows that, although MP and EI are different entities, they are connected by the variables of gender and age. The Emotional intelligence of the sub-sets of the gender variable (males and females) can, in a way, be explained by their Musical preferences. Similarly, the EI of the sub-groups under the age variable (younger adults and older adults) can also, in a way, be explained by their musical preferences. Thus, knowledge of a person's age and gender might be helpful in predicting the person's musical preference(s) which in turn, might be helpful in predicting the person's emotional intelligence. However, such predictions are not conclusive. They must be done (if at all) with extreme caution since the empirical evidence is not strong enough.

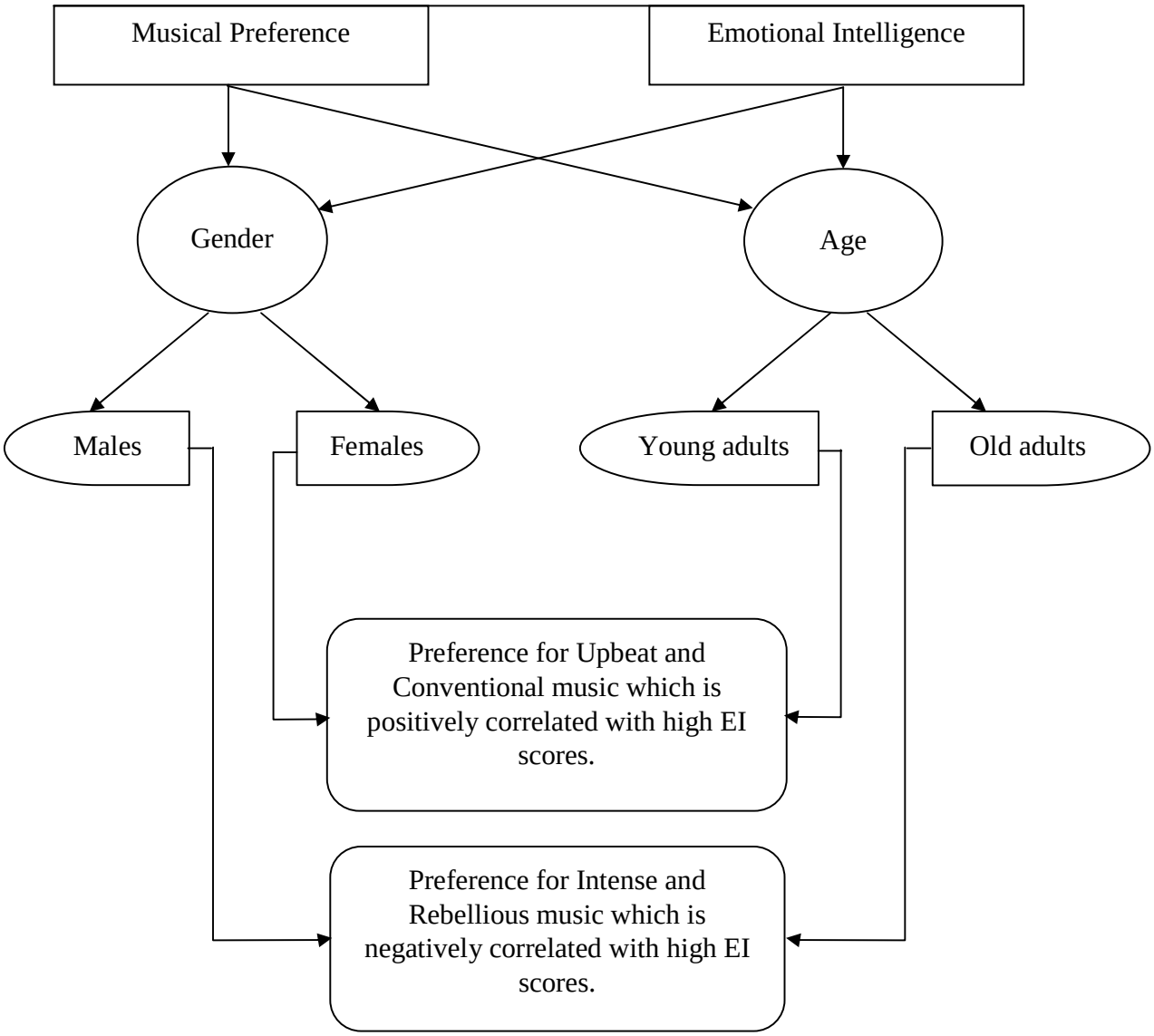


Figure 22: Gender and age group patterns of relationship between MP and EI

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

In this chapter, a summary of the whole thesis is presented. The summary covers a recapitulation of the purpose of study, the research questions/hypotheses addressed, the highlights of the pertinent literature reviewed, an overview of the research methods employed, the kinds of analysis performed on the data and a statement of the main findings. The summary is followed by conclusions as well as recommendations based on the findings of the study. I then close the chapter with suggestions for further research.

Summary

The problem that this study sought to address was on the possible existence of a relationship between musical preference and emotional intelligence. On one hand, the topic of music and emotion has engaged the attention of scholars for ages; and the fact that music has a strong bearing on emotions has been firmly established ipso facto. On the other hand, the advent of Multiple Intelligence Theory (MIT) in Psychology brought in its wake an increasing

interest in research that explores the nature of various intelligence types and their possible relationship to the day-to-day lived experiences of people. One of these intelligence types that caught the attention of scholars since the 1990s was Emotional Intelligence (EI). This intelligence has been variously claimed to be very important and has been established to predict many areas of life success.

EI is basically built on emotions, and different types of music also engender different kinds and levels of emotions. 'Emotions' thus, become a central focus in both the kind of music that people listen to, and emotional intelligence. Against this background, I set out to explore the possible relationship between the two constructs.

Consequently, the general purpose of this study was to investigate the possible existence of a relationship between an individual's preference for musical genres within a particular dimension of music and the person's emotional intelligence. Four specific objectives for achieving the purpose were: a) to explore the possible relationship between musical preference and emotional intelligence, b) to find out if there was a significant difference in the emotional intelligence of different undergraduates who prefer musical genres within different musical dimensions, c) to find out if there was a significant difference in the emotional intelligence of different undergraduates who prefer musical genres within the same musical dimension(s), d) to investigate the possibility of high, average or low emotional intelligence among participants who report to prefer musical genres within a particular musical domain.

Four research questions and three research hypotheses (which corresponded with the first three research questions) were set to help gain a deeper insight into the relationship between the two main variables: MP (the independent variable) and EI (the dependent variable):

a) What is the difference in the emotional intelligence of different undergraduate students who prefer musical genres within different musical dimensions?
b) What is the difference in the emotional intelligence of different undergraduate students who prefer musical genres within the same musical dimension(s)?
c) What is the relationship between the musical preference and the emotional intelligence of undergraduate students?
d) To what extent is a particular dimension of music likely to engender high, average or low emotional intelligence than other types?

One out of the several models of EI was adopted; the ability model which was championed by Mayer and Salovey (1990) and later joined by Caruso (1997). This ability model conceptualizes EI as a unique form of intelligence and not as a set of leadership skills or personality traits and characteristics. Subsequently, pertinent literature was reviewed, first, on both variables separately, and later on studies that connected aspects of both music and EI.

The literature review on MP covered the following subheadings: factors affecting MP (age, gender, ethnic and cultural factors, socio-economic

status/social class, characteristics of the music) and theoretical foundations of MP. Among other factors, the ones mentioned above have been established by scholars to have very important relationships with MP. The exact theories that were explored to explain the preferences individuals have for particular musical types were the *mere exposure theory* (Zajonc, 1968; Sawyer, 1981; Miller, 1976; Kunst-Wilson & Zajonc, 1980), the *social judgment theory* (Sherif & Sherif, 1967), and the *anchoring and adjustment heuristic theory* (Kahneman & Tversky, 1973). Again, the Wundt/Berlyne inverted-U curve as well as the Hargreaves hypothesized inverted-U curve (see figures seven and eight respectively) which are all built of the familiarity theories were employed as models that explained the preferences people have for their different musical types.

On EI, the literature was focused on definitional issues, models of intelligence (theoretical viewpoints), historical perspective, and salient models of EI. Three classes of EI definitions were discussed: the narrow/restrictive definitions (capturing up to three or less of the components that make up EI), the optimal definitions (capturing four or five components of EI) and the broad/open definitions (which is quite vague and which does not specify any number of EI components). Also, different models of intelligence which preceded EI and which could have informed the conceptualization of EI were discussed. These models of intelligence included Thorndike and Stein's (1937) social intelligence, Thurstone's (1938) primary mental abilities, Maslow's (1954) concept of 'self-actualization' in his 'hierarchy of needs', Weschler's (1958) affective components of intelligence, Sternberg's (1985) triarchic theory of intelligence

and Gardner's (1983) multiple intelligence theory. Two studies that explored the relationship between other aspects of music and EI were also reviewed. The methods used by the researchers in the reviewed studies, the findings, and the recommendations made in both studies greatly helped in shaping this current study.

In all, the research design used was an eclectic one which fused the strengths of many different research approaches. The resultant design incorporated aspects of applied research (according to the function of the study), exploratory research (according to the purpose), cross-sectional research (according to the time frame involved in data collection), non-experimental research (according to the extent of subject and variable manipulation), correlational research (according to the nature of the study) and mixed methods research (according to the mode of inquiry).

Three major probability sampling procedures (the dependent within-subject sampling, disproportionate stratified random sampling and the independent-within-sample random sampling) and one mixed-method sampling procedure (stratified purposive sampling) were used to draw a sample of 100 subjects from the specified population. The sampling techniques ensured that the participants were varied and that they exhibited most of the characteristics of the population from which they were drawn. The sample size was determined using the sample size calculator presented as a public service of the Creative Research Systems survey software (Creative Research Systems, 2012. See interface in

appendix E) with a confidence level of 95% (Wiersma, 1986; Glenberg, 1988/2010), a confidence interval of 10 and a population size of 15,500.

Two standardized research instruments (one for each of the variables) were used. Both tests had strong validity and reliability coefficients and correlated strongly with many external factors. The Short Test of Musical Preference (which I slightly modified to include biographical information of participants and other musical genres) was printed for use with the author's permission. This test was used to solicit information on the musical preferences of the participants in this study. The other instrument (the Mayer-Salovey-Caruso Emotional Intelligence Test – MSCEIT) was purchased from the Multi-Health Systems (MHS), the test publishers, and was administered to test the EI of participants. The MSCEIT, unlike the STOMP, was administered and scored online. Each participant answered the STOMP first before taking the online version of the MSCEIT. The two sets of scores obtained by participants by responding to the two different instruments were computed and entered into the Statistical Package for the Social Sciences (SPSS); now Predictive Analytics Software – PASW), version 16.

Some limitations on the use of the research instruments were identified. Among these limitations were the ecological validity of the instruments, mode of instrument administration and the general problem with self-report instruments (solely trusting that participants provide the 'right' information). Some plausible solutions were suggested to remedy these limitations. However, these limitations,

among others, informed the interpretation of the emergent results as well as the conclusions made.

The data analysis was done in two main stages; a preliminary analysis stage where the results of the individual variables (MP and EI) were presented and discussed separately, and the main analysis stage where the two variables were brought together in order to see their areas of convergence. Both descriptive and inferential statistical tools were drawn upon, since both instruments yielded data on an interval/ratio scale. The descriptive statistical tools included the use of frequencies, means and standard deviations as summaries of the observations made from the responses of participants. Besides the statistical tools, qualitative analytical approaches such as thematic analysis and inductive/deductive interpretivism were also employed.

The assumptions needed to be satisfied for the use of the inferential statistical tools were tested. The Kolmogorov-Smirnov test of normality for example, was used to test whether the distribution of scores on the dependent variable were normally distributed. This is a fundamental assumption for most inferential statistical tools such as ANOVA and regression.

