

An investigation into the relationship between music preference, personality and
psychological wellbeing

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“I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning”

Nicola Sigg

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Abstract

There is a large amount of research demonstrating a correlation between the effect of music on young people, especially in regards to suicidal ideations, but only a handful of studies examining why individuals subscribe to the music genres they do. Of those studies that have touched on this subject none have looked at multiple variables, specifically social identity theory, personality, and psychological wellbeing, and none have looked at these variables in regards to a New Zealand population. Thus, the aim of this research was to examine the relationship between music preference and each of these three variables amongst a New Zealand university population. It was reasoned that if a correlation was found it may benefit psychologists working with youth, specifically providing a greater understanding of these clients and aid in how therapy is conducted. The research was performed using six quantitative surveys: the Depression, Anxiety, and Stress Scale (DASS-21), the Rosenberg Self-Esteem scale (RSES), the Self-Attributes questionnaire (SAQ), the Self-Liking/Self-Competency Scale – Revised (SL/SC-R), the Ten-Item Personality Inventory (TIPI), and a music preference survey, the STOMP-M, which assessed the type of music the participants were inclined to listen to. The participants were selected using convenience sampling; and consisted of 314 first year university students studying at Auckland University of Technology. The results of this study indicated no relationship between music preference, as an aspect of social identity, and self-esteem. A relationship was found between some music preference factors and some personality traits. A correlation was also observed between some music preference factors and some aspects of psychological wellbeing.

Executive Summary

Music surrounds us, whether shopping for groceries, listening to the radio, or being placed on hold during a phone call. It has been said that in addition to being the ‘soundtrack’ of our lives, music fulfils several important functions - relieving boredom, easing tension, manipulating one’s mood, fighting loneliness, evoking memories (Steele & Brown, 1995), dealing with social issues (Thigpen, 1991), as an avenue to express ourselves (Wells & Hakanen, 1991) and aiding in the identification of who we are and where we fit within society (Frith, 1996; Tarrant, North, Hargreaves, 2001). But are these functions related to why we listen to the music we do or, conversely, a consequence of the music we choose to listen to?

A vast amount of research investigates the possible effect music has on young people specifically regarding suicidal ideations (e.g., Burge, Goldblat & Lester, 2002; Martin, Clarke & Pearce, 1993; Scheel & Westefeld, 1999; Schwartz & Fouts, 2003; Stack & Gundlach, 1992), but few look at why we choose the music we do. Research (e.g., Kavanaugh & Anderson, 2008; North & Hargreaves, 1999; Tarrant et al., 2001) has linked “out” music preference with social identity, explaining that we prescribe to the genres we believe are accepted either by our own ‘superior’ social group or the social group we believe is superior and hope to join. However, other researchers (e.g., Zillmann et al., 1995) have found no significant correlation between ones chosen preferred genre and the basic tenets of social identity theory.

Considerable research (e.g., Delsing, Ter Bogt, Engels & Meesus, 2008; Hall, 2005; Kopacz, 2005; North, Desborough & Skarstein, 2005; Zweigenhaft, 2008) indicates that personality affects our musical preference. However, this research is inconclusive, with some researchers finding correlations between certain genres and others finding contradicting relationships. Further research has implied that the genres utility as a coping mechanism dictates preference - whether as an aid in releasing pent up emotions (Rustad, Small, Jobes, Safer & Peterson, 2003), a diversion from stress (White, 1985), or a tool in manipulating one’s mood (North, Tarrant & Hargreaves, 2004).

Thus the aim of this research is to investigate which of the above-mentioned reasons best explains why we listen to music. Though, in no way will the research be exhaustive, it will hopefully add to a better understanding of the topic.

Introduction

Music

Henry Rollins once stated that music exists to put furniture in your mind, ‘because life is so cruel and TV is so mean’ (Arnold, 1993, p. 228).

Early psychological literature mentions little of music beyond stating that its susceptibility has no zoological utility and is a pure incidence of having a hearing organ (James, 1890). Later theorists likewise argued that music is biologically useless - if it vanished the rest of our lives would be unchanged (Pinker, 1997). However, it has been argued that music is biologically imbedded within us; if it has no zoological utility, music, at the very least, has cultural utility (Sacks, 2007). Listening to music involves many parts of the brain (more so than vision), including the cerebellum, the cerebral cortex and basal ganglia (Sacks, 2007). Sacks (2007) claims that, physiologically, humans synchronize with the beats and keep time with music. Similarly it has been found that musical ‘brainworms’, or tone sequences/tunes that are ‘catchy’ and get stuck in one’s head, are visually detectable on a magnetic resonance image scan (Sacks, 2007).

But what is music? A lay answer may be that music is singers and/or musicians performing a sound. However, the lay definition is not a definitive answer as some sounds we enjoy would not classify as formal music, for example some ‘singers’ scream, and some sounds we enjoy would not satisfy as formal music. An expert answer would likely incorporate the mechanics of music, that is, melody, notes, rhythm, tempo, instruments, chords, harmony, and bass (Dorrell, 2005).

In addition to music being dividable into mechanisms, it is also separated into different categories or genres that distinguish one style from another. These genres can be divided by the mechanisms involved and how they are performed (see Table 1). Due to each genre being performed in a slightly different way, there is also a social or cultural aspect that aided in their creation as a separate genre.

Table 1: Different genres and the mechanisms and performance styles that define them.

Hip-Hop	A rhythmic vocal style commonly called ‘emceeing’ backed by music made by synthesizers, drum machines, a DJ or live band.
Rap	Chanted (originally improvised) rhyming words commonly with a social or political message to a heavily rhythmic musical accompaniment.
Jazz	A strong, prominent meter, improvisation, distinctive tones and performance techniques with dotted or syncopated rhythmic patterns commonly containing blue notes, polyrhythms and swung notes. Can be purely instrumental or have accompanying vocals.
Blues	Uses the blues chord progression and the blue notes. Several chord progressions exist but a twelve-bar blues chord progression is most frequent. Blue notes are performed at a lower pitch than the major scale to increase expressiveness. Can be either instrumental or with vocals.
Rhythm & Blues (R&B)	A Jazz and Blues influenced style, with typically a four-beat measure and backbeat (beats number two and four accented) produced by a drum machine supporting a smooth vocal style (often using melisma). The use of less gritty hip-hop/Rap beats are common as is the occasional guitar riff.
Dance	Music created by computers, synthesizers, sound cards, samplers, and drum machines interacting with each other and achieve the full synchronization of sounds with a 4/4 beat typically ranging from 120 beats per minute (bpm) up to 200 bpm. Can be mixed with other genres, and some sub genres have vocals.
Drum and Bass	Characterized by fast breakbeats of typically between 165–185 bpm, with heavy sub-bass lines.
Rock	Typically has a strong and heavy backbeat laid down by a rhythm section of a lead and bass guitar (usually heavily amplified) and drums accompanying an uncomplicated melody, harmony, a 4/4 beat and adolescent sympathetic lyrics.
Reggae	Based on a rhythmic style with accents on the off-beat or second and fourth beat on each bar. Commonly has a highly tuned snare drum to give a timbale-like sound, a two bar riff and lyrics that deal with a plethora of subjects.
Classical	Contains ensembles of instruments (e.g., violin, cello, flute, clarinet, bells, etc) mostly invented before the mid-19 th century with a complex arrangements. Commonly performed in concert halls as symphonies.
Disco	An eighth note or sixteenth note hi-hat pattern with an open hi-hat on the off-beat with soaring, often reverberated vocals over a steady ‘four-on-the-floor’ beat with a prominent, syncopated electric bass line.
Punk	Fast, hard-edged music with stripped down instrumentation and anti-establishment lyrics. Punk songs tend to be shorter than other genres with faster drums and a traditional rock and roll verse-chorus form and 4/4 time signature. The vocals tend to be characterized by a lack of variety, shifts in pitch, volume and lyrics often shouted.
Ska	A form that combines elements of Caribbean mento and calypso with Jazz and R&B. It is characterized a walking bass line and rhythms on the offbeat.
(Heavy) Metal	A thick, loud sound, characterized by amplified distortion, guitar solos, and emphatic beats. The main groove is characterized by short, two-note or three-note rhythmic figures—generally made up of eighth or sixteenth notes. These rhythmic figures are usually performed with a staccato attack created by using a palm-muted technique on the rhythm guitar. Lyrics and style are generally angry and commonly appeal to males.
Grunge	Characterized by heavily distorted guitars, a stripped down aesthetic, slower tempos, dissonant harmonies and complex instrumentals. Lyrics are apathetic or angst-filled and commonly deal with societal issues and alienation.
Country	Has a verse-chorus form and 4/4 time signature commonly accompanied by guitar, violin, or banjo. Lyrics vary but are commonly melancholy and dealing with common issues amongst those living rurally.

Table 1 continued

Oldies	Music that was popular during the 1950's – 1960's. Includes "Rock 'n' Roll".
Pop	Has a noticeable rhythmic element, a mainstream style, traditional structure, melodies and hooks. The chorus usually contrasts melodically, rhythmically and harmonically with the verse. Most songs are under five minutes long and have an adolescent appeal. Some argue that this genre is a diluted version of other genres (e.g., Rock, Rap, R&B)

Music Preference

Within contemporary society music plays a central role in the lives of young and old (Coley, 2008; North & Hargreaves, 2003). It is believed that music fulfils several functions (Baker & Bor, 2008), and is used to relieve boredom, ease tension, manipulate listener's moods, and fight loneliness (Wells & Hakanen, 1991). It is speculated that music is used to organize one's internal and social worlds and may direct activities such as physical exercise or celebrations (DeNora, 2000). According to Abeles (1980) music preference is the liking of certain music at a given point in time. However, the research around music preference is either outdated or does not focus on how these preferences reflect an individual's psychological wellbeing and vice versa.