The first three research questions (which corresponded to the three research hypotheses) aimed at finding out if there was any significant difference in the emotional intelligence and musical preferences of participants who either differed or shared preferences for musical genres within different musical dimensions. The hypothesis that required testing by showing a relationship between the variables were tested by computing both the Pearson's Correlational

Coefficient (*r)* for the two variables and comparing the resultant scores (*p*) to the critical values obtained at a .05 alpha level, and also by using a multiple regression approach; computing an *F* statistic and checking the two-tailed significant value in the light of the R^2 (the amount of variance in the dependent variable that could be attributed to changes in the independent variable). This was to test if there were any statistically significant outcomes that could lead to the rejection of the null hypothesis in each case. The other hypotheses that sought to find out if there were significant differences in the variables were tested using ANOVAs (with Post-hoc tests – Bonferroni and Scheffe in some instances) and *t* tests.

Based on the outcomes of the hypotheses testing, I addressed the research questions in terms of inductive analysis (evidence gathered from the data and manifested by the outcome of the hypotheses), deductive analysis (top-down relationships of the outcomes to the available literature and theoretical foundations addressed in Chapter Two) and logic (the personal interpretations based on my own experiences as a researcher). The interpretation and discussion of the results took cognizance of a number of ecological factors, including: the nature of the sample, the environmental constraints (as addressed in the limitations), the atmosphere in which the instruments were administered and the time participants took in answering the questions.

To represent the outcomes of the analysis and to give visual displays of data, I resorted to the use of tables (descriptive, matrices, correlation), graphs (mean plots, scatter dots/plots, histogram) and charts (figures and network maps).

Presentation of major findings

Following from the trend of the analysis, the presentation of findings is done in two main stages. The first stage presents findings on the individual variables (MP and EI) separately. I investigated three major factors (gender, age and musical training) in relation to MP. The second stage then presents findings that show the connections between the two variables. The presentation of findings is therefore, done under three main sub-headings (findings on musical preference, findings on emotional intelligence, general findings – connecting the findings) for ease of reference.

Findings on musical preference

Firstly, there was a difference in the musical preferences of males and females in this study. This supports O'Neill's (1997) assertion that "there are striking gender differences in boys' and girls' preferences for music and musical activities." Whereas the male participants in this study indicated a stronger preference for the musical genres under the Reflective and Complex (Classical, Blues, Folk/Traditional, Jazz) as well as the Intense and Rebellious (Soul/Funk, Alternative, Heavy Metal, Rock) dimensions, their female counterparts indicated stronger preferences for the musical genres under the Upbeat and Conventional (Country, Religious/Gospel, Pop, Highlife, Soundtrack / Theme Songs) as well as the Energetic and Rhythmic (Dance/Electronic, Hip-Life, Rap/Hip-Hop) dimensions. It must however be noted, that the difference did not reach statistical significance.

Secondly, the participants in the two younger age groups (17-21, 22-26) indicated stronger preferences for many of the musical genres than did the participants in the older age groups (27-31, 32 and above). It seems therefore, that the older people become, the more restricted they also become in their musical preferences. This observation was particularly evident in the preference for the musical genres under the Energetic and Rhythmic dimension which appeared to decrease with age (see appendix H). Thus, it seemed the older participants were more conservative and had consolidated their musical preferences than the younger participants who displayed more variety in their preferences for musical genres under the different dimensions. The differences in the musical preferences of participants within the four age ranges were however, not statistically significant.

Thirdly, the preference pattern of the participants differed with respect to their years of musical training. The difference was more obvious between those who reported to have had no formal musical training and those who reported having had seven years and above of formal musical training. In all, those in the latter group indicated stronger preferences for three out of the four broad musical dimensions (Reflective and Complex, Intense and Rebellious, Upbeat and Conventional), and those in the former group indicated their stronger preference for the remaining dimension, Energetic and Rhythmic (see mean plots in appendix J). It appears the seven years and more of the musical training had exposed such participants to a wider range of musical genres and their preferences were comparably, more varied. There is ample evidence in the literature to support a

relationship between musical training and preference for ‘complex’ music, but a relationship between musical training and preference for less sophisticated ‘mainstream’ music as shown by the participants in this study is quite uncommon. The participants with one up to three years of musical training indicated the least preferences for the musical genres in three out of the four major music dimensions.

Furthermore, the musical preferences for the four broad dimensions of music were found to be inter-correlated. The participants, who indicated their strongest preferences for the musical genres under the Reflective and Complex dimension, also selected the genres under the Upbeat and Conventional dimension as the second most preferred musical dimensions. The opposite of this observation was also true. The Intensive and Rebellious dimension also correlated positively with all the three other musical dimensions. This implies that the musical preferences of the participants were varied. The participants, in spite of their most preferred musical genres, also engaged in the listening of other musical genres, irrespective of the broader musical dimensions under which such genres were classified.

Findings on emotional intelligence

The first important finding under this variable is that, the overall mean score of participants in this study was significantly lower than the mean of the normalization sample (which is the specified population whose parameters the

sample statistics are compared). The participants in this study had their mean overall EI score falling below one standard deviation away from the mean.

Secondly, the MSCEIT sub-scores (both the area scores and the branch scores) of these participants were also comparably lower. Notwithstanding the low scores, the participants showed more strength in the Strategic area of EI than in the Experiential area. Ranking the performance of the participants by their EI branch scores, the participants scored highest in the Understanding of emotions branch. This was followed in descending order by the Managing of emotions branch, the Use of emotions branch and the Perception of emotions branch respectively. This is a kind of direct reversal of the arrangement of the EI branches; thus, the participants scored highest in the more difficult branches of MSCEIT and lowest on the comparatively less difficult branch.

The mean bias score of participants was found to be similar to that of the normalization sample; there was no significant difference. The positive-negative-bias scores of participants were fairly consistent across participants irrespective of their gender, age or musical training.

Two major sub-variables (gender and age) were also considered in relation to the EI scores of participants. The findings made under these variables are presented below.

In all, the females performed better in the MSCEIT than their male counterparts in this study. The superiority of females over males as far as the MSCEIT is concerned finds justification in the reviewed literature (Mayer,

Salovey & Caruso, 2002). The females in this study outscored the males in the overall EI, in the two MSCEIT areas, as well as in three out of the four MSCEIT branches (see the descriptive details in appendix L). Thus the only branch in which the males outscored the females was the Use of Emotions branch.

In terms of age, the findings made in this study were directly contradictory to the trend reported in the literature. According to Geher (2004, p. 7), "… there is consensus among researchers that emotional intelligence develops with age." In contrast to this growing consensus, however, the participants within the youngest age group in this study, were found to have scored higher in the MSCEIT than their counterparts in the oldest age group.

Connecting the findings

West (2009) avers that "sound has an ability to bypass the linguistic system of awareness and stimulate emotions in ways that we are less verbally conscious of" (p. 285). The connections between emotions and sound (specifically music) that are revealed in this study provides some empirical evidence to this postulation of West.

To begin with, I found a positive significant relationship between preference for the Upbeat and Conventional music dimension and the overall EI scores of participants.

Preference for Soundtrack/Theme songs (which is a sub-genre in the Upbeat and Conventional dimension) also significantly correlated positively with

the Strategic area scores of participants, as well as with two MSCEIT branch scores (understanding emotions and managing emotions). This observation on the relationship between Sountracks and improved EI scores supports the claim that "separated from the context where they are produced or heard, sounds carry little meaning by themselves" (West, 2009. p.284). Since Soundtracks / theme songs normally accompany movies and other visual sketches, the emotions they arouse are likely to be more intense because multiple senses are involved. The emotions carried in the story that is told in the movies complement the emotions carried in the accompanying music so that when the music is heard, the perceiver relates the it to the particular movie to which it was associated and this definitely heightens the emotions than if the music was unrelated to any other thing. This is probably why there is a positive correlation between Soundtracks/ Theme songs and improved EI scores.

The Intense and Rebellious music dimension also significantly correlated negatively with one of the MSCEIT area scores (the Strategic EI) and one of the MSCEIT branch scores (the Understanding of emotions branch).

Also, preference for Rock (which is a sub-genre under the Intense and Rebellious dimension) was found to be significantly correlated negatively with the Understanding of emotion branch of the MSCEIT.

Furthermore, what appears to be cogent explanations that support the foregoing correlations and which make the correlations likely to be more than sheer coincidences were discovered.

First of all, the female participants indicated a stronger preference for the musical genres in the Upbeat and Conventional dimension (which was positively correlated with the overall EIQs). Subsequently, they scored higher in the MSCEIT than their male counterparts who generally indicated a stronger preference for the musical genres under the Intense and Rebellious dimension (which was negatively correlated with the overall EIQs).

In the same vein, the younger participants indicated stronger preference for the musical sub-genres under the Upbeat and Conventional dimension and ended up scoring higher in the MSCEIT than their older counterparts who indicated stronger preferences for the musical sub-genres under the Intense and Rebellious dimension.

Therefore, compelling evidence was found to claim that, on one hand, there is a positive relationship between preference for the musical sub-genres under the Upbeat and Conventional dimension (especially preference for Soundtracks/Theme Songs) and improved EI scores. On the other hand, there is a negative relationship between preference for the musical sub-genres under the Intense and Rebellious dimension (especially preference for Rock) and improved EI scores.

Conclusions

In the first place, it is necessary to acknowledge the inherent difficulty in trying to measure the two variables: MP and EI objectively. Getting an

instrument that is cross-culturally viable in its theoretical and philosophical underpinnings, particularly for the measurement of musical preferences is quite an intricate task. Because of this, the responses of participants, upon which the findings are pitched, must be viewed with some level of cautiousness. Considering the familiarity theories that guided the MP variable (mere exposure, social judgment, anchor and heuristic adjustment theories), preferences for particular musical genres cannot be developed unless the people are familiar with those particular musical genres. Since I am part of the bigger community from which the sample was drawn, I know very well that some of the musical genres on the musical preference instrument (STOMP) are not as popular. Genres such as Alternative, Rock, Blues, Punk, Dance/Electronica and Heavy Metal are not musical genres one often hears on popular Ghanaian media airwaves or that are readily available in Ghanaian music stores. Any participant, who indicated a preference for these musical genres, for example, may have heard songs in this genre online or in a different setting.

Nonetheless, the findings point clearly to the possibilities of stronger relationships between preference for some musical dimensions and improved EI scores. Indeed, the data pointed to the fact that there are identifiable differences in the emotional intelligence of different people who prefer different musical dimensions. Two major areas of difference between participants that have a bearing on their musical preferences and emotional intelligence are gender and age. In spite of the identified differences the conclusion cannot be made that the EI of the participants is the sole result of their musical preferences. The EI of

participants who indicated their preferences for the same musical dimensions were largely similar. Thus, the EI of the participants varied between different preference groups but not within the same preference groups.

The use of the mixed method design in this exploratory study was very helpful. Indeed the expressive combination of the strengths of both the qualitative and the quantitative paradigms has produced greater insights on the phenomenon under study, which would have been difficult to realize if only a qualitative or only a quantitative paradigm was employed.

In conclusion, this study has given a broad panoramic sight into the nature of the relationship between musical preference and emotional intelligence. The design, the limitations, the findings and the recommendations for future research, together form a rich aggregate of information that can together act as a very fruitful step for further research.

Recommendations

First of all, researchers who would want to adopt and use the Short Test of Musical Preferences (STOMP) in any future research must ensure that they play at least one of the exemplar songs under each of the sub-genres to participants. This will ensure that the participants have a good idea of the nature of the genres before indicating their preferences. Researchers should not take it for granted that participants know the differences between the genres; for example between pop and rock, or between blues and jazz, and so on. It will be useful for future

research to localize the music genres that are specified on the STOMP. Some of the musical genres that participants were required to indicate their preference for were totally foreign within the Ghanaian terrain.