The value one places on the music in everyday life will depend on the uses they make of it and the degree of engagement with it, which is dependent on the context in which the music is heard (North, Hargreaves & Hargreaves, 2004). North et al. (2004) conducted a study on music, refining investigation to the following areas:

- ◆ who individuals listen to music with
- ◆ what they listen to
- ◆ their emotional responses to this music
- ◆ when they listen to music
- ◆ where music is listened to, and
- ◆ why they listen to music.

In this study they found that British individuals of various ethnicities and ages most frequently listen to music while on their own and that Pop music was the most common genre listened to. The degree the participant liked the music was dependent on whom they were with, where they were, and whether they had chosen to hear the music. This study also found that music was commonly experienced during an activity rather than an individual deliberately listening to music. However, when one deliberately chose to listen to music, different genres of music were chosen for a variety of reasons (North et al., 2004). Although this study touched on music genres, it failed to ascertain each individual's actual preferred genre.

Studies have also shown that both males and females associate songs with current and past romantic ventures. Songs can evoke a host of memories – both sentimental and tragic (e.g., “That’s David and my song! I can almost smell his cologne when it comes on” Steele & Brown, 1995, p. 571). Thus music plays an integral role in the link between biography and nostalgia (Laukka, 2007; Wells & Hakanen, 1991). A music collection will likely evoke special moments, relationships and events, linked to each album or track (Dittmar, 2004).

Music frequently coincides with young adults (aged 20 to 35 years old) concerns, particularly Rock music, as it is believed its sound and words mirror the experiences of this population (Wells & Hakanen, 1991). Lyrics of Rap and Heavy Metal music also frequently include content that deals with social issues affecting youth, such as racism and abuse (Thigpen, 1991), leading the individuals to identify personally with a song (Livingston & Evans, 1962) or project themselves into a song (Willis, 1990). Additionally, Heavy Metal fans reported that the lyrics of a song influenced how the music was experienced (Wass, Miller & Stevenson, 1989). That study acknowledged, Robinson and Hirsch (1969) found that only one third of high school students could write an accurate description of the meaning of a song’s lyrics and it appeared the students were more interested in the sound. This correlates with Lull’s (1982) findings that university students responded to the beat and the overall sound more than the lyrics of songs. This notion was further supported by Arnett (1992) and Rosenbaum and Prinsky (1987) who both found that most individuals focused on the music with only a minority’s focus being the lyrics. This may explain the popularity of music genres such as Drum and Bass (see Table 1), which focus solely on the sound of the music and frequently lack lyrics, but still convey both meaning and emotion.

One of the main approaches used to investigate media, and therefore music, preference is the *uses and gratification* model (Hall, 2005). This model assumes that individuals have a specific set of psychological and social needs (in areas such as personal identity, relationships and need for diversion) as well as a specific set of expectations as to how the mass media may gratify these needs, and that these contribute to an individual’s media preferences (Coley, 2008; Rubin, 1993). Using this approach two areas of music preference have been examined: the use of music as a way to control mood (e.g., Knobloch & Zillman, 2002), and as a way of signalling social identity (Tarrant et al.,

2001). It is believed that music is a key to an individual's identity as it offers a sense of both ones self and others (Frith, 1996; Steele & Brown, 1995). Music aids in the construction of identity through the experiences it offers the body, the sociability and the time. These experiences enable individuals to place themselves in imaginative cultural narratives. Additionally, individuals are believed to form an emotional alliance with the artists as well as other fans of the music (Frith, 1996).

The majority of research around music preference has focused on the possible association between music and suicide. Several studies (e.g., Martin et al., 1993; Scheel & Westefeld, 1999) found those who listened to Heavy Metal music were at greater risk of committing suicide and having suicidal ideations, while others found that a preference for Country and Pop music was associated with suicidal ideations (e.g., Burge, et al., 2002; Schwartz & Fouts, 2003; Stack & Gundlach, 1992). Many studies (e.g., Stack, 2000, 2002; Stack & Gundlach, 1992; Stack, Gundlach & Reeves, 1994) allude to the notion that it is not the actual music preference but rather the subculture¹ the music creates that is associated with suicidal thoughts. Gaines (1994) discusses the regularity in which subcultures within an environment support underground music scenes. It was found that although these 'scenes' may fit with a specific genre, the music within a 'scene' might be particularly dark due to the social environment; therefore it would be difficult to conclusively attribute these fans' behaviour to the genre as a whole. The question then becomes what constitutes a subculture? Weinstein (1991) reports that the public perceive Heavy Metal fans as working-class members of motorcycle gangs (due to the frequent use of the Harley Davidson logo on clothing), though in reality the majority of Heavy Metal fans are indeed working class (Weinstein, 1991), they can be found in any social class, and few own motorcycles. One wonders whether the above denotes a true subculture, or just description of a group of stereotypical fans. Additionally, Sardiello (1998) maintains that music taste alone does not solely determine a subculture; therefore, arguably, another aspect could denote the subculture that contributes to the psychological wellbeing of members.

¹ According to Murdock (1974) a subculture is "the meaning systems and modes of expression developed by groups in particular parts of the social structure in the course of their collective attempts to come to terms with the contradictions of their shared social situations. They therefore provide a pool of available symbolic resources which particular individuals or groups can draw on in their attempt to make sense of their own specific situation and construct a viable identity" (pg. 213).

An anecdotal example of how society may assert negative stereotypes onto a subculture can be found in the movie *Kids*, where the 'black' Hip-Hop culture is held responsible for the central character's self-destructive journey (Giroux, 1998). However, musicians could actually be conforming to societies values, for example, despite their 'grungy' appearance, male rock stars of the 1990's actually reinforced dominant values within society as they were wealthy with beautiful wives/girlfriends (Best & Kellner, 1998), subconsciously encouraging young people to also conform to these values. Additionally, it is these role models that may actually benefit young people as they 'believe' in them, unlike other potential role models, such as president-at-the-time Bill Clinton, who declared the 1990s youth as "a generation without a future" (Best & Kellner, 1998, p. 88).

Additional research (e.g., Stack & Gundlach, 1992) found that depressing themes in music could also contribute to suicide rate. However, the correlational nature of this research does not establish causality but rather suggests that listening to certain genres may reflect, as opposed to create, suicidal ideations (North & Hargreaves, 2005). The reverse could also be seen to occur, an example of this being 1994 suicide of Kurt Cobain. Prior to his death Cobain was seen as a spokesperson for a generation without hope and no illusions of a brighter future (Epstein, 1998). In line with the 'Werther Effect', it was predicted that many in this generation would also take their own lives. However, in United States, fewer suicides in the weeks following Cobain's suicide were reported than during the same months of the previous year (Jobes, Berman, O'Carroll, Eastgard & Knickermeier, 1996). Furthermore, in Australia, the suicide rate 30 days following Cobain's suicide was lower in 1994 than the previous two years (Martin & Koo, 1997). Instead of increasing suicide rates, the death of Cobain perhaps caused fans to reflect on, and value, their lives more, with awareness of the great loss and pain taking one's own life can wreak.

North and Hargreaves (2005) argue that it is the 'label' given to certain genres that lead to the stereotypical behaviour. Thus, if a genre is labelled as 'dark' with suicidal ideations or as encouraging violence towards others, then those who buy that music will then engage in this type of behaviour, possibly linking with the notion that music helps defines ones identity. The perceived value represented by the music is transferred to the listener (North et al., 2005). An alternative perspective is that those with deviant lifestyles are attracted to music that reflects deviant values. For example, those who

hold anti – authoritarian views are attracted to music and genres that frequently show disrespect to authority and authority figures (North et al., 2005). Possibly an example of social learning theory, as the fans of the music model the behaviour of their music idols or the behaviour that fans imagine the idols would display (North et al., 2005). North and Hargreave's (2005) investigated this idea and found evidence that supported their hypothesis, whereby when participants were informed a song helped someone through an emotional problem, the song was seen as life affirming but when the same song was said to have been linked with a suicide the participants found the song to be suicide-inducing. This seems to question the notion that certain genres are themselves linked with problem behaviour, instead suggesting it is the prejudice society places on these genres that causes the problematic behaviour. A concept supported by Rosenbaum and Prinsky (1991) who found that when two psychiatric facilities were contacted about a hypothetical youth with no emotional or behavioural problem but a preference for Heavy Metal music, 'Punk' fashion and a room that was messy and adorned with 'awful looking' posters, 83% recommended inpatient admission. Note, however, this study was conducted in the United States of America which has a 'user pays' approach to health care (Anderson, Reinhardt, Hussey & Petrosyan, 2003), so it is unknown if psychiatric facilities in other countries would have the same reaction.

Sacks (2009) conducted a self-participatory study in which he related subjective emotions to activity of the brain while listening to either a preferred artist (Bach) or another similar yet not preferred artist (Beethoven). When preferred music was heard the brain was more stimulated, particularly the amygdala – which plays a primary role in the processing and memory of emotional reactions and events (Banich, 2004), became more activated. Interestingly, even when the participant was confused as to which piece of music was created by which composer, the brain activity still increased when a Bach piece was played. The researcher concluded this may indicate that we are biologically predisposed to our music preferences. An alternative conclusion could be that an aspect within Bach's music stimulates the brain, thus the reaction observed was not related to music preference (PBS, 2009).