Secondly, although the list of exemplar songs provided by the STOMP authors are vivid apotheosis of the genres they represent, it will be quite necessary to update the list from time to time; for example to include the tracks from the top-ten weekly selections of each of the genres. This is because, songs in the popular domain quickly change, new artists emerge, and people get to listen to different songs even within the same genre as time goes on. The inverted-U curves in my theoretical foundations of MP provide an explanation: that when particular songs are over-exposed to such an extent that the listeners get very little or no new information from it, their level of arousal caused by the musical stimulus is decreased. Because of this, people are always looking for 'something new' to listen to (particularly in the popular music domain). This is why it will be necessary to update the list of exemplar songs with time. The update must however, consider the age ranges of the particular sample at the time.

Also, the use of the MSCEIT for participants who are not native speakers of English must be guided with extreme care. Where it is possible to have a translation of the instrument into the major language of the participants, the necessary steps must be taken to do so. For example there is already a translated version of the MSCEIT in Italian. This is because vivid descriptions of emotional details are difficult to do in a foreign language; and this may impact the scores negatively. Still on the use of the MSCEIT, future researchers must carefully

check the reliability of the internet services within their area of administration before opting for the online administration and scoring. The items on the MSCEIT are many, and so if the internet also frustrates the participants, they may just get irritated and answer the questions anyhow. Researchers must opt for a paper-and-pencil format where the internet services are not very reliable.

Furthermore, the use of a larger and a more varied sample in future research is highly recommended. In a sense, the participants in this study, varied though they were, still shared many similar characteristics which influenced their responses as well. The qualitative inductive analysis as well as the thematic analysis of the emergent data found a number of interesting patterns which the quantitative analysis proved to be statistically insignificant. It is believed that the use of a larger sample that is more varied in their characteristics will produce results that may reach statistical significance and give much weight to the findings in this study. Future researchers may find it useful to do purposeful random sampling and try to incorporate people with different personality types such as sanguine, choleric, phlegmatic and melancholic.

Last but not least, Ghanaian music educators must pay more attention to research on music and emotion. The findings in this study indicates that the area is very green and needs a lot of effort so that together, the efforts will complement each other to produce a fruitful body of knowledge upon which musical practice can be pitched. Such findings can help in formulating philosophies that will guide music education practice in Ghana.

For further studies, scholars are encouraged to zoom in to investigating the characteristics of the musical dimensions and genres that correlated with various EI scores (Upbeat and Conventional as well as Intense and Rebellious dimensions, Soundtracks / Theme songs and Rock musical genres); focusing attention on which characteristics there are in such songs which are absent in other songs and which may contribute to aspects of EI. Recognition of emotion in music as an aspect of EI has already been established, the relationship between Music Performance Anxiety and EI has also been noted, musical preference also appears to have a relationship with EI. What else is there in music that has a bearing on EI?

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Appendix A

Exemplar songs for each of 14 music genres

Genre	Song	Artist/Composer
	Music Dimension 1: Reflective and Complex	
Blues	Nobody Loves Me But My Mother	B. B. King
	Spoonful	Howling Wolf
	Hideaway	John Mayall and Blues Breakers
	40 Days and 40 Nights	Muddy Waters
	Ray's Blues	Ray Charles
	Train My Baby	Robert Lockwood Jr.
	In Step	Stevie Ray Vaughan
	Mama He Treats Your Daughter Mean	Susan Tedeschi
	Already Gone	Robert Cray
	T-Bone Blues	T-Bone Walker
Folk	Precious Memories	Bill Monroe
	Blowing in the Wind	Bob Dylan
	For What It's Worth	Buffalo Springfield
	Become You	Indigo Girls
	Fire and Rain	James Taylor
	Riverboat Set: Denis Dillon's Square Dance Polka, Dancing on the Riverboat	John Whelan
	Packin Truck	Leadbelly
	Ride	Nick Drake
	Sounds of Silence	Simon and Garfunkel
	House of the Rising Sun	Joan Baez
Classical	Six Suites for Cello: Suite 1	Johann Sebastian Bach

Appendix A continued

	Symphony No.9, Op. 125: 4‟ movement (Presto-Allegro assai; “Ode to Joy”)	Ludwig van Beethoven
	Gianni Schicci: O mio babbino caro.	Giacomo Puccini
	The tale of Tsar Sultan: Flight of the Bumblebee.	Nikolai Andreyevich Rimsky-Korsakov
	Clair de Lune	Debussy
	Marriage of Figaro, K. 492: Overture	Wolfgang Amadeus Mozart
	Madama Butterfly: Un bel di verdremo	Giacomo Puccini
	Ave Maria	Franz Schubert
	The Seasons: Spring	Antonio Vivaldi
	Díe Walküre: Ride of the Valkyries	Richard Wagner
Jazz	What a Difference a Day Makes	Billie Holiday
	Time Out	Dave Brubek
	The Feeling of Jazz	Duke Ellington
	Stella by Starlight	Herbie Hancock
	Giant Steps	John Coltrane
	The Look of Love	Diana Krall
	All Blues	Miles Davis
	Afternoon	Pat Metheny
	Summer in the City	Quincy Jones
	The Girl from Ipanema	Stan Getz
	Music Dimension 2: Intense and Rebellious	
Alternative	Narcissus	Alanis Morrisette
	Song 2	Blur
	It’s the End of the World	REM
	Coming down the mountain	Jane’s Addiction
	Why Go	Pearl Jam

Appendix A continued

	Bullet With Butterfly Wings	Smashing Pumpkins
	Bleed American	Jimmy Eat World
	Verse Chorus Verse	Nirvana
	Linger	Cranberries
	Everlong	Foo Fighters
Heavy Metal	Fight Song	Marilyn Manson
	Points of Authority	Linkin Park
	Angel of Death	Slayer
	Symphony of Destruction	Megadeath
	Welcome to the Jungle	Guns N' Roses
	Crazy Train	Black Sabbath
	Crawling in the Dark	Hoobastank
	Rollin	Limp Bizkit
	Too Bad	Nickleback
	War	System of a Down
Rock	Mary Jane's Last Dance	Tom Petty
	Jump	Van Halen
	Jealous Again	Black Crows
	Voodoo Child	Jimi Hendrix
	Brown Sugar	Rolling Stones
	YYZ	Rush
	Money	Pink Floyd
	Living on the Edge	Aerosmith
	San Berdino	Frank Zappa
	Living Loving Maid (She's Just a Woman)	Led Zeppelin

Appendix A continued

Music Dimension 3: Upbeat and Conventional		
Country	A Better Man	Clint Black
	Please Come to Boston	David Allen Coe
	If the South Would Have Won	Hank Williams Jnr
	Rusty Cage	Johnny Cash
	Ready to Run	Dixie Chicks
	Girls With Guitars	The Judds
	Whiskey River	Willie Nelson
	I'm Out of Here	Shania Twain
	If the World Had a front Porch	Alan Jackson
	When Love Finds You	Vince Gill
Religious	Amen	Larnell Harris
	Rock of Ages	Praise Band
	Where There Is Faith	4Him
	Lord I Lift Your Name on High	DC Talk
	Smell the Color 9	Chris Rice
	If We Ever	Take 6
	Come, Now Is the Time to Worship	WOW Worship
	All Rise	Babbie Manson
	Your Love, Oh Lord	Third Day
Pop	I'm A Slave (4 U) We Fit Together	Britney Spears O-Town
	Don't Make Me Love You	Christina Aguilera
	Material Girl	Madonna
	Shake Your Body (Down to the Ground)	The Jacksons
	Tell Me That I'm Dreaming	Backstreet Boys
	Independent Women Part 1	Destiny's Child

Appendix A continued

	I'm Real (Remix)	Jennifer Lopez feat. Ja Rule
	Bye Bye Bye	N'sync
	My Love Grows Deeper (Everyday)	Nelly Futado
	Music Dimension 4: Energetic and Rhythmic	
Funk	Superbad Part 1	James Brown
	Celebration	Kool and the Gang
	That's the Way (I Like It)	KC and the Sunshine Band
	Tear the Roof off the Sucker (Give Up the Funk)	George Clinton and Parliament
	It's Not the Crime	Tower of Power
	Dynamite	Sly and the Family Stone
	Pick Up the Pieces	Average White Band
	Shaft	Isaac Hayes
	Ecstasy	The Ohio Players
	Sir Duke	Stevie Wonder
Hip Hop	All Good	De La Soul
	Public Enemy # 1	Public Enemy
	Can I Kick It?	A Tribe Called Quest
	Don't See Us	The Rocks
	Hypnotize	Notorious B.I.G
	Funky For You	Common
	Easy Street	Eazy-E
	She's a Bitch	Missy "Misdemeanor" Elliot
	2 of Amerikaz Most Wanted	Tupac Shakur (featuring Snoop Doggy Dogg)
	The Next Episode	Dr. Dre (featuring Nane Dogg, Snoop Dogg)

Appendix A continued

Soul	Everything Is Everything	Lauryn Hill
	Can't Get Enough of Your Love Babe	Barry Waite
	If You Don't Know Me By Now	Marvin Gaye
	Cry For You	Jodeci
	L-O-V-E (Love)	Al Green
	Chain of Fools	Aretha Franklin
	Bag Lady	Eryka Badu
	Ain't No Sunshine When She's Gone	Bobby Blue Bland
	Untitled (How Does It Feel)	D'angelo
	I'd Rather Be With You	Bootsy Collins
Electronica	Kalifornia	Fatboy Slim
	Ibiza Mix	Paul Oakenfold
	Violently Happy	Bjork
	Radiation Ruling the Nation	Massive Attack
	Trans-Europe Express	Kraftwerk
	Roll It Up	The Crystal Method
	Never Let Me Down Again	Depeche Made
	Why Can't It Stop	Moby
	Watercolors	LTJ Bulcom
	What Does Your Soul Look Like	DJ Shadow

Appendix B

Highlights of the Short Test of Musical Preferences (STOMP)

Please indicate your basic preference for each of the following genres using the scale provided.

1----------2----------3----------4----------5----------6----------7

Dislike Strongly	Dislike Moderately	Dislike a Little	Neither like nor dislike	Like a Little	Like Moderately	Like Strongly

1. _____ Alternative
2. _____ Bluegrass
3. _____ Blues
4. _____ Classical
5. _____ Country
6. _____ Dance/Electronica
7. _____ Folk
8. _____ Funk
9. _____ Gospel
10. _____ Heavy Metal
11. _____ World
12. _____ Jazz
13. _____ New Age
14. _____ Oldies
15. _____ Opera
16. _____ Pop
17. _____ Punk
18. _____ Rap/hip-hop
19. _____ Reggae
20. _____ Religious
21. _____ Rock
22. _____ Soul/R&B
23. _____ Soundtracks/theme song

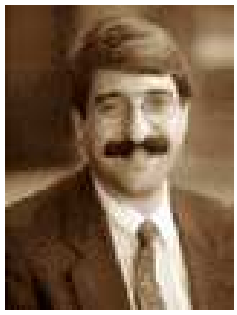
Appendix C

Highlights of the Mayer-Salovey-Caruso EI Test

Branch 1 – Perceiving and Identifying Emotions: the ability to recognize how you and those around you are feeling.

Example of MSCEIT Branch 1 – Identifying Emotions

Indicate the emotions expressed by this face.



Example of MSCEIT Branch 1 – Identifying Emotions

Indicate the emotions expressed by this face.

Happiness	**1**	**2**	**3**	**4**	**5**
Fear	**1**	**2**	**3**	**4**	**5**
Sadness	**1**	**2**	**3**	**4**	**5**

In this task you are asked to identify how a person felt based upon his or her facial expression and the extent to which images and landscapes expressed emotion.

Branch 2 – Facilitation of Thought: the ability to generate emotion, and then reason with this emotion. Assimilating basic emotional experiences into mental life, including weighing emotions against one another and against other sensations and thoughts, and allowing emotions to direct attention.

Example of MSCEIT Branch 2 – Using Emotions

What mood(s) might be helpful to feel when meeting in-laws for the very first time?

	Not Useful				***Useful***
Tension	1	2	3	4	5
Surprise	1	2	3	4	5
Joy	1	2	3	4	5

The two elements of this branch are the sensations (empathy) tasks and facilitation (moods) tasks. In the sensations (empathy) tasks of the test you will compare different emotions to different situations such as light, colour, and temperature. In the facilitation (moods) task you are assessed on your ability to generate a mood to assist and support thinking and reasoning.