Research has been performed on music generally in relation to cognitive psychology (Krumhansl, 2002), biological psychology (Todd, 1999), clinical psychology (Diamond, 2002), and neuroscience (Rauschecker, 2001) and as reviewed above, suicide. However, little research has been conducted on why we listen, and have a preference for, specific

musical genres. Three theories as to why we prefer some genres of music but not others will now be introduced.

Social Identity Theory

Material possessions are valued because of their personal meaning to the owner (Appadurai, 1986) especially when these possessions can be used to display personal identity (Tian, Bearden & Hunter, 2001). For young people (aged 15 to 29 years old) music is a tool for coping in a world where building and maintaining an identity is difficult. By subscribing to a particular music genre, one is able to claim an identity, express a view on who they are or might be, and what the world is to them (Laukka, 2007; White, 1985). Additionally, music may be worn as a 'badge' that suggests to others what an individual's attitudes, values and opinions might be (North & Hargreaves, 1999). This coincides with social identity theory, which argues that part of our self-concept and identity arises from our perceived membership within a given group we evaluate positively (Tajfel & Turner, 1986). Noel, Wann, and Branscombe (1995) found that in order to obtain a positive social identity, and high self-esteem, individuals must have popularity amongst their peers. This is supported by Leary and Baumeister (2000) who state that self-esteem is influenced by the degree to which an individual feels socially accepted.

Music appears to be a key to identity as it offers, so powerfully, a sense of both ourselves and of others. Through the physical and social experiences music offers, it aids in constructing our sense of identity (Frith, 1996). Furthermore, if we subscribe to the belief that at its root self-esteem is a person's appraisal of how valuable, viable and sought after they are within a group, then self-esteem is essentially an internal monitor of social belongingness (Leary & Baumeister, 2000), and thus is linked with social identity.

Barber, Eccles and Stone (2001) conducted research in the USA, which examined whether participation in different high school activities, as well as social identity, could reflect different traits amongst individuals. In their study, participants were asked to self-select the group (*Princess, Jock, Brain, Criminal, or Basket Case*) they belonged to based on the movie "The Breakfast Club". Comparisons were made both within groups and between groups. The study concluded that those who identified themselves as *Jocks* or *Brains* had the highest level of self-esteem. Those who engaged in pro-social

activity (e.g., church or volunteering in the community) also exhibited high levels of self-esteem. Those who were involved with performing arts (e.g., band, drama, and dance), without respect to groups, had a higher rate of suicide attempts, but their levels of self-esteem were ambiguous. The results are interesting, as a possible common expectation would be for the *Brains* group to show a lower level of self-esteem based on the fact they are often less popular amongst their peers (Bishop et al. 2004). This research is limited however, as it failed to explore what aspects about each activity could explain the results. For example, were those involved in performing arts more likely to have attempted suicide because they were seen as being in the out-group, thus having lower self-esteem (Tarrant et al., 2001), or because they were ostracised by their peers, or because they viewed themselves as tortured artists?

A study on the inter-group processes of male adolescents, focusing on in-group and out-group music preferences and how this affects others' perceptions of an individual, was undertaken in the United Kingdom (UK). Individuals whose music taste differed from the in-group were viewed as 'weird' or 'boring', and those in the out-group tended to have lower levels of self-esteem (Tarrant et al., 2001). While this study included some investigation of self-esteem, it failed to identify whether the low self-esteem resulted from the music preference or from being ostracized by their peers. That said, research by Kavanaugh and Anderson (2008) supports these findings as they found most individuals believed their music taste was better than others and were condescending to those with dissimilar taste, possibly affecting their self-esteem. However, Zillmann et al. (1995) reported no significant results supporting the possibility that social identity influences self-esteem, as within this study it was found that both the in-group and out-group had similar levels of self-esteem. Additionally, Zillmann et al. (1995) found no substantial outcomes of music preference on social identity.

Another UK study concluded that people use music as a way to express their attitudes, values, and self-views (North & Hargreaves, 1999). This research found that an individual's music preference was associated with how well that individual felt their self-view correlated with the "stereotypical" fan of that genre of music. Music preference was seen to moderate the individual's self-esteem, that is, those with higher self-esteem related more to the stereotypical fan than those with lower self-esteem (North & Hargreaves, 1999), suggesting that it is not the music genre *per se* that affects the individual's self-esteem but rather the group identity. This research also found that

an individual with an unstable self-concept finds decision-making more difficult (North & Hargreaves, 1999). Campbell (1990) argues that individuals with low self-esteem have less stable self-concepts, thus, it is possible that those who fail to prescribe (or prefer) a specific genre of music are likely to have lower self-esteem.

Personality

The fact that people differ from one another is a given. How and why they differ is less apparent, and thus is the focus of personality, or individual differences research. No universally accepted definition of personality exists, for the purposes of this research the working definition that will be used is an inner dynamic organization of psychophysical systems that form the individual's characteristic patterns of thoughts, feelings and behaviour (Allport, 1961). From a lay perspective, personality is who we are - how we talk, interact, react, or essentially, our 'character'.

The psychology of personality began in the 19th century with the development of psychiatry in France and Germany, lead by Jean-Martin Charcot and Sigmund Freud (Carver & Scheier, 2004). During this period, personality theory and assessment focused on the origins and diagnosis of dysfunctional behaviour (McAdams, 1997). After the Second World War, however, humanistic psychology became popular with the emergence of Rogers, Allport and Maslow, leading to an increased focus on maturity (Carver & Scheier, 2004; Waters & Cheek, 2005).

The study of personality includes multiple approaches to determine who we are and why we are this way. At least five different theoretical approaches relate to the 'why'. Evolutionary psychology emphasizes universals of human behaviour, offering alternative adaptive strategies to explain individual variability (Buss, 1991). Behaviour genetics analyses the variation in behaviour in terms of epigenetics: the complex interplay between environmental and genetic influences (Plomin & Caspi, 1999). Biological theory emphasizes the continuity of behaviour across species to determine the genetic underpinnings of temperament and complex behaviour (Eysenck, 2006). Social cognitive theory highlights the importance of socialization and the effect of cognitive processes to create individual patterns of behaviour (Bandura, 1999). Psychoanalytic theories focus on the various psychosexual stages an individual progresses through, that affect behaviour (Berk, 2001).

One method of personality study is through descriptive taxonomies of individual differences which address the 'who' we are (Ornstein, 1993). The most generally accepted model of personality structure is the Big Five theory. The Big Five consists of five dimensions of personality: openness to new experience (openness), conscientiousness, extraversion, agreeableness and neurotism (in later versions of the Big Five neurotism is replaced with emotional stability). These dimensions do not adhere to a particular theoretical modality but instead were derived from statistical analysis of language terms (i.e., adjectives) people use to describe themselves and others. These five factors are broad, encompassing a range of more specific traits (John & Srivastava, 1999).

Personality assessment is essential when researching any form of media (Wober, 1986) as personality characteristics are influential in perceptions of a given media (Zuckerman, 1991), and will determine the gratification individuals receive from said media (Palmgreen, 1984). Several studies have suggested a link between personality and music preference (Klimas-Kuchtowa, 2000; North et al., 2005), mostly proposing that music preference is a manifestation of explicit personality traits, such as sensation seeking proclivity and extraversion. Sensation seeking was believed to be linked to a preference for Rock, Heavy Metal or Punk music (Little & Zuckerman, 1986) whereas extraversion was linked to Rap and Dance music (McCown, Keiser, Mulhearn, & Williamson, 1997). Cattell and Saunders (1954) believe that music preference provides a portal into the unconscious reflection of specific personality traits, for example, warmth and conservatism. Some support for this notion was found with Schwartz & Fouts (2003) who established that people prefer to listen to music that reflects a specific personality characteristic. However, as many of these studies are based on United States populations, generalization to other cultures and countries cannot be assumed.

One USA study investigating how music preference reflects a male's attitudes towards women, aggression, and distrust, found that music evokes emotive and affective responses and is linked with personality dispositions and attitudes (Rubin, West, & Mitchell, 2001). Many studies have looked at music preferences in relation to different personality traits. A British study showed that a preference for Rap, R & B, and Hip-Hop was positively associated with extraversion, whereas a preference for Rock had a negative correlation on this dimension. However, the correlations have to be treated with caution due to the methodological shortcomings identified by the authors (North et

al., 2005). Delsing et al., (2008) also found preference for Hip-Hop, Rap, R&B, Pop and Dance correlated positively with extraversion. Additionally, Zweigenhaft (2008) found that those with a preference for Rap, Hip-Hop and Dance, but not Pop, music scored highly on extraversion. However, Baker and Bor (2008) found that Pop music correlated higher with extraversion than Heavy Metal did. Extraversion has been further associated with women's, but not men's, preference for Jazz and Classical music (Hall, 2005), though Cattell and Saunders' (1954) research indicated that extraversion was associated with music containing strong rhythms, fast tempo, discordant harmonies and joyful yet agitated moods (e.g., Rap, Hip-Hop, Dance, Punk, Ska, Pop).

McCown et al. (1997) found that extraversion predicted a preference for Rock or bass-based music. Similarly, in the Rawlings and Ciancarelli (1997) study, extraversion was indicated as an important dimension underlying aspects of individual music preference differences. A study by Kopacz (2005) demonstrated that both extraversion and introversion had a significant effect on music preference, though, Pearson & Dollinger (2004) found extraverts prefer more types of music than introverts, while Daoussis and McKelvie (1986) found extraverts enjoy Rock music more than introverts, with the exception of light Rock.

Only limited studies have linked music preference with the trait of neuroticism. Neuroticism is a personality characteristic that denotes a person with an enduring tendency to experience negative emotions. Commonly, those who score high on neuroticism are more likely to respond negatively to stressors, and more quickly dismiss a situation as hopelessly difficult (Nevid & Rathus, 2007). One study on neuroticism and music preference found that those scoring high on this trait had a high preference for 'downbeat' music and a low preference for 'club' (e.g., Rap, R&B, and Dance) music (Weaver, 2000), whereas another study found that those high on this trait will prefer Pop music (Dollinger, 1993). The results are interesting as much Pop music contains elements that are similar to 'club' music. Yet another study found that neuroticism was not associated with music preference at all (Lester & Whipple, 1996). The few studies on conscientiousness and music preference have linked high levels of this trait with a preference for Jazz, Classical (Delsing et al., 2008), Rap, Hip-Hop and Dance (Zweigenhaft, 2008) and low levels with a preference for Heavy Metal, Punk and Rock (Delsing et al., 2008).

The personality trait openness and its possible relationship with music preference has also been researched. A preference for Heavy Metal, Punk, Rock, Jazz, Classical, Blues, Rap, Reggae, Hip-Hop and Dance have all been shown to correlate highly with this trait (Delsing et al., 2008; Dollinger, 1993; Rawlings & Ciancarelli, 1997; Zweigenhaft, 2008). Furthermore (though perhaps not surprisingly, due to the culture), those with Grateful Dead experience² are significantly more likely than others to be high on the openness personality trait (McGown & Dulaney, 1999). Additionally, research has found that a preference for Jazz, Classical, Hip-Hop, Rap, R&B, Pop and Dance scored high on the agreeableness trait (Delsing et al., 2008; Zweigenhaft, 2008). Those with Grateful Dead experience were also more likely than others to score high on the agreeableness trait (McGown & Dulaney, 1999). In addition Delsing et al. (2008) linked a low score on emotional stability with a preference for Jazz and Classical music.

Relevant to the current study, is research undertaken by Rentfrow and Gosling (2003) investigating beliefs about music, underlying music preference, and the links between music preference and personality. Self-esteem was considered an aspect of personality and was examined under this construct using the Rosenberg Self Esteem Scale (RSES). In addition to using the RSES, Rentfrow and Gosling (2003) measured self-view, reporting significant correlations between self-view and music preference as determined by the STOMP. In the Rentfrow and Gosling study, self-view was assessed by a modified version of Pelham and Swann's (1989) Self-Attributes Questionnaire. Individuals with a preference for Classical, Jazz, Blues, or Folk music were found to have a positive correlation with the openness trait, perceived themselves as intelligent, politically liberal with verbal abilities but were not high on social dominance orientation or athleticism. Those who preferred Alternative, Rock or Heavy Metal music demonstrated positive relationships with the openness trait, viewing themselves as athletic, intelligent, with high verbal abilities, but interestingly, did not appear to display any signs of neuroticism or disagreeableness. A preference for Country, Pop, Religious and Soundtracks correlated positively with extraversion, agreeableness, conscientiousness, and conservatism. A preference for Hip-Hop, Rap, Soul, Funk, Electronic and Dance music were found to have a positive relationship with extraversion, agreeableness, liberalism, self perceived attractiveness and athleticism and negatively related to social dominance orientation and conservatism. Additionally,

² The Grateful Dead experience is "an intense identification with the group and subsequent deep enjoyment of its music" (McGown & Dulaney, 1999, p. 113).

Rentfrow and Gosling (2003) found a substantial absence of correlation between music preference, emotional stability, depression and self-esteem. Since this study did not address self-esteem as an independent construct, but as a personality trait, this may explain the lack of expected correlation between self-esteem and music preference. Although this study does address music preference and its possible correlation with psychological wellbeing and personality, for cultural reasons, it may not be applicable to the New Zealand population as it was undertaken in the United States.

Coping

Significant research is present detailing the use of music as a coping mechanism. It is believed that music regulates emotions by allowing a temporary escape from thoughts and feelings, or validates thoughts and feelings, which enables individuals to release pent up emotions, such as anxiety and anger (Rustad et al., 2003). Research by North, Hargreaves, et al. (2004) found that listeners selected specific genres of music to elicit different effects within themselves, while White (1985) found that music is, and will likely continue to be used as, a diversion from stress and a coping mechanism for many people. This is further supported by Tomlinson (1998) who concluded that Dance parties/music was a therapeutic release for youth who feel alienated in modern society. Lacourse, Claes and Villeneuve (2001) found that individuals with a preference for Heavy Metal music are likely to have difficult family relationships, and are apt to feel more symptoms of alienation. Females particularly with such circumstances will use the Heavy Metal genre as a coping mechanism.

North et al. (2004) conducted a study to establish whether music could be used to manipulate one's mood. Participants listened to music that was deemed positive and uplifting as well as music considered 'annoying' to determine if the music affected their emotional state. It was found that positive and uplifting music produced a positive and uplifting emotional state, whereas annoying music produced an agitated and annoyed emotional state within the participants. Wells (1985) also found that both females and males use music to change their mood, established to be particularly true when feeling depressed, as it was concluded individuals used music at this time to uplift their spirits. Music, it has been found, helped individuals calm down or relax (Wells, 1985). Laukka (2007) found that music is a recurrent source of positive emotions and listeners tend to listen to a range of music that relates to their emotional functions. Steele and Brown (1995) report their participants commenting that they used music to enhance their mood

(“When I need to get pumped up, like before a party, I listen to wild, loud music” p 565) or to cope with a feeling (“she liked to turn on her stereo and ‘just wallow’ in it ... find songs that are like the same as whatever kind of mood I’m in ... when I am sad I listen to sad music” p 566). Interestingly, Wheeler (1985) found that the mood after listening to music was influenced by the mood before listening to the music. Thus, if the music heard is not a music preference, the individual will feel worse than beforehand. Conversely, if a person feeling badly listens to music they like, that person will feel better.

Self-Esteem

There have been over a hundred different proposed definitions of self-esteem (Mruk, 1999). For the purposes of this research, self-esteem will be defined as a person's subjective appraisal of themselves as intrinsically positive or negative (Sedikides & Gregg, 2003). Therefore, an individual with high self-esteem has “self-respect, considers himself a person of worth. Appreciating his own merits, he nonetheless recognizes his faults” (Rosenberg, 1979, p. 54); a person with low self-esteem “lacks respect for himself, considers himself unworthy, inadequate, or otherwise seriously deficient as a person” (Rosenberg, 1979, p. 54). Since the emergence of psychology as a discipline, self-esteem and self-concept have been regarded as important constructs (Leary, 1999). Many areas of psychology have examined self-esteem: developmental psychologists have investigated how self-esteem affects development; personality psychologists have been interested in whether self-esteem exists as a trait; social psychologists have examined what behaviours maintain self-esteem; while theorists of varying orientations have debated the magnitude of the relationship between self-regard and psychological adjustment. More recently, Leary (1999) suggested that reinforcing self-esteem is a possible remedy for both psychological and social problems.

It is believed that a person's self-view is related to their global self-esteem and that although an individual's self-view is the ‘building block’ of self-esteem, the way people frame this self-view will influence the impact of specific self-views on self-esteem (Pelham & Swann, 1989). Therefore, a person will not only assess how ‘good’ they are but also what it means to be ‘good’ at different things. The way a person determines the meaning of a particular self-view will be by assessing if the attribute is important to them, the degree of certainty that they possess regarding the attribute, and how their actual self-view compares to their ideal self-view (Pelham & Swann, 1989). Therefore,

the self-views that are linked to an individual's goals and values and are seen as personally important will be the self-views that most strongly influence their global sense of self-worth (Pelham & Swann, 1989). Self-esteem is most commonly lowered by criticism, rejection, failure, and other events that have negative implications on relational evaluations (Leary, 1999). Alternatively, self-esteem is raised when an individual receives praise, succeeds, feels appreciated by another, or other events that are associated with relational admiration (Leary, 1999).

Research on self-esteem has also shown that individuals with low self-esteem are more likely to suffer from a variety of psychological difficulties and personal problems, including criminal behaviour, loneliness, academic failure, substance abuse, teen pregnancy, and depression (Leary, 1999). Similarly, individuals who experience substantial changes in self-evaluations and self-esteem are considered to be more vulnerable to psychopathologies than those with stable self-esteem (Kashdan, Uswatte, Steger & Julian, 2006).

Though music has been coupled with wellbeing since ancient times there is very little research on music and psychological wellbeing (Laukka, 2007). This is odd since many young people in modern society consider their music to be essential to their wellbeing (Steele & Brown, 1995), and there is growing concern about their music listening habits and the effect it might have on their psychological wellbeing (Baker & Bor, 2008).