Branch 3 – Understanding Emotions: the ability to understand complex emotions and emotional "chains", how emotions transition from one stage to

another. The ability to recognise the emotions, to know how they unfold, and to reason about them accordingly.

Example of MSCEIT Branch 3 – Understanding Emotions

Tom felt anxious, and became a bit stressed when he thought about all the work he needed to do. When his supervisor brought him an additional project, he felt ____. (Select the best choice.)

a) Overwhelmed

b) Depressed

c) Ashamed

d) Self Conscious

e) Jittery

In this task you will be asked to analyze blends of emotions for their parts and assemble simple emotions into compound emotions. For example, what emotions combine to form a feeling of contempt? Secondly, you are assessed on your knowledge of emotional "chains"; how emotions transition from one to another. For example, how anger can change into rage.

Branch 4 – Managing Emotions: the ability which allows the management and regulation of emotion in oneself and others, such as knowing how to calm down after feeling angry or being able to empathise with and alleviate the anxiety of another person.

Appendix C continued

Example of MSCEIT Branch 4 – Managing Emotions

Debbie just came back from vacation. She was feeling peaceful and content. How well would each action preserve her mood?

Action 1: She started to make a list of things at home that she needed to do.

Very Ineffective..1.....2.....3.....4.....5..Very Effective

Action 2: She began thinking about where and when she would go on her next vacation.

Very Ineffective..1.....2.....3.....4.....5..Very Effective

Action 3: She decided it was best to ignore the feeling since it wouldn't last anyway.

Very Ineffective..1.....2.....3.....4.....5..Very Effective

The emotion management tasks of Branch 4 measure your ability to:

1. Regulate your own emotion in decision making (self-management); and
2. Incorporate your emotions and the emotions of others into decision making that impact on other people (social management). You were assessed on how effective different actions would be in achieving an outcome involving other people.

NB: The highlight of the MSCEIT as presented above were copied from www.mikegosling.com

Appendix D

Permission for the use of the STOMP

Eric Otchere <ericusdebby@gmail.com> 10/11/12

to Gosling

Hello Sir,

My name is Eric Debrah Otchere.

I am a PhD (Music Education) candidate in the University of Cape Coast – Ghana, and I would humbly like to use your Short Test of Musical Preferences in collecting data for my research.

I will be happy to share the outcome of my study with you.

Thank you very much.

Sincerely,

Eric Debrah Otchere

Department of Music and Dance

University of Cape Coast

Cape Coast

Ghana

+233 201916851

10/12/12

Sam Gosling <gosling@psy.utexas.edu>

Hi Eric,

I'm forwarding your request to Jason Rentfrow, the lead researcher on this project.

All the best, Sam G

www.snoopology.com

On Oct 11, 2012, at 2:40 PM, "Eric Otchere" <ericusdebby@gmail.com> wrote:

On Friday, October 12, 2012, Sam Gosling wrote:

Hi Eric,

Alright Sir,

Thank you very much for the prompt response.

Sincerely,

Eric

Appendix D continued

10/15/12

Jason Rentfrow <pjr39@cam.ac.uk>

to me

Hi Eric,

Thanks for your interest in this work. Please feel free to use the STOMPR in your project.

best,

Jason

STOMP-R_.doc

24K View Download

Hello Sir,

I am heartily grateful for your kind permission to go ahead and use the STOMP-R. I will be very happy to share my results with you when all is done.

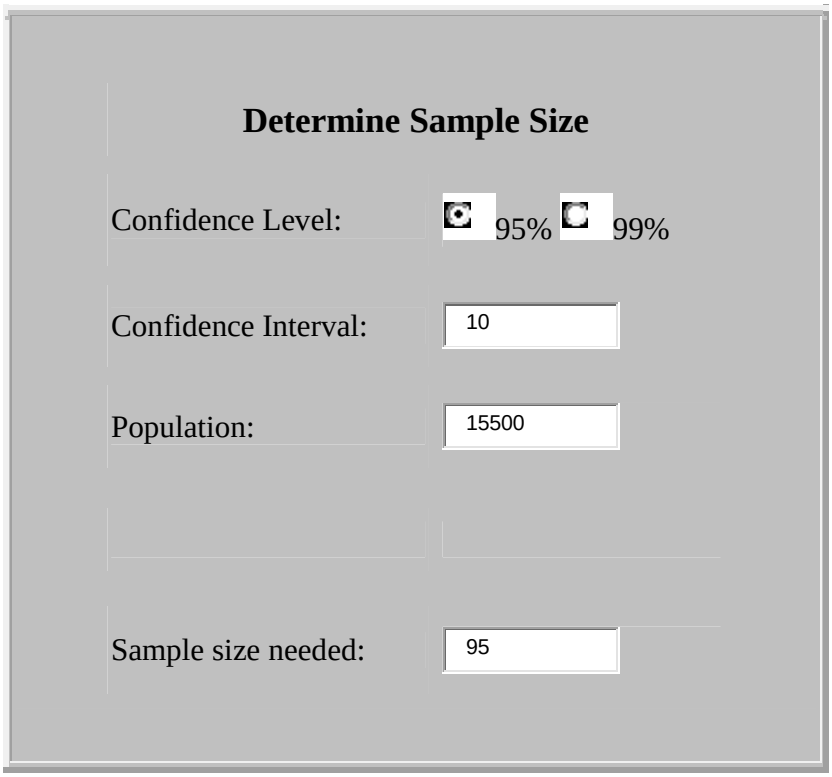
Once again, thank you very much.

Sincerely,

Eric Debrah Otchere

APPENDIX E

Sample size calculator



http://www.surveysystem.com/sscalc.htm

Appendix F

Gender differences in the different musical genres

						95% Confidence Interval for Mean			
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Preference for Classical music	Male	50	5.3800	1.70102	.24056	4.8966	5.8634	.00	7.00
	Female	50	4.7200	1.96956	.27854	4.1603	5.2797	.00	7.00
	Total	100	5.0500	1.86068	.18607	4.6808	5.4192	.00	7.00
Preference for Blues	Male	50	4.6800	2.02474	.28634	4.1046	5.2554	.00	7.00
	Female	50	4.5400	1.88669	.26682	4.0038	5.0762	.00	7.00
	Total	100	4.6100	1.94830	.19483	4.2234	4.9966	.00	7.00
Preference for Country music	Male	50	5.4200	1.55301	.21963	4.9786	5.8614	1.00	7.00
	Female	50	5.4600	1.88669	.26682	4.9238	5.9962	.00	7.00
	Total	100	5.4400	1.71929	.17193	5.0989	5.7811	.00	7.00
Preference for Dance/Electronica	Male	50	2.9600	2.09917	.29687	2.3634	3.5566	.00	7.00
	Female	50	3.0000	1.96915	.27848	2.4404	3.5596	.00	7.00
	Total	100	2.9800	2.02500	.20250	2.5782	3.3818	.00	7.00
Preference for Folk/Traditional music	Male	50	5.1800	1.72248	.24360	4.6905	5.6695	.00	7.00
	Female	50	4.4400	1.82007	.25740	3.9227	4.9573	1.00	7.00
	Total	100	4.8100	1.80177	.18018	4.4525	5.1675	.00	7.00
Preference for Rap/Hip-hop/ Hip-life	Male	50	3.5200	2.35814	.33349	2.8498	4.1902	.00	7.00
	Female	50	4.3800	2.11785	.29951	3.7781	4.9819	1.00	7.00
	Total	100	3.9500	2.27136	.22714	3.4993	4.4007	.00	7.00

Appendix F continued

Preference for Soul/Funk	Male	50	3.8000	2.23150	.31558	3.1658	4.4342	.00	7.00
	Female	50	3.6200	2.00906	.28412	3.0490	4.1910	.00	7.00
	Total	100	3.7100	2.11438	.21144	3.2905	4.1295	.00	7.00
Preference for Religious/Gospel music	Male	50	6.4000	1.14286	.16162	6.0752	6.7248	1.00	7.00
	Female	50	6.0400	1.57739	.22308	5.5917	6.4883	.00	7.00
	Total	100	6.2200	1.38228	.13823	5.9457	6.4943	.00	7.00
Preference for Alternative music	Male	50	1.8600	2.01028	.28430	1.2887	2.4313	.00	6.00
	Female	50	1.7400	1.98782	.28112	1.1751	2.3049	.00	6.00
	Total	100	1.8000	1.98987	.19899	1.4052	2.1948	.00	6.00
Preference for Jazz	Male	50	4.7800	1.95135	.27596	4.2254	5.3346	.00	7.00
	Female	50	4.2400	1.87964	.26582	3.7058	4.7742	.00	7.00
	Total	100	4.5100	1.92535	.19253	4.1280	4.8920	.00	7.00
Preference for Rock	Male	50	3.4000	1.93781	.27405	2.8493	3.9507	.00	7.00
	Female	50	3.2200	1.82153	.25760	2.7023	3.7377	.00	7.00
	Total	100	3.3100	1.87323	.18732	2.9383	3.6817	.00	7.00
Preference for Pop/Highlife	Male	50	4.8800	1.92343	.27201	4.3334	5.4266	.00	7.00
	Female	50	5.2200	1.64491	.23262	4.7525	5.6875	1.00	7.00
	Total	100	5.0500	1.78871	.17887	4.6951	5.4049	.00	7.00
Preference for Heavy Metal music	Male	50	1.8200	1.83715	.25981	1.2979	2.3421	.00	7.00
	Female	50	1.6000	1.87355	.26496	1.0675	2.1325	.00	6.00
	Total	100	1.7100	1.84935	.18494	1.3430	2.0770	.00	7.00
Preference for Soundtracks/Theme songs	Male	50	3.5200	2.34077	.33103	2.8548	4.1852	.00	7.00
	Female	50	3.6800	2.03480	.28776	3.1017	4.2583	.00	7.00
	Total	100	3.6000	2.18350	.21835	3.1667	4.0333	.00	7.00

Appendix G

Age differences and preference for the broad musical dimensions

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
17-21	27	2.3704	1.04323	.20077	1.9577	2.7831	1.00	4.00
22-26	53	2.5660	1.35177	.18568	2.1934	2.9386	1.00	6.00
27-31	12	2.5833	1.24011	.35799	1.7954	3.3713	1.00	4.00
32 and above	8	2.6250	1.50594	.53243	1.3660	3.8840	1.00	5.00
Total	100	2.5200	1.25915	.12591	2.2702	2.7698	1.00	6.00

Appendix G continued

Age differences and preference for specific musical genres

						95% Confidence Interval for Mean			
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Preference for Classical music	17-21	27	4.5926	2.45356	.47219	3.6220	5.5632	.00	7.00
	22-26	53	5.3396	1.58045	.21709	4.9040	5.7752	1.00	7.00
	27-31	12	4.6667	1.66969	.48200	3.6058	5.7275	2.00	7.00
	32 and above	8	5.2500	1.38873	.49099	4.0890	6.4110	3.00	7.00
	Total	100	5.0500	1.86068	.18607	4.6808	5.4192	.00	7.00
Preference for Blues	17-21	27	4.7407	1.99215	.38339	3.9527	5.5288	.00	7.00
	22-26	53	4.5472	2.06217	.28326	3.9788	5.1156	.00	7.00
	27-31	12	4.3333	1.87487	.54123	3.1421	5.5246	1.00	7.00
	32 and above	8	5.0000	1.19523	.42258	4.0008	5.9992	3.00	7.00
	Total	100	4.6100	1.94830	.19483	4.2234	4.9966	.00	7.00
Preference for Country	17-21	27	5.1111	2.13638	.41115	4.2660	5.9562	.00	7.00