Research from the USA has indicated that musical preference is related to physiological arousal. Highly arousing music, for example, Rap, Heavy Metal, Rock and Dance, has been found to increase the resting arousal level³ of the listener (McNamara & Ballard, 1999). Additionally, highly arousing music has been linked to sensation seeking proclivity, suggesting that these types of music effect an individual's emotional arousal (Leary, 1999). Throughout the literature self-esteem has been linked with an individual's emotions, for example, depression and anxiety (Mineka, Watson & Clark, 1998), pride and shame (Tangney & Fischer, 1995), happiness and contentment (Diener & Diener, 1995), anger and hostility (Bushman & Baumeister, 1998). This research has possibly provided an indirect link between self-esteem and music preference, though that relationship is not addressed directly. Recently, North (n.d.) found that Blues, Jazz,

³ It is not entirely clear as to what was meant by 'resting arousal' though through reading the research it could reasonably be assumed that this constituted the resting cardiovascular and physiological levels of the participants.

Classical, Rap, Reggae and Pop fans display high levels of self-esteem while those who enjoy Heavy Metal and Rock tended to low self-esteem (BBC News, 2008).

Rubin et al. (2001) found that listeners of Rap had slightly higher levels of self-esteem than listeners of other music genres. Furthermore, Rap music was found to increase the self-esteem of low-income African American young males (Rubin et al., 2001). Dixon, Zhang and Conrad's (2009) research explains this finding as normal within those who consume media with images that positively reflect one's own ethnic group. Since most Rap performers are of African American descent, and are perceived as growing up in low income areas, the participants in Rubin et al.'s (2001) study could likely not only identify with the performers but also receive the positive message that it is possible to 'get out of the ghetto'. Rubin et al. (2001) also suggests that music can influence a person's mood. However, Ballard and Coates' (1995) findings disagree, as they found no relationship between Heavy Metal, Rap, nonviolent lyrics, homicidal lyrics, or suicidal lyrics on participant's anxiety or self-esteem. Could this be because many Heavy Metal and Rap songs have positive themes such as love and spirituality (Thigpen, 1993)? Or do Ballard and Coates (1995) results provide more support for Lull's (1982) findings that lyrics have little or no influence? Yet in the USA the Parent's Music Resource Centre continues to insist on consumer warning labels on albums with potentially offensive lyrics, believing Heavy Metal and Rap music contain damaging lyrics that lead to young people displaying negative moods such as depression (Hansen & Hansen, 1991; Thigpen, 1993). The key word, however, is *potentially*, as it could be argued that the warnings are more about the artist than the actual content - recordings by Caucasian artists are less likely to be tagged with warnings than equally offensive recordings by African American artists (Thigpen, 1993). Conversely, Ballard and Coates (1995) found non-violent rap and heavy metal songs actually produced higher levels of depression.

Depression and Mood

Ballard and Coates (1995) assert that no empirical data links depression with either Heavy Metal or Rap. A statement supported by Lester and Whipple (1996) who found that measures of depression were not associated with any musical preference. However, Martin et al. (1993) found that a preference for Heavy Metal was associated with depression. Additionally, Rosenbaum and Prinsky (1991) established that individuals with a preference for Heavy Metal music have a higher incidence rate of hospitalization

for psychiatric problems. Many individuals diagnosed with mood disorders tend to have a preference for Rap, Rock, Heavy Metal, while those with oppositional defiant disorders prefer Rap and Dance music (Doak, 2003). The above studies could indicate that a preference for these genres are a symptom of these mental illnesses, though this is hugely arguable, as many with a preference for these genres have no history or indication of mental illness.

While music may not cause depression, there is the possibility that feeling depressed 'makes' us listen to a certain genre or type of music. Questions of causality will not be easily solved however, especially as studies have shown that Classical music reduces both anxiety and depression (McCarty, Barrios-Choplin, Atkinson & Tomasino, 1998). Therefore, further research needs to not only clarify whether or not a preference for Heavy Metal is associated with depression but also investigate the possible relationship between depression levels and a preference for other musical genres.

USA research by Stack et al. (1994) found that although Heavy Metal music reflects and nurtures despair and hopelessness, it is actually the subculture created by preference for this music that contributes to said despair and hopelessness. Leblanc (1999) similarly found that being part of the Punk subculture has a positive influence on females. Therefore, it is arguable that the music itself has no influence on psychological wellbeing, but rather it is simply membership in a greater subculture that is the influence. However, Epstein (1998) argues that understanding a subculture's music preference is central to the understanding of the subculture. Therefore, by implying that the subculture is a contributor, one is essentially stating that music is.

Selective Exposure Theory is based on the hedonistic premise that individuals strive to rid themselves of bad moods or at least attempt to diminish the intensity of these moods; and further, that individuals also strive to perpetuate good moods and seek to maintain the intensity of good moods. The theory argues that individuals will arrange both internal and external stimuli to minimize bad moods and maximize good moods (Zillmann, 1988). If individuals can actively use music to create certain mood states then music can also be viewed as a resource rather than just a commodity (North, Hargreaves et al., 2004). Supporting this notion, Arnett (1991) found that young males with a preference for Heavy Metal reported feeling the music produced a cathartic effect. Several other studies have investigated how individuals view mood enhancement

as an important function of music, with some concluding that it is of high importance (e.g., Roe, 1985) while others finding music is of no importance to mood enhancement (e.g., Gantz, Gartenberg, Pearson & Shiller, 1978).

Early Dance music culture adopted the notions of peace, love, unity and respect (Sylvan, 2005), which would assumedly correlate with high psychological wellbeing. That said, one of the key characteristics of members within the Dance music culture is the high frequency of illicit drug use, specifically ecstasy (Kavanaugh & Anderson, 2008) - the use of which increased substantially during the height of the American underground Dance party scene (1998 to 2001; Office of National Drug Control Policy, 2006). Research by Klitzman (2006) noted that the after-effects of ecstasy are often either depression, anxiety or both, therefore, the above mentioned assumption, that due to the adoption of peace, love, unity, and respect the Dance music culture would correlate with high psychological wellbeing, would be either incorrect or only applicable when an individual is drug influenced.

Sacks (2007) belief that music induces our deepest feelings and affects our state of mind, is supported biologically by studies that found when instrumental music is reported as giving people 'chills', it is in fact the ventral tegmentum and nucleolus accumbens providing a pleasurable reward via the dopamine channels (Blood & Zatorre, 2001; Menon & Levitin, 2005). It maybe possible to conclude therefore that, on a purely biological level, our music preference affects our psychological wellbeing.

Thus, although significant research around these three constructs has been conducted, no research as of yet has examined how these constructs all may correlate with music preference. White (1985) believed that music can be a bridge for counsellors working with young adults, thus, the hope is this research will aid those counsellors working with young adults within New Zealand to gain improved understanding of their clients and the optimal method for conducting therapy. Additionally, the research hopes to increase understanding of why we listen to the music we do and what effect it has on us.

Operational Definitions

Music Preference

Music preference can be defined as choosing, either through a verbal statement or rating scale, one type of music genre over others (Kuhn, 1980). Several studies dedicated to

music preference in relation to various experiences (e.g., weddings, funeral, physical exercise, etc) have been conducted. As the present study focuses on music preference, a critique of the scales used in other research is deemed necessary. Disappointingly, many researchers interested in music preference do not give clear indications as to what scale(s) they used to measure this variable (e.g., Burge et al., 2002; North & Hargreaves, 1999; Rubin et al., 2001). Questionnaires or surveys may have been utilised, though reliability and validity is questionable, as there is minimal description of the items used in these questionnaires, and little, if any, normative data is available.

Some researchers have played music, and asked participants to indicate which styles they liked or disliked (Cattell & Saunders, 1954; McCown et al., 1997), allowing participants to hear the music instead of having to recall from memory how the music sounds. This method has limitations, however, as the participants are restricted to the researchers' music selection, and the participants' mood state at the time. Furthermore, this method could be extremely time consuming, depending on the number of artists and genres included, potentially leading to participant fatigue, hence undermining the study's validity.

Schwartz and Fouts (2003) using a scale developed by Finnas (1987), assessed music preference based on qualities of the music rather than specific styles of music. These qualities included *sad and gloomy*, *romantic and dreamy*, *soft and tender*, *serious and thoughtful*, *upsetting and protesting*, *tough and hard*, *played with many guitars*, *wild and violent*. Participants were requested to rate their preference for each music quality on a five-point Likert scale. Although this method may provide insight into an individual's music preference, it is also very subjective. For example, one person may feel that *serious and thoughtful* describes Heavy Metal, where as another might feel that this quality describes Classical music. Furthermore, because the descriptions consisted of two words, an individual might enjoy music that contains only one of the qualities but not the other, potentially confounding the data. For example, the *upsetting and protesting* category and protest songs of the 1960's - many might identify these songs as protesting but not upsetting.

Several other researchers have developed their own questionnaires on music preference (e.g., Little & Zuckerman, 1986; McNamara & Ballard, 1999; Rentfrow & Gosling, 2003; Scheel & Westefeld, 1999; Tarrant et al., 2001). Most involved Likert scales on

which the participants were asked to rate their preference for the genres listed. Many questionnaires were tailored for the particular study, thus only included a select number of genres (e.g., Scheel & Westefeld, 1999; Tarrant et al., 2001). The questionnaire designed by Little and Zuckerman (1986) was noteworthy as it reviewed several music genres and sub-genres as well as including examples of each. However, with 75 questions it was lengthy and time consuming to complete. Additionally, as it was designed in the 1980's many of the music genres and examples given, unfortunately, are no longer applicable.

The questionnaire entitled the Short Test of Music Preference – New Zealand (STOMP-NZ) by Sigg (2007) included eighteen genres rated on a seven point Likert scale (see Appendix A). These eighteen genres were obtained by modifying some of the genres in Rentfrow and Gosling's (2003) STOMP, as well as adding examples of each music genre. This was done as not all genres from the original scale were seen to be applicable to a New Zealand population and an individual's interpretation of what each genre of music encompassed might depend on their culture or group of friends. Subsequent principal components analyses reduced these genres to five factors labelled 'Intense and Aggressive', 'Rhythmic and Beat-based', 'Reflective and Complex', 'Upbeat and Conventional', and 'Energetic and Bass-based' (see Table 2). This scale was judged to be the most relevant to the current study as it contains genres applicable to the New Zealand population currently being studied.

Personality

The Big-Five theory of personality is the most widely used method of assessing personality (McCrae & Costa, 1999). Many instruments have been developed to assess the Big-Five dimensions, with the most comprehensive being the NEO-PI-R which measures the five domains as well as six specific facets within each dimension (Costa & McCrae, 1992). However, this was found to be too long for many research purposes (taking around 40 minutes to complete) so shorter instruments have been established and widely used. The Big-Five Inventory (44 items), the NEO-FFI (60 items), and the TDA (100 items) are the most commonly used and take between five and fifteen minutes to complete (Gosling, Rentfrow & Swann, 2003).

Table 2: Five factors and the genres encompassed by each

Factor One: Intense and Aggressive	Factor Two: Rhythmic and Beat-based	Factor Three: Reflective and Complex	Factor Four: Upbeat and Conventional	Factor Five: Energetic and Bass-based
Rock	Hip-Hop	Jazz	Pop	Dance
Punk	Rap	Blues	Country	D 'n' B
Ska	R 'n' B	Classical	Golden Oldies	Reggae
Metal			Disco	
Grunge				

However, there has been a recognized need to create an even briefer measure of personality, especially for the research community. Since its creation in 2003 many studies (e.g. Bunevicius, Katkute & Bunevicius, 2008; McElroy & Dowd, 2007; von Hippel & Gonsalkorale, 2005) have used the Ten-Item Personality Inventory (TIPI; Gosling et al., 2003). The TIPI (see Appendix B) is based on the Big-Five theory of personality and consists of ten items with two descriptors on each item that are rated on a 7-point Likert scale. It has been found to have high construct validity, be psychometrically superior to a five-item inventory, and has reduced item redundancy (Gosling et al., 2003).

Self-esteem

Several scales are available by which self-esteem can be measured. For the current study, the RSES, first published in 1965 (Rosenberg, 1965), was deemed the most acceptable for several reasons. First, it has been widely used by other studies (e.g., Groleger, Tomori & Kocmur, 2003; Park, Schepp, Jang & Koo, 2006; Rentfrow & Gosling, 2003). Second, it has previously been used in studies on a New Zealand population (e.g., Harrington & Liu, 2002; Watkins et al., 1998). Third, the scale was readily available and was considered a time efficient way to measure the participant's self-esteem. Fourth, it has recently been re-evaluated (Gray-Little, Williams & Hancock, 1997) in terms of its psychometric properties, thus presents an opportunity to contribute to this process.

The RSES (see Appendix C) contains ten statements, usually presented on either five or seven-point Likert scales, with '*strongly agree*' at the one end and '*strongly disagree*' at the other end of the scale. Studies assessing the internal consistency and reliability of the RSES report high alpha coefficients and test-retest correlations. The RSES treats self-esteem as a uni-dimensional, global construct, though this has been questioned by analyses undertaken using item response theory (Gray-Little et al., 1997). Research into

the factor structure of the RSES has been inconclusive, with some studies reporting one-factor solutions (e.g., O'Brien, 1985) or two-factor solutions (e.g., Carmines & Zeller, 1979). For the studies reporting a two-factor solution, the two factors have generally reflected positively-worded items (representing self-confidence) and negatively-worded items (representing self-depreciation), with both factors stated to be measuring the same underlying construct: self-esteem.

Tafarodi and Swann (1995) developed the Self-Liking/Self-Competence Scale (SLCS), consisting of two ten-item sub-scales – one measuring self-competence, one measuring self-liking. However, the SLCS had some major limitations including a high correlation of the two sub-scales, and individual response tendencies. To remedy, the SLCS was revised to the SLCS-R, which consisted of six 'cleaner' items, six items modified by adding qualifiers, and four unchanged items giving a total of 16 items that were reducible to two sub-scales with balanced negatively and positively worded items (Tafarodi & Swann, 2001). When the SLCS-R (see Appendix D) was analyzed it revealed a number of the intended benefits, including reducing into two sub-scales, plus showing that self-competence and self-liking are not empirically reducible into a single construct.

Additionally, since it is believed that self-view influences global self-esteem, it was felt this should also be measured to give a more robust idea of self-esteem. The Self-Attributes Questionnaire (SAQ; Pelham & Swann, 1989) is the optimal instrument to employ as it operationalises self-esteem by examining the attributes that are understood to underpin self-view, the importance of these to the individual, and the degree to which the individual feels they possess said attribute. The SAQ (see Appendix E) also examines the degree to which the individual's actual self-view matches with their ideal self-view (Pelham & Swann, 1989).

Anxiety and Depression

Although anxiety and depression are distinct, it has proven difficult to distinguish between the two constructs by empirical means when using clinicians' ratings or self-report measures (Clark & Watson, 1991), as most existing self-report scales for anxiety and depression predominantly measure the common factor of negative affectivity (Watson & Clark, 1984). Negative affectivity (NA) is conceptualized as a dispositional dimension where high NA reflects the experience of subjective distress and unpleasant

engagement and low NA reflects the absence of these feelings. Studies have supported the existence of a dominant NA dimension, providing evidence of a prominent relationship with the symptoms and diagnosis of both anxiety and depression (Brown, Chorpita, Korotitsch, & Barlow, 1997; Clark & Watson, 1991; Watson & Clark, 1984). However, the tripartite model suggests that, in addition to this common factor, specific components to anxiety and depression allow differentiation. In the case of anxiety, the definitive component is physiological hyper-arousal, and in the case of depression low positive affectivity. The Depression Anxiety Stress Scales 21 (DASS-21; see Appendix F) is a shortened form of Lovibond and Lovibond's (1995) 42-item self-report measure of depression, anxiety, and stress (DASS). Brown et al. (1997) have suggested that the sub-scales of the DASS-21 may measure the three dimensions outlined in the tripartite model; low positive affectivity (DASS-Depression), physiological hyperarousal (DASS-Anxiety), and NA (DASS-Stress). Additionally, there is evidence that the DASS-Depression and DASS-Anxiety scales constitute valid measures of the constructs they were intended to represent (Crawford & Henry, 2003; Henry & Crawford, 2005; Lovibond & Lovibond, 1995).

The literature reveals a possible link between psychological wellbeing, social identity, personality traits and music preference, yet very little research has addressed the possible correlation between these. Additionally, although different dimensions of music preference have been previously examined it has never been done on a single sample. This is especially the case within a New Zealand population, therefore a study to assess these relationships with this population is justified. Furthermore, by assessing these variables within a single study it reduces the likelihood of the results being confounded by individual differences. If a correlation is found between music preference and any of the three variables, it could provide a bridge and aid for counsellors working with young adults (White, 1985) within New Zealand. It may also allow for better understanding of these clients and provide suggestions on the optimal method for conducting therapy. Thus, there are three hypotheses for this study:

1. That music preference, as an aspect of social identity, will display a correlation with self-esteem scores.
2. A relationship between personality and music preference is present.
3. There will be an association between psychological wellbeing and music preference.

Method

Participants

A convenience sample of Bachelor of Health Science students attending the Auckland University of Technology's Akoranga campus, located in Auckland, New Zealand were recruited (see Appendix H). The sample consisted of 312 students, 71 males ($M_{\text{age}} = 24.54$ years, $SD = 8.10$) and 241 females ($M_{\text{age}} = 23.34$ years, $SD = 7.98$). A total of 45 students identified themselves as Asian, 160 as New Zealand European, 14 as Pacific Island, 10 as Maori, 4 as South African, 22 as other European, 13 as 'other', and 44 declared a mixed ethnic profile (e.g., of both Maori and New Zealand European descent). The Auckland University of Technology's ethics committee approved all procedures prior to the study commencing.

Scales

This quantitative study employed six pre-existing surveys, a demographic section (see Appendix I), and an additional demographic question asking whether they listen to particular songs/music when they are sad/unhappy/down. The six questionnaires, probing music preference, personality, and psychological wellbeing will now be described in turn.

Rosenberg Self-Esteem Scale

The Rosenberg Self-Esteem Scale (RSES, Rosenberg, 1965), consists of ten questions on which the participant is asked to rate, on a five-point Likert scale (4 = '*strongly agree*' to 0 = '*strongly disagree*'), how much each question applies to them. The responses to these ten items, five of which are written in the negative and thus require reverse coding, are summed to provide an estimate of global self-esteem. The total RSES scores can range from zero to forty, with a score of 20 or below indicating a low level of self-esteem (Rosenberg, 1965).