Appendix G continued

music	22-26	53	5.6415	1.57009	.21567	5.2087	6.0743	1.00	7.00
	27-31	12	4.6667	1.43548	.41439	3.7546	5.5787	2.00	7.00
	32 and above	8	6.3750	.74402	.26305	5.7530	6.9970	5.00	7.00
	Total	100	5.4400	1.71929	.17193	5.0989	5.7811	.00	7.00
Preference for Dance/Electronica	17-21	27	3.2963	2.16288	.41625	2.4407	4.1519	.00	7.00
	22-26	53	2.7736	2.02524	.27819	2.2154	3.3318	.00	7.00
	27-31	12	3.5833	1.56428	.45157	2.5894	4.5772	1.00	6.00
	32 and above	8	2.3750	2.13391	.75445	.5910	4.1590	.00	6.00
	Total	100	2.9800	2.02500	.20250	2.5782	3.3818	.00	7.00
Preference for Folk/Traditional music	17-21	27	4.8148	2.13104	.41012	3.9718	5.6578	.00	7.00
	22-26	53	4.8113	1.66475	.22867	4.3525	5.2702	.00	7.00
	27-31	12	5.0000	1.90693	.55048	3.7884	6.2116	2.00	7.00
	32 and above	8	4.5000	1.60357	.56695	3.1594	5.8406	2.00	7.00
	Total	100	4.8100	1.80177	.18018	4.4525	5.1675	.00	7.00
Preference for Rap/Hip-hop/ Hip-life	17-21	27	4.4074	2.27460	.43775	3.5076	5.3072	1.00	7.00
	22-26	53	3.8679	2.29580	.31535	3.2351	4.5007	.00	7.00
	27-31	12	3.7500	2.37888	.68672	2.2385	5.2615	1.00	7.00

	32 and above	8	3.2500	2.05287	.72580	1.5338	4.9662	1.00	7.00
	Total	100	3.9500	2.27136	.22714	3.4993	4.4007	.00	7.00
Preference for Soul/Funk	17-21	27	3.5185	2.15497	.41472	2.6660	4.3710	.00	7.00
	22-26	53	3.8868	2.12730	.29221	3.3004	4.4731	.00	7.00
	27-31	12	3.1667	1.85047	.53418	1.9909	4.3424	1.00	6.00
	32 and above	8	4.0000	2.44949	.86603	1.9522	6.0478	1.00	7.00
	Total	100	3.7100	2.11438	.21144	3.2905	4.1295	.00	7.00
Preference for Religious/Gospel music	17-21	27	6.1852	1.24150	.23893	5.6941	6.6763	2.00	7.00
	22-26	53	6.2830	1.39197	.19120	5.8993	6.6667	1.00	7.00
	27-31	12	6.5833	.51493	.14865	6.2562	6.9105	6.00	7.00
	32 and above	8	5.3750	2.32609	.82240	3.4303	7.3197	.00	7.00
	Total	100	6.2200	1.38228	.13823	5.9457	6.4943	.00	7.00
Preference for Alternative music	17-21	27	1.1852	1.68790	.32484	.5175	1.8529	.00	5.00
	22-26	53	1.8491	2.09758	.28813	1.2709	2.4272	.00	6.00
	27-31	12	3.0000	1.80907	.52223	1.8506	4.1494	.00	6.00
	32 and above	8	1.7500	1.90863	.67480	.1543	3.3457	.00	5.00

Appendix G continued

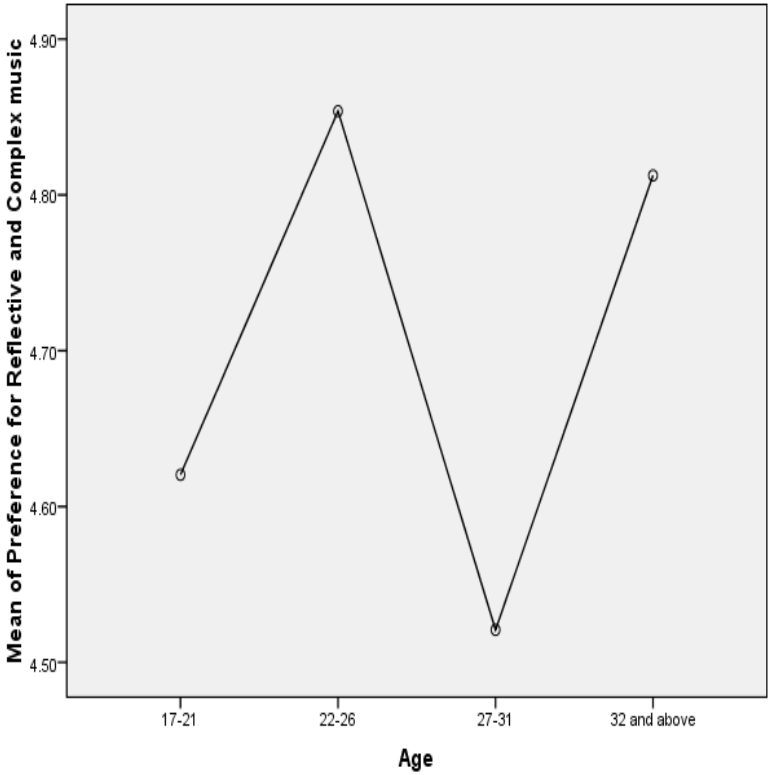
	Total	100	1.8000	1.98987	.19899	1.4052	2.1948	.00	6.00
Preference for Jazz	17-21	27	4.3333	2.20140	.42366	3.4625	5.2042	1.00	7.00
	22-26	53	4.6981	1.92738	.26475	4.1669	5.2294	.00	7.00
	27-31	12	4.0833	1.78164	.51432	2.9513	5.2153	1.00	7.00
	32 and above	8	4.5000	1.06904	.37796	3.6063	5.3937	3.00	6.00
	Total	100	4.5100	1.92535	.19253	4.1280	4.8920	.00	7.00
Preference for Rock	17-21	27	3.4444	1.92820	.37108	2.6817	4.2072	.00	7.00
	22-26	53	3.3208	1.99782	.27442	2.7701	3.8714	.00	7.00
	27-31	12	3.0000	1.41421	.40825	2.1015	3.8985	1.00	5.00
	32 and above	8	3.2500	1.66905	.59010	1.8546	4.6454	1.00	5.00
	Total	100	3.3100	1.87323	.18732	2.9383	3.6817	.00	7.00
Preference for Pop/Highlife	17-21	27	5.4444	1.60128	.30817	4.8110	6.0779	1.00	7.00
	22-26	53	4.8491	1.99419	.27392	4.2994	5.3987	.00	7.00
	27-31	12	4.9167	1.62135	.46804	3.8865	5.9468	2.00	7.00
	32 and above	8	5.2500	1.03510	.36596	4.3846	6.1154	3.00	6.00
	Total	100	5.0500	1.78871	.17887	4.6951	5.4049	.00	7.00
Preference for Heavy	17-21	27	1.4444	1.84669	.35540	.7139	2.1750	.00	6.00

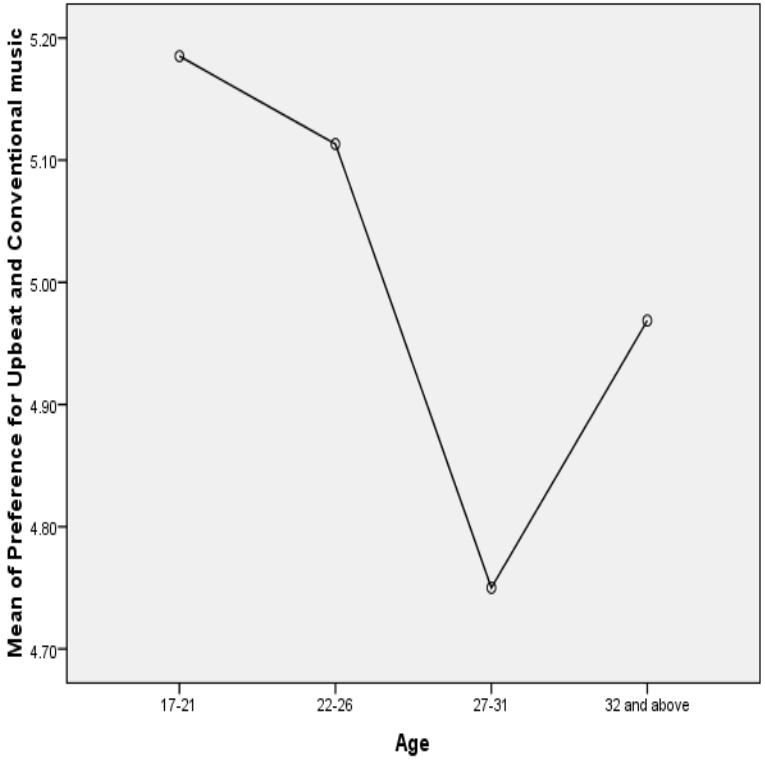
Appendix G continued

Metal music	22-26	53	1.6038	1.77958	.24444	1.1133	2.0943	.00	6.00
	27-31	12	3.1667	2.03753	.58818	1.8721	4.4612	.00	7.00
	32 and above	8	1.1250	1.12599	.39810	.1836	2.0664	.00	3.00
	Total	100	1.7100	1.84935	.18494	1.3430	2.0770	.00	7.00
Preference for Soundtracks/Theme songs	17-21	27	4.0000	2.03810	.39223	3.1938	4.8062	.00	7.00
	22-26	53	3.6792	2.30195	.31620	3.0447	4.3137	.00	7.00
	27-31	12	2.8333	1.89896	.54818	1.6268	4.0399	.00	5.00
	32 and above	8	2.8750	2.16712	.76619	1.0632	4.6868	.00	6.00
	Total	100	3.6000	2.18350	.21835	3.1667	4.0333	.00	7.00