Depression, Anxiety, Stress Scale - 21

The Depression, Anxiety and Stress Scale (DASS – 21; Lovibond & Lovibond, 1995), comprises 21 self-report items intended to measure a respondent's level of depression, anxiety and stress. Each item is rated on a four point Likert scale probing how much

each statement applies over the past week (“*Did not apply to me at all*” to “*Applied to me very much, most of the time*”). The DASS–21 is a condensed version of the original DASS–42, and to afford comparison to the 42 item scale each subscale’s total is scaled by a factor of two, providing a final score ranging from zero to forty-two. These scores then fall into one of five severity ratings described by Table 3.

Self-Attributes Questionnaire

The Self-Attributes Questionnaire (SAQ; Pelham & Swann, 1989) constitutes of 10 attribute questions probing intellectual ability/academic ability; social skills/social competence; artistic and/or musical ability; athletic ability; physical attractiveness; leadership ability; common sense; emotional stability; sense of humour; and discipline. The ten attributes items are rated on an A to J percentage scale relative to their peers (see Table 4). To score the SAQ the letters constituting the response categories are converted to their corresponding number (e.g., A = 1, B = 2, etc). To assess overall self-view the first 10 question scores are totalled, with a higher score indicating a higher self-view (Pelham & Swann, 1989).

Self-Liking/Self-Competence Scale – Revised

The Self-Liking/Self-Competence Scale – Revised (SLCS – R) (Tafarodi & Swann, 2001), is a self-report questionnaire that contains 16 items that are divided into questions tapping the two dimensions of self-worth/self-competence and self-liking as identified by Tafarodi and Swann (2001). On a five point Likert scale participants are required to rate the extent to which they agree with the statement (“*strongly disagree*” to “*strongly agree*”), with four of the eight questions for each dimension being negatively worded. Each item is then scored (items assessing the opposite are reverse coded) and then the eight questions assessing a dimension are summated to create an overall subscale score. The score for each subscale can range from eight to forty, with higher scores being indicative of higher self-competence/self-liking (Tafarodi & Swann, 2001).

Table 3: Severity, ranging from normal to extremely severe, of DASS scores, with the higher scores indicating greater severity.

	Depression	Anxiety	Stress
Normal	0 – 9	0 – 7	0 – 14
Mild	10 – 13	8 – 9	15 – 18
Moderate	14 – 20	10 – 14	19 – 25
Severe	21 – 27	15 – 19	26 – 33
Extremely Severe	28 - 42	20 - 42	34 - 42

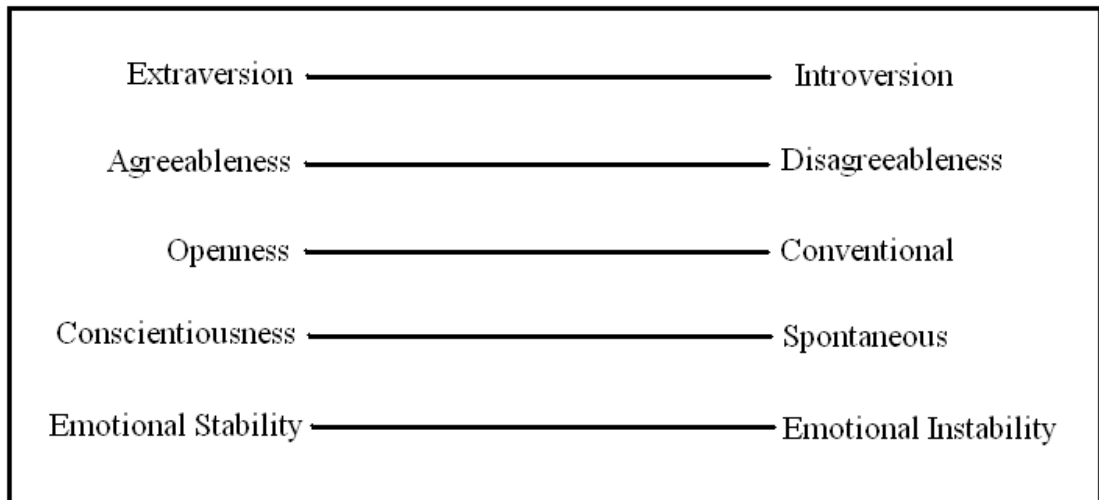
Ten-Item Personality Inventory

The Ten-Item Personality Inventory (TIPI; Gosling, Rentfrow & Swann, 2003), consists of 10 items, each prefaced with “*I see myself as*”. Each TIPI item is rated on a seven point Likert scale (disagree strongly to agree strongly). The Big-Five dimensions of personality are extraversion, conscientiousness, openness to new experience (denoted ‘openness’ for the remainder of this study), emotional stability, and agreeableness. Half of the 10 items denote one pole of a Big-Five (e.g., extraversion, agreeableness, openness to new experience, conscientiousness, and emotional stability) (Figure 1) while the other half denote the opposite pole (i.e., introversion, disagreeableness, conventional, spontaneous, and emotional instability) which are subsequently recoded. An overall score for each dimension is obtained by adding, after appropriate recoding, the two items representing each scale – the higher the score the more prominent the personality trait is within that individual. The TIPI has been found to have high test-retest reliability ($r = .72$) and has been found to stand as an adequate representation of the longer Big-Five measures (Gosling, Rentfrow & Swann, 2003).

Table 4: Rating scaling for 10 attribute questions.

A	B	C	D	E	F	G	H	I	J
Bottom	Lower	Lower	Lower	Lower	Upper	Upper	Upper	Upper	Top
5%	10%	20%	30%	50%	50%	30%	20%	10%	5%

Figure 1: The polarization of the Big-Five personality traits.



Short Test Of Music Preference – New Zealand

A modified version of the Short Test Of Music Preference (STOMP; Rentfrow & Gosling, 2003) denoted “STOMP-NZ” was used to measure music preference, and includes 18 genres: hip-hop, rap, R & B, rock, dance, jazz, blues, drum and bass, reggae, classical, pop, punk, ska, metal, grunge, country, golden oldies, and disco. Each genre is prefaced with “*I like*” and participants are asked to rate on a 7-point Likert scale their preference for each genre (1 = “*Not at all*” to 7 = “*Very much*”). The STOMP-NZ has been tested on 199 students and found to have both reliability and validity. These genres were subjected to a principal components analysis and it was found the genres were reducible into five factors (see Table 5). For the purposes of this research the factors will be referred to by only the first word used to describe them (e.g. ‘Intense’ will refer to the Intense and Aggressive factor). In addition to assessing these ‘overall preference’ was also calculated by summing an individuals scores for all genres as was the intergroup difference between the genres.

Table 5: Outline of factors found through subjecting the 18 genres of the STOMP-NZ to a principal components analysis.

Factor One: Intense and Aggressive	Factor Two: Rhythmic and Beat-based	Factor Three: Reflective and Complex	Factor Four: Upbeat and Conventional	Factor Five: Energetic and Bass-based
Rock Punk Ska Metal Grunge	Hip-Hop R ‘n’ B Rap	Jazz Blues Classical	Pop Country Oldies Disco	Dance Drum and Bass Reggae

Procedure

After permission was gained from lecturers, the researcher entered the lecture theatre, explained the nature and objectives of the research to potential respondents and indicated that participation was voluntary and anonymous. Potential participants were advised that participation would require responses to questions about their music preference as well as their psychological wellbeing. Last, it was requested that the participants answer all items honestly. The completed questionnaires were then distributed, and fifteen minutes allocated for completion. All questionnaires were obtained within the same week in March 2009.

Analysis

Histograms were generated and scrutinised to see if normality was satisfied for each of the scales. The means, standard deviations, item-total correlations including Cronbach's alpha of the inventories was also calculated. The item-total correlations are the correlations between an individual item and the total of scores on all other items. An item-total correlation of 0.3 or greater indicates that an item is well correlated with the total test score, thus ensuring the scale is unidimensional and that all items are measuring what they purport to be.

Two Multivariate Analysis of Variance (MANOVA) were undertaken in accordance with Tabachnick and Fidell's (2007) guidelines. MANOVA was performed to reduce the experiment-wide error rate, in which gender was declared a fixed factor and age a covariate. One MANOVA was undertaken on the seven psychological facets (i.e., Depression, Anxiety, Stress, Self-liking, Self-Competence, Self-Attributes and Self-esteem) and a second employed the five dimensions of the TIPI as the dependant variables.

The analysis to test the hypotheses was carried out as follows:

- Hypothesis one: That music preference, as an aspect of social identity, will display a correlation with self-esteem scores.

To test this hypothesis a correlational analysis was performed between four indices of self-esteem (RSES, self-liking, self-competency, self-attribution) and the intergroup difference (IGD). A proxy measure of intergroup differences was established by an individual indicating preference to numerous music genres,

based along a music preference dimension, then summing the absolute difference between preference ratings for every pair wise combination of genre. As there are 18 music genres this will entail the calculation of 171 differences, which when summed is a proxy representation of intergroup differences along musical lines. Using this approach scores can range from 0 to 102. Thus a participant who assigns an equal preference rating to all genres obtains a score of 0, and thus does not identify with any one genre. An example at the other end of the continuum would be an individual who assigns a rating “7” (i.e., *I like very much*) to one genre only whilst assigning “1” ratings (i.e., *I like not at all*) across all other genres. Such an individual would obtain a score of 102, that is, indicating extreme preference for a single genre. The rationale for testing this is that some past research (e.g., Tarrant et al., 2001) has suggested that those with higher levels of social identity will have higher self-esteem.