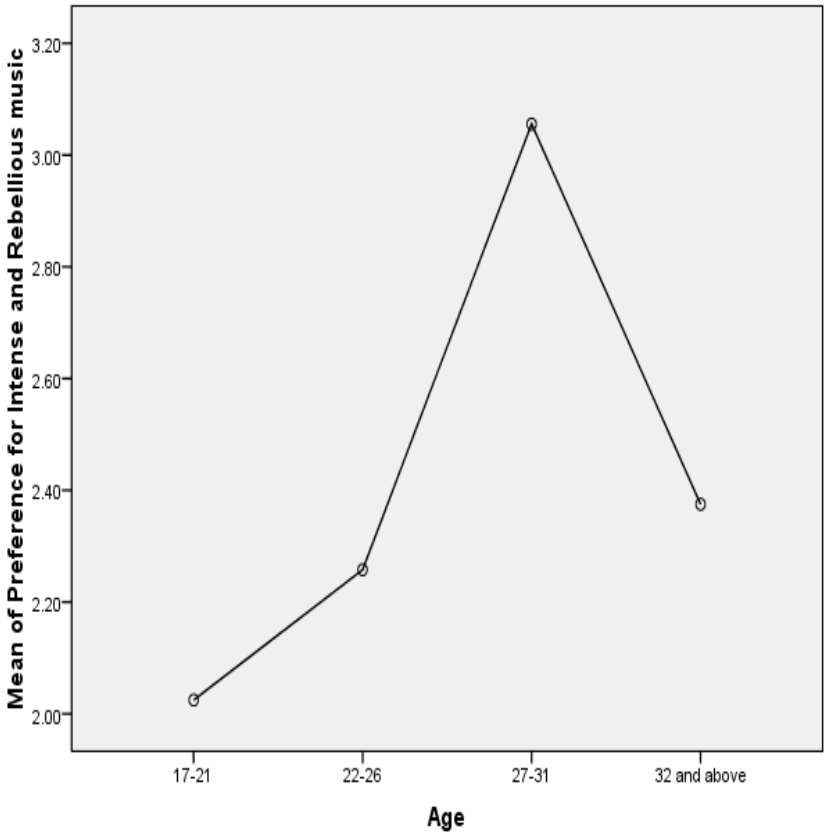
Appendix H

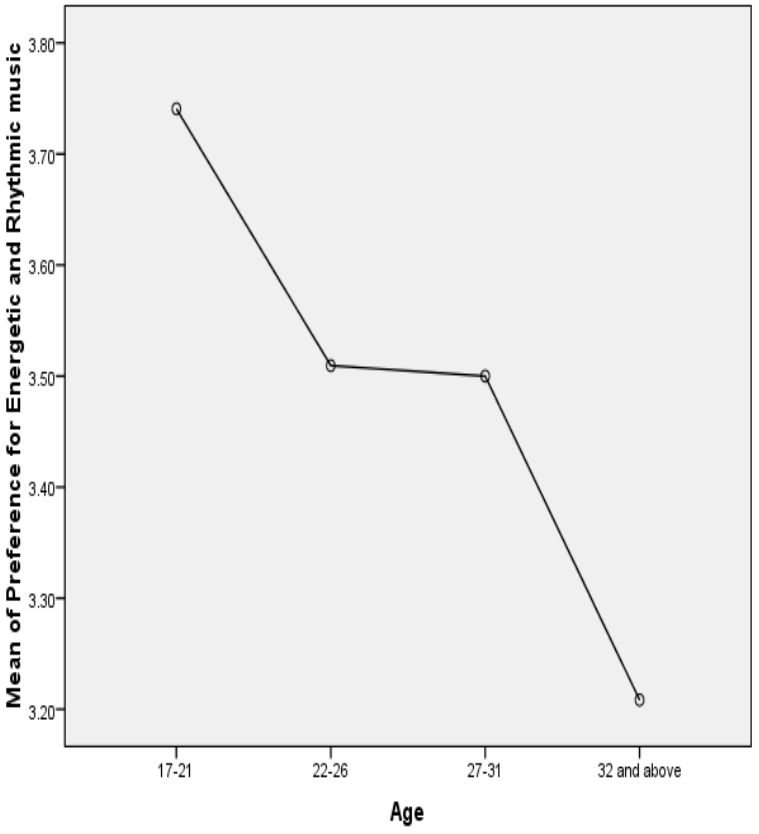
Means plot showing the preference patterns of the different age groups





Appendix H continued





Appendix I

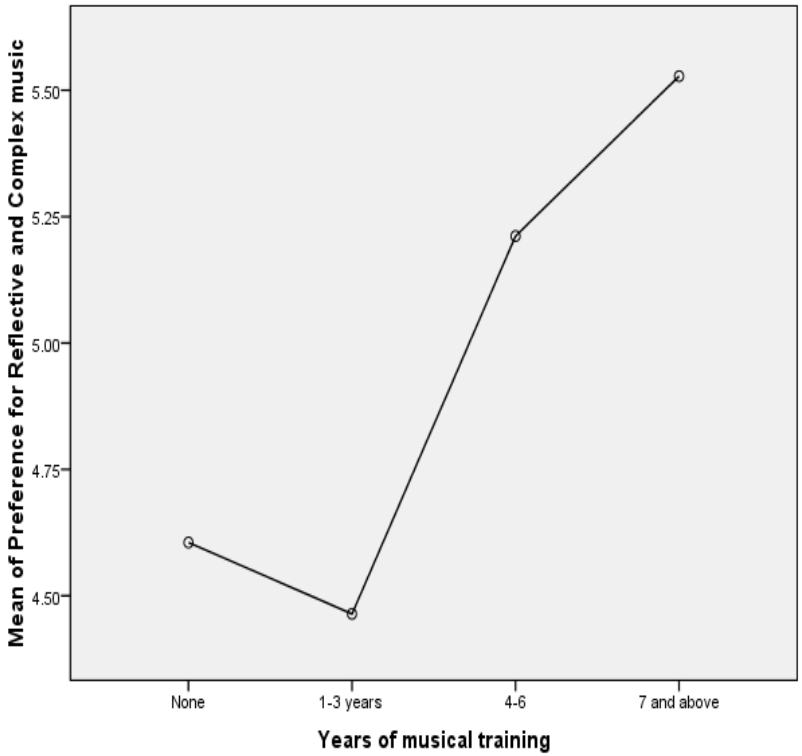
Years of musical training and musical preference

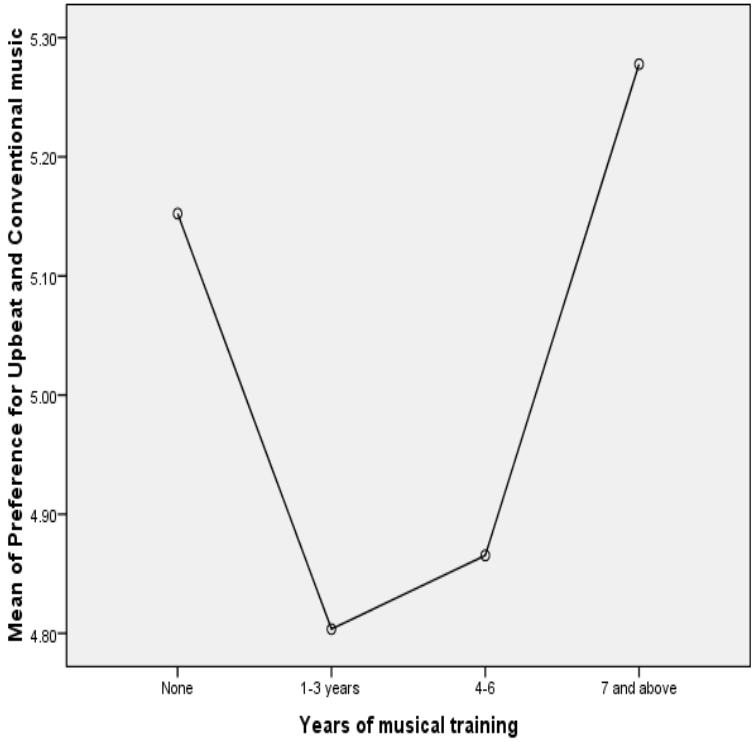
						95% Confidence Interval for Mean			
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Preference for Reflective and Complex music	None	64	4.6055	1.27227	.15903	4.2877	4.9233	1.25	7.00
	1-3 years	14	4.4643	1.50913	.40333	3.5929	5.3356	1.50	7.00
	4-6	13	5.2115	1.00957	.28000	4.6015	5.8216	3.75	6.75
	7 and above	9	5.5278	1.07851	.35950	4.6988	6.3568	3.50	7.00
	Total	100	4.7475	1.28634	.12863	4.4923	5.0027	1.25	7.00
Preference for Intense and Rebellious music	None	64	2.4219	1.44901	.18113	2.0599	2.7838	.00	5.67
	1-3 years	14	1.7619	1.29713	.34667	1.0130	2.5108	.00	4.00
	4-6	13	2.0256	1.34344	.37260	1.2138	2.8375	.00	4.33
	7 and above	9	2.6667	1.23603	.41201	1.7166	3.6168	.67	4.33

	Total	100	2.3000	1.40426	.14043	2.0214	2.5786	.00	5.67
Preference for Upbeat	None	64	5.1523	.95703	.11963	4.9133	5.3914	3.00	7.00
and Conventional music	1-3 years	14	4.8036	1.32715	.35470	4.0373	5.5698	2.50	6.75
	4-6	13	4.8654	.93327	.25884	4.3014	5.4294	2.50	6.00
	7 and above	9	5.2778	1.04167	.34722	4.4771	6.0785	3.25	6.75
	Total	100	5.0775	1.01547	.10155	4.8760	5.2790	2.50	7.00
Preference for Energetic	None	64	3.7917	1.68770	.21096	3.3701	4.2132	.33	7.00
and Rhythmic music	1-3 years	14	3.1667	1.87994	.50244	2.0812	4.2521	.00	5.67
	4-6	13	3.0513	1.68790	.46814	2.0313	4.0713	.33	5.67
	7 and above	9	3.1111	1.40436	.46812	2.0316	4.1906	1.33	5.33
	Total	100	3.5467	1.70002	.17000	3.2093	3.8840	.00	7.00

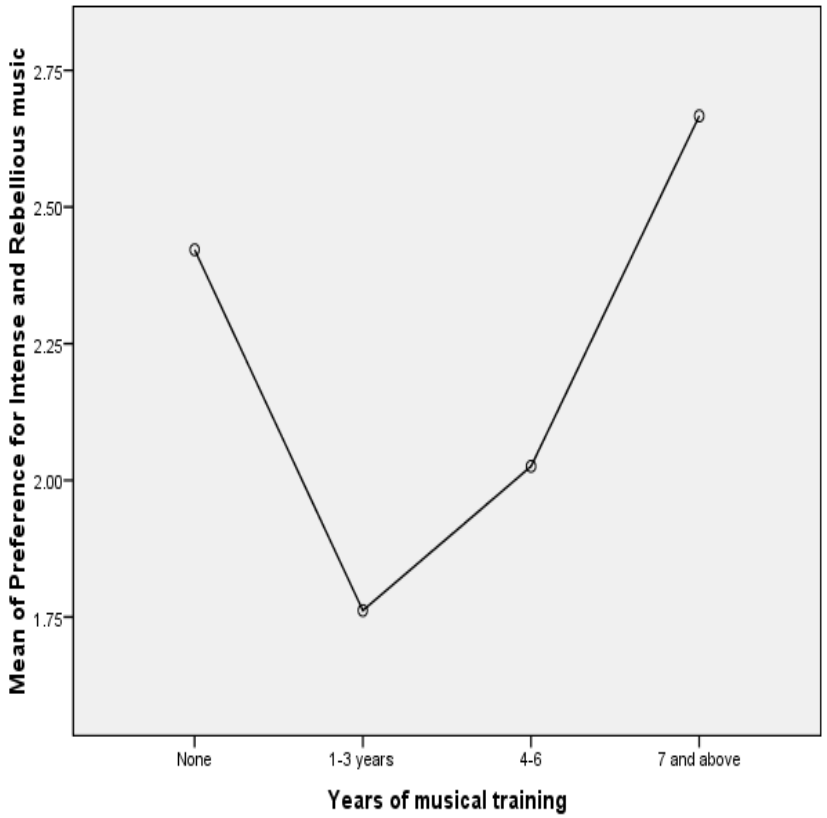
Appendix J

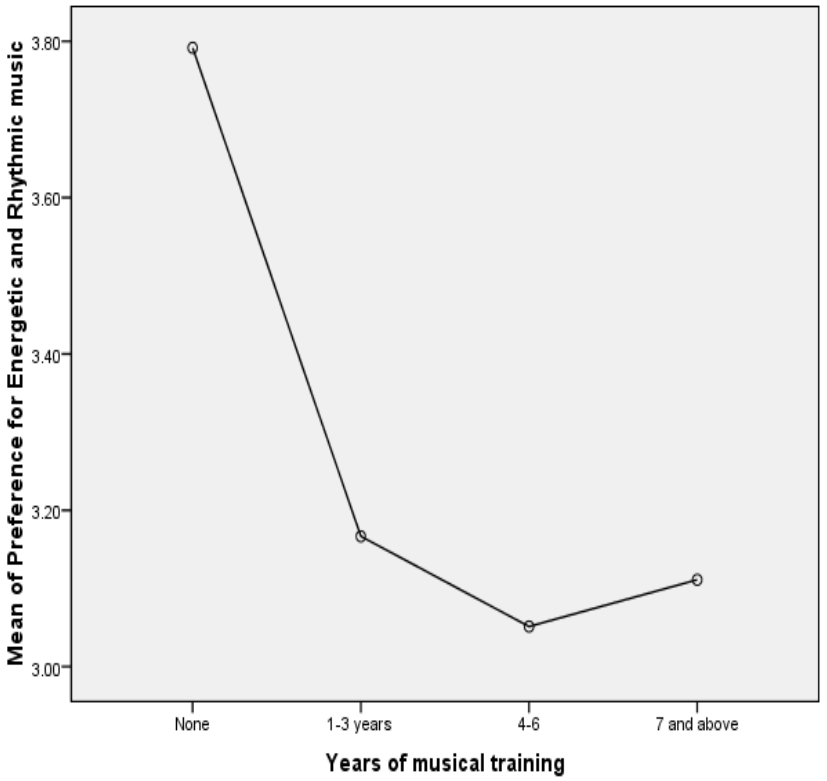
Mean plots showing the years of musical training and the levels of musical preference





Appendix J continued





Appendix K

Descriptive details of age and the overall EI of participants

Age range	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
17-21	27	83.6770	13.94274	2.68328	78.1614	89.1925	60.12	120.71
22-26	53	80.8370	12.47803	1.71399	77.3976	84.2764	55.49	106.98
27-31	12	82.0157	10.17670	2.93776	75.5498	88.4817	70.75	101.04
32 and above	8	80.3230	18.56096	6.56229	64.8057	95.8404	60.02	116.49
Total	100	81.7041	13.05118	1.30512	79.1145	84.2938	55.49	120.71

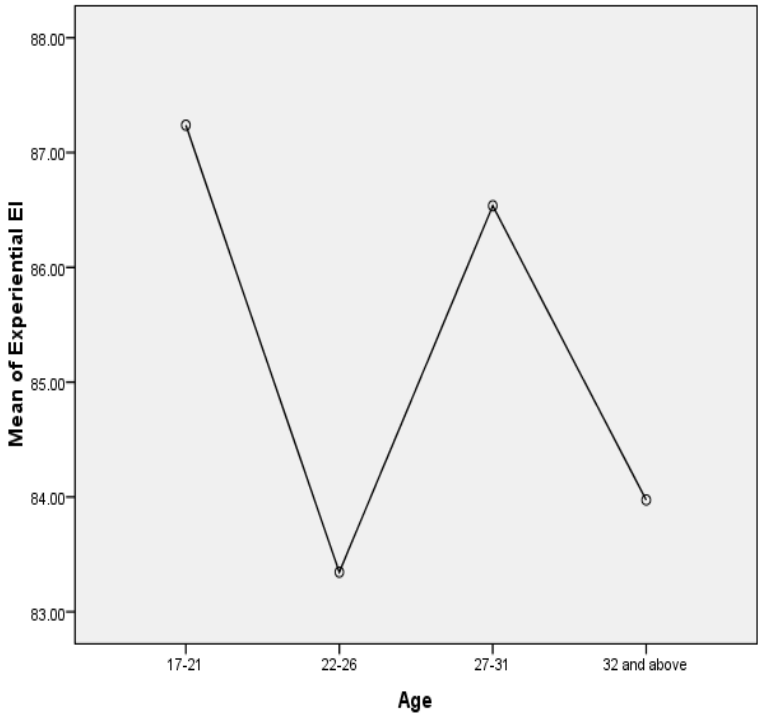
Appendix L

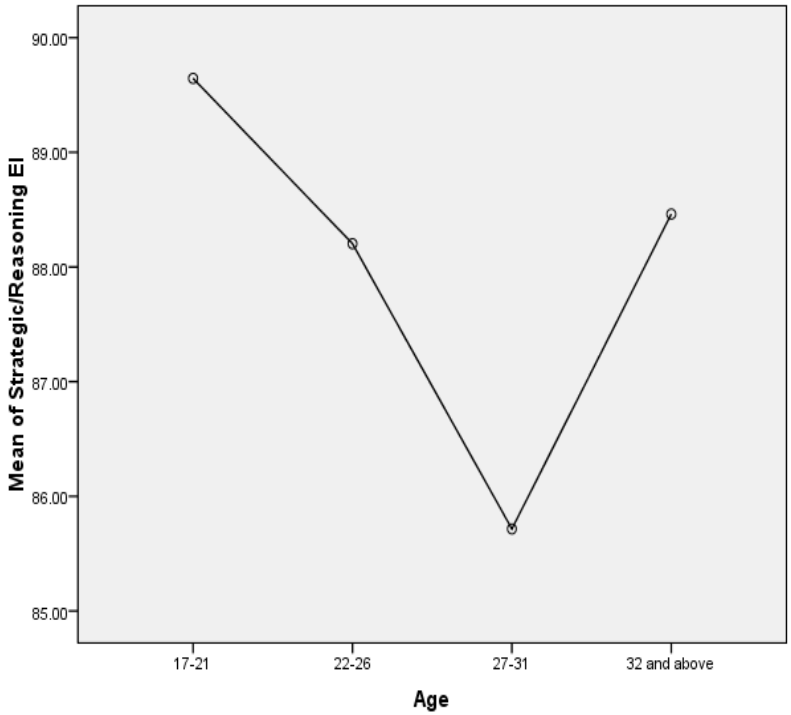
Descriptive details of gender and the overall EI of participants

						95% Confidence Interval for Mean			
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Overall Emotional Intelligence	Male	50	80.0976	13.44000	1.90070	76.2779	83.9172	55.49	116.49
	Female	50	83.3107	12.57943	1.77900	79.7356	86.8857	55.65	120.71
	Total	100	81.7041	13.05118	1.30512	79.1145	84.2938	55.49	120.71
Perception of Emotion	Male	50	84.9538	12.58655	1.78001	81.3767	88.5309	55.55	114.87
	Female	50	86.3964	15.28460	2.16157	82.0525	90.7402	31.31	115.67
	Total	100	85.6751	13.94868	1.39487	82.9074	88.4428	31.31	115.67
Use of Emotion	Male	50	89.7393	16.66781	2.35718	85.0024	94.4763	61.45	162.19
	Female	50	87.8996	16.02997	2.26698	83.3440	92.4553	49.20	125.36
	Total	100	88.8195	16.29545	1.62954	85.5861	92.0529	49.20	162.19
Understanding Emotions	Male	50	89.5747	14.25681	2.01622	85.5230	93.6265	58.26	136.00
	Female	50	91.5235	11.82169	1.67184	88.1638	94.8832	68.95	131.06
	Total	100	90.5491	13.06641	1.30664	87.9565	93.1418	58.26	136.00
Managing Emotions	Male	50	88.3578	16.40998	2.32072	83.6941	93.0215	58.29	149.14
	Female	50	89.6185	17.43597	2.46582	84.6632	94.5737	50.14	145.89
	Total	100	88.9881	16.85693	1.68569	85.6434	92.3329	50.14	149.14

Appendix M

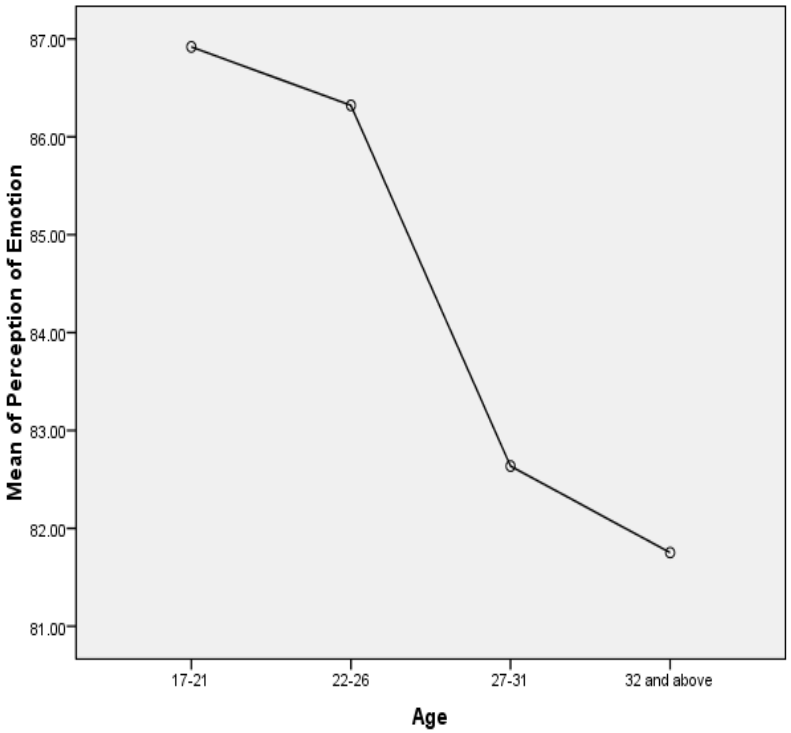
Age differences in the two MSCEIT areas

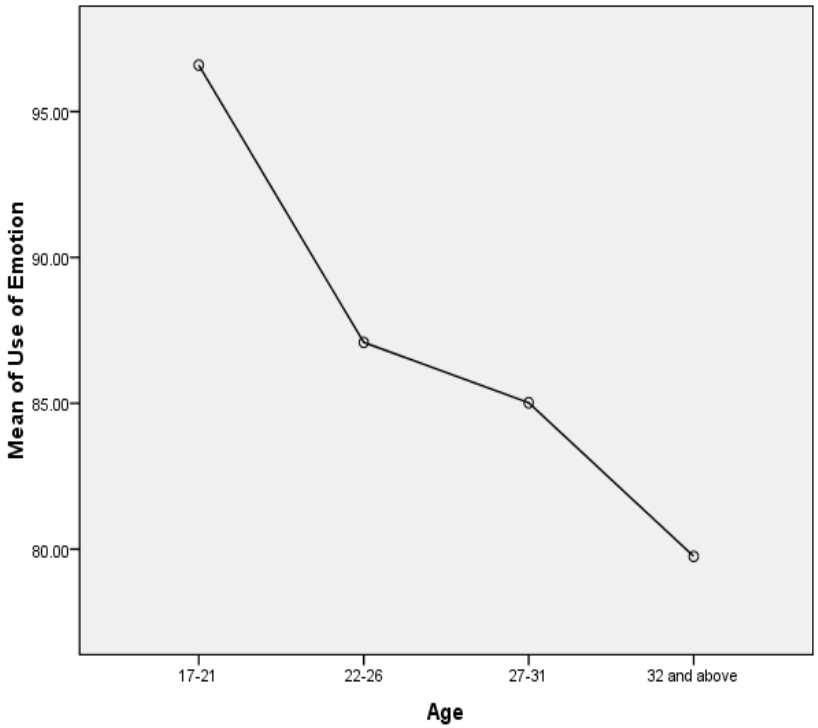




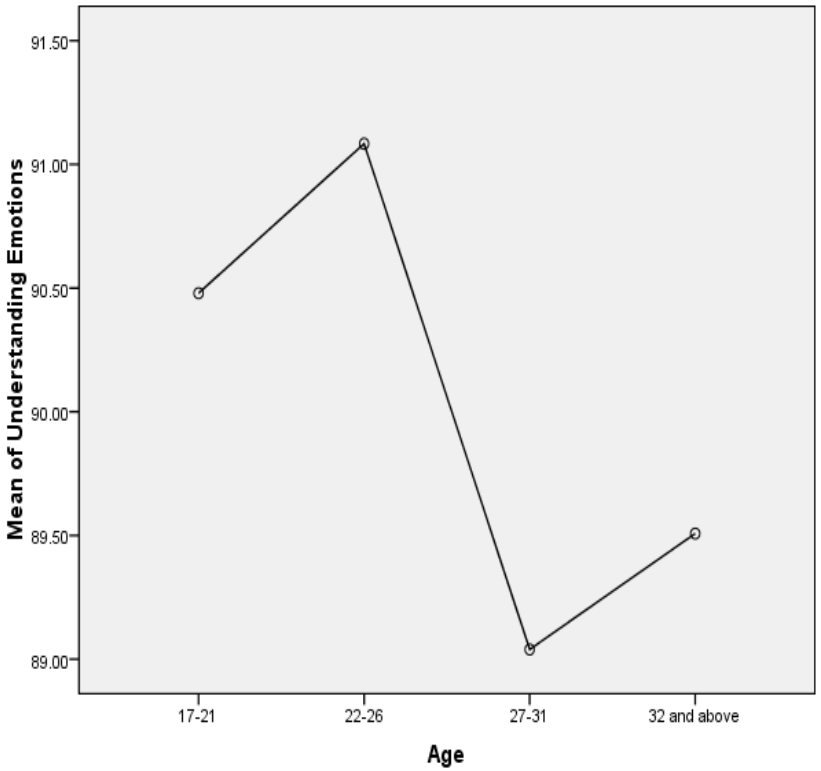
Appendix N

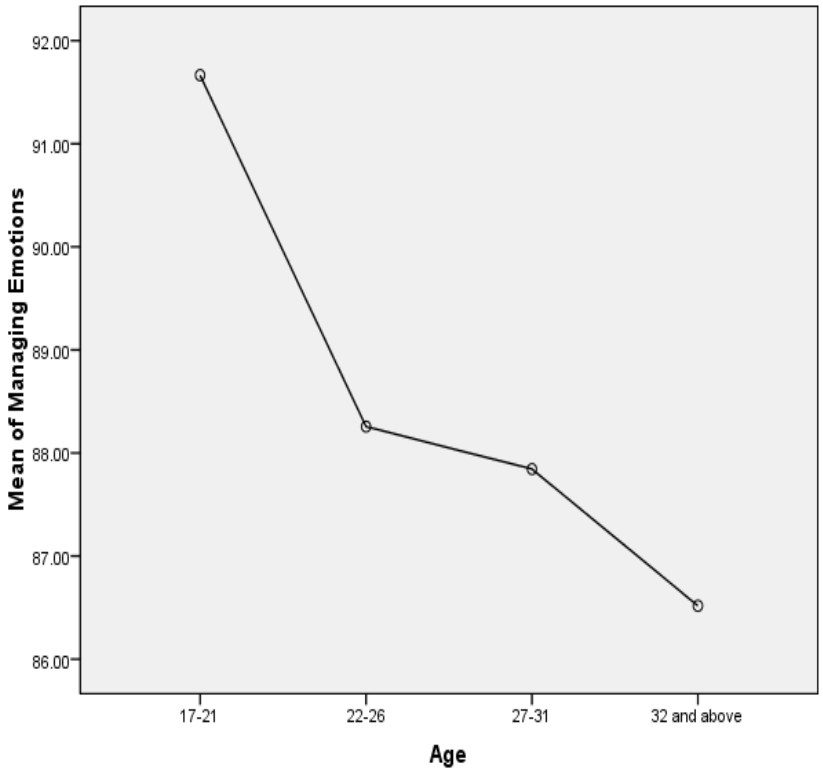
Mean plots of age differences in the EI branches





Appendix N continued





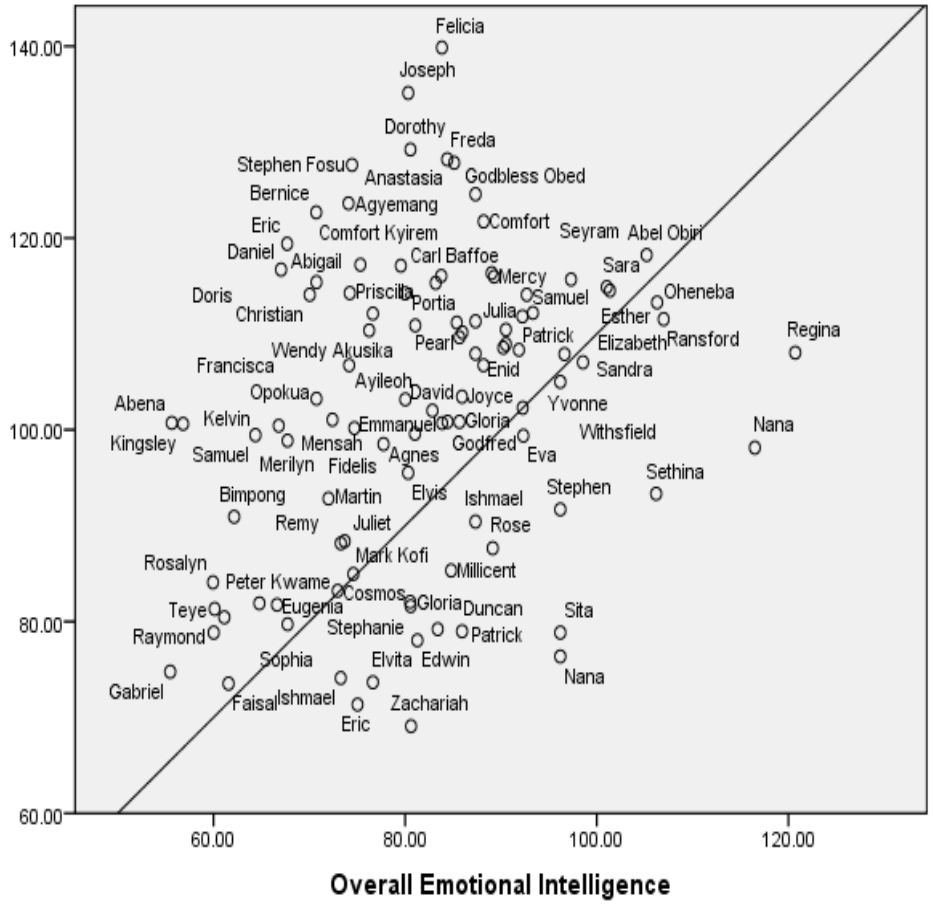
Appendix O

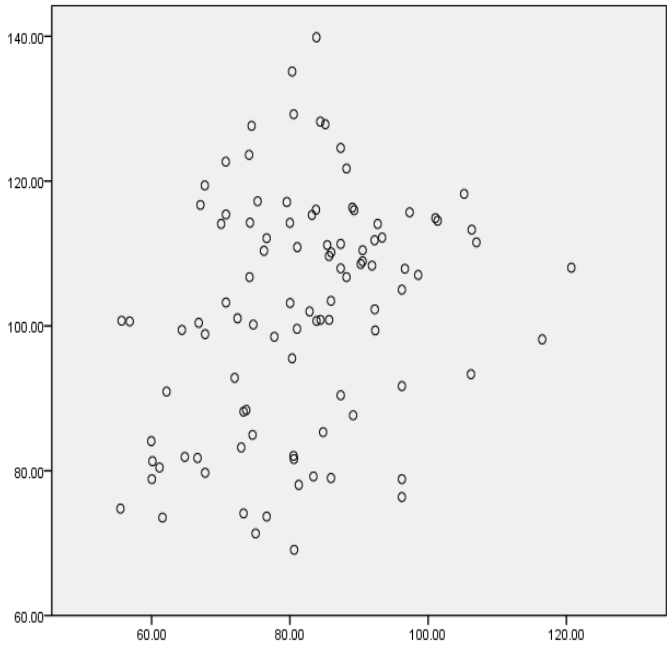
Descriptive details of the differences in the EI of participants who prefer different musical dimensions

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Reflective and Complex	35	82.4919	13.22799	2.23594	77.9479	87.0358	56.83	106.30
Intense and Rebellious	1	85.1207	.	.	.	.	85.12	85.12
Upbeat and Conventional	48	82.4465	13.96025	2.01499	78.3928	86.5001	55.49	120.71
Energetic and Rhythmic	10	79.8370	6.26653	1.98165	75.3542	84.3198	70.72	88.19
RC and UC	5	73.3895	15.16155	6.78045	54.5640	92.2151	55.65	97.32
UC and ER	1	75.3285	.	.	.	.	75.33	75.33
Total	100	81.7041	13.05118	1.30512	79.1145	84.2938	55.49	120.71

Appendix P

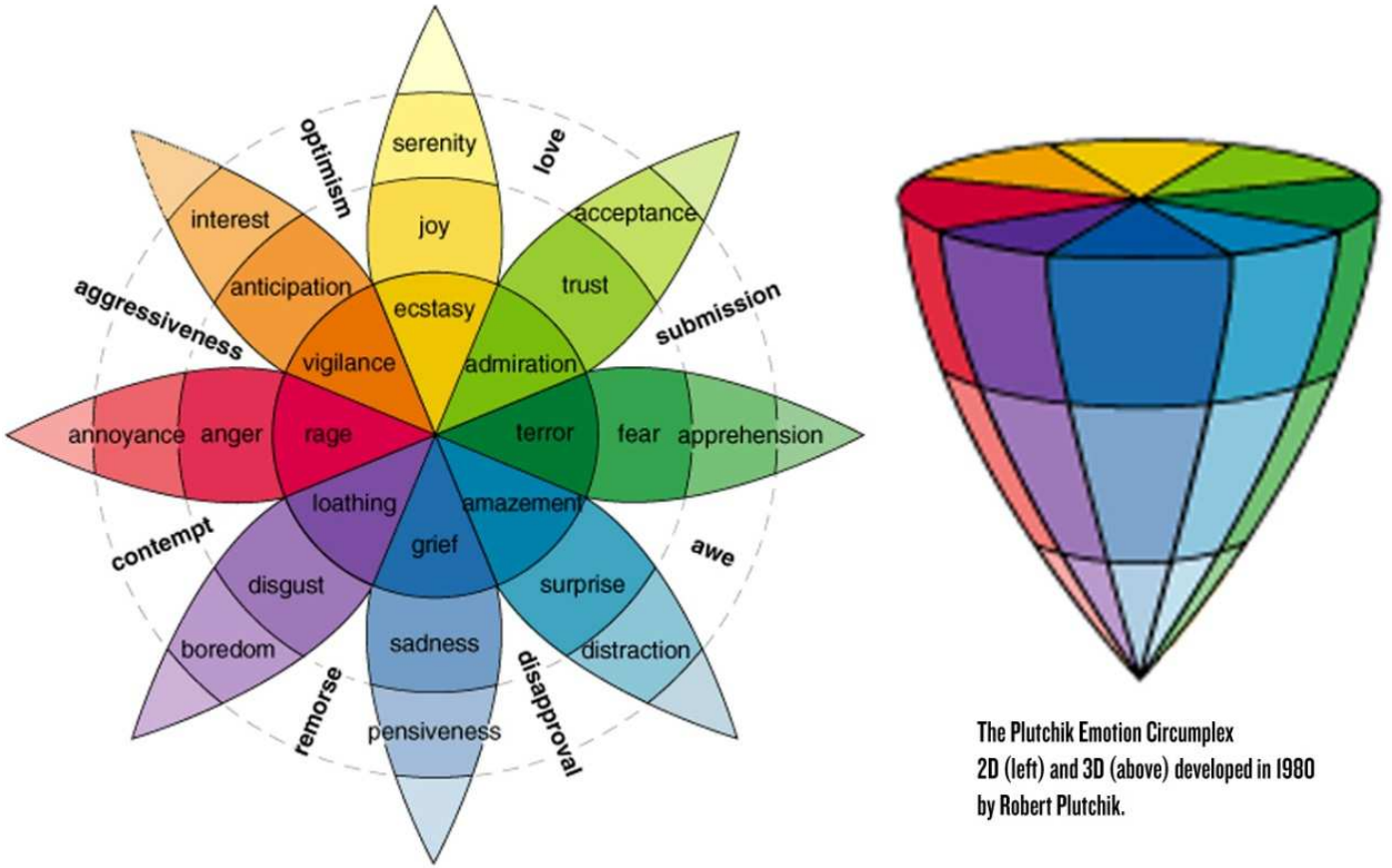
Simple scatter plot of the distribution of the total EI scores





Appendix Q

Plutchik's emotion circumplex



The Plutchik Emotion Circumplex
2D (left) and 3D (above) developed in 1980
by Robert Plutchik.

Appendix R

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.688
Bartlett's Test of Sphericity	Approx. Chi-Square	360.163
	df	91
	Sig.	.000

Appendix S

Rotated Component Matrix showing factor loadings of musical genres

	Component				
	1	2	3	4	5
Preference for Classical music		.788			
Preference for Blues		.524			
Preference for Country music		.680			
Preference for Dance/Electronica	.535				
Preference for Folk/Traditional music					.642
Preference for Rap/Hip-hop/ Hip-life	.835				
Preference for Soul/Funk	.759				
Preference for Religious/Gospel music					.795
Preference for Alternative music			.873		
Preference for Jazz		.754			

Appendix S continued

Preference for Rock	.503		
Preference for Pop/Highlife	.672		
Preference for Heavy Metal music		.834	
Preference for Soundtracks/Theme songs			.900

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.