- Hypothesis two: A relationship between personality and music preference is present

A regression analysis, specifically a battery of hierarchical multiple linear regression analyses, was performed to establish the association between music preference factors and personality traits. The reason for testing this is that many researchers (e.g., Delsing et al., 2008; Rentfrow & Gosling, 2003, Zweigenhaft, 2008) have found a relationship exists between music preference and personality traits.

- Hypothesis three: There will be an association between psychological wellbeing and music preference.

A regression analysis was performed to establish whether an association exists between music preference factors and psychological wellbeing. The basis for testing this is that some research (e.g., Baker & Bor, 2008; Rubin et al., 2001; Steele & Brown, 1995) has suggested a relationship exists between these music preference and psychological wellbeing.

Results

Each participant's data was entered into the Statistical Package for the Social Sciences (SPSS v.16), where all analyses were performed. Five items on the RSES, eight items on the SL/SC-R, and seven items on the TIPI were reverse coded prior to analysis.

Depression, Anxiety, and Stress Scale – 21 Scores

The mean scores and standard deviations for all items in the DASS were calculated. The overall sub-scale means were 9.11 ($SD = 8.63$) for depression, 8.34 ($SD = 7.13$) for anxiety, and 14.08 ($SD = 9.01$) for stress. Figure 2 displays histograms for each subscale of the DASS-21. For all three variables moderate to extreme positive skewness is noted, which is typical of non-clinical populations. With reference to Table 3 it can be seen that none of the three means indicate a population with clinical syndromes, though a small number of individuals do exceed the criteria.

Average scale item scores and standard deviations are presented, along with item-total correlations, in Table 6. A Cronbach's alpha for the 21-item scale was calculated ($\alpha_c=0.909$). Inspection of Table 6 reveals that item A2 is not correlating well with the other items in the scale, and so this item is dropped from further analysis. The *alpha if deleted* gives α_c for the remaining items if that item was removed from the analysis, and guides us as to whether to retain or discard an item.

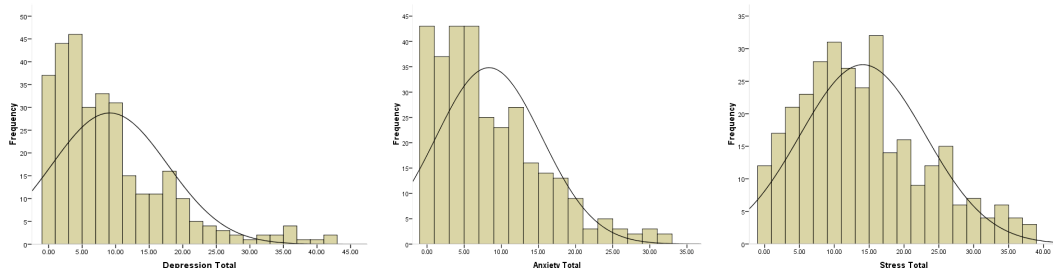


Figure 2: Histogram showing frequency of respondents obtaining a possible DASS-21 depression (left), anxiety (centre) and stress (right) score. The solid curve is the normal probability density function.

Table 6: Means (*M*), standard deviations (*SD*), and item-total correlations for the 21-items making up the DASS. The final column, *Alpha if deleted*, gives Cronbach's alpha if that item was deleted from the given sub-scale.

Item	<i>M</i>	<i>SD</i>	Corrected Item-total Correlations	Alpha if deleted
Depression				
D3) I couldn't seem to experience any positive feelings at all.	1.263	1.654	.609	.903
D5) I found it difficult to work up the initiative to do things.	2.494	1.807	.447	.907
D10) I felt that I had nothing to look forward to.	1.064	1.642	.591	.904
D13) I felt down-hearted and blue.	1.673	1.788	.691	.901
D16) I was unable to become enthusiastic about anything.	1.090	1.609	.602	.903
D17) I felt I wasn't worth much as a person.	.872	1.607	.640	.903
D21) I felt that life was meaningless.	.622	1.438	.602	.904
Anxiety				
A2) I was aware of dryness of my mouth.	1.814	1.946	.200	.914
A4) I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion).	.814	1.367	.389	.908
A7) I experiences trembling (e.g., in the hands).	.974	1.620	.376	.908
A9) I was worried about situations in which I might panic and make a fool of myself.	1.564	1.922	.541	.905
A15) I felt I was close to panic.	1.103	1.640	.656	.902
A19) I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat).	1.250	1.819	.497	.906
A20) I felt scared without any good reason.	.801	1.465	.505	.906
Stress				
S1) I found it hard to wind down.	2.487	1.869	.441	.907
S6) I tended to over-react to situations.	2.180	1.806	.564	.904
S8) I felt that I was using a lot of nervous energy.	1.756	1.916	.590	.904
S11) I found myself getting agitated.	1.968	1.738	.620	.903
S12) I found it difficult to relax.	2.115	1.874	.649	.902
S14) I was intolerant of anything that kept me from getting on with what I was doing.	1.878	1.727	.606	.903
S18) I felt that I was rather touchy.	1.724	1.640	.623	.903

$\alpha_c=0.909$

Inspection of Table 6 indicates sensible mean scores (i.e., towards the middle of the response range), high standard deviations (i.e., the items can discriminate between subjects), high item-total correlations (i.e., greater than 0.3 in all cases except for A2 which as discussed previously would be dropped from further analysis), and no Cronbach's alpha scores less than 0.9 if that item were deleted from the sub-scale. From this analysis it can be concluded that the overall scale was reliable and internally consistent.

Rosenberg Self– Esteem Scale Scores

Descriptive statistics were obtained for each item of the RSES as well as the scale as a whole (See Table 7). The overall mean score for the RSES was 27.44 ($SD = 6.37$), which is higher than the criterion of 20. Inspection of Figure 3 reveals data to be normally distributed. A Cronbach's alpha for the 10-item scale was calculated ($\alpha_c=0.879$), and the results of an item-analysis undertaken on the ten items making up RSES are displayed in Table 7. High item-total correlations attest to the unidimensional nature of the scale. The mean item scores are reasonably sensible though tend towards the higher end, with high standard deviations indicating that the items are able to discriminate between subjects. From this analysis it can be concluded that the overall scale was fairly reliable and internally consistent.

Self– Attributes Questionnaire Scores

Mean scores and standard deviations for all aspects of the Self Attribute Scale were calculated (see Table 8). An independent samples t -test was performed to establish if there was a significant difference between males and females in terms of self-attribute scores. No significant difference ($t(312) = 1.27, p = .21$) was found between the genders for overall self attribution. Figure 4 shows the mean self attribution scores for males was 67.48 ($SD = 10.37$), and for females was 65.69 ($SD = 10.47$).

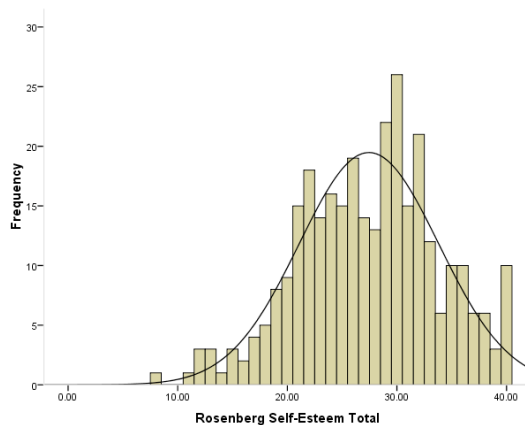


Figure 3: Histogram showing frequency of respondents obtaining a possible self-esteem score. The solid curve is the normal probability density function.

Table 7: Means (*M*), standard deviations (*SD*), and item-total correlations for the 10-items making up the Rosenberg self-esteem scale. The final column, *Alpha if deleted*, gives Cronbach's alpha if that item was deleted from the given sub-scale.

Item	<i>M</i>	<i>SD</i>	Corrected Item-total Correlations	Alpha if deleted
1) I feel I am a person of worth, at least on an equal plane with others.	3.1795	.76488	.536	.873
2) I feel that I have a number of good qualities.	3.2596	.62625	.566	.872
3) All in all, I am inclined to feel that I am a failure.	2.9808	.88917	.575	.870
4) I am able to do things as well as most other people.	2.8654	.79860	.457	.878
5) I feel I do not have much to be proud of.	3.0385	.94126	.635	.865
6) I take a positive attitude towards myself.	2.7628	.84193	.726	.860
7) On the whole, I am satisfied with myself.	2.7628	.86825	.689	.862
8) I wish I could have more respect for myself.	2.0385	1.14473	.636	.866
9) I certainly feel useless at times.	2.0353	1.12643	.625	.867
10) At times I think I'm no good at all.	2.5096	1.12837	.684	.862

$\alpha_c=0.879$

Self-Liking/Self-Competency Scale – Revised Scores

For this 16-item test a Cronbach's alpha of $\alpha_c=0.893$ was obtained, and an item-analysis was also undertaken on the sixteen items making up the Self-Liking/Self-Competency Scale - Revised. The average item scores and standard deviations are presented, along with item-total correlations, in Table 9. The mean scores and standard deviations for both facets of the SL/SC -R Scale was calculated (see Figure 5). Examination of Table 9 indicates sensible mean scores, high standard deviations, high item-total correlations of above 0.4, and Cronbach's alpha scores less than 0.90 if that item were deleted. From this it can be concluded that the overall scale was reliable and internally consistent.

Table 8: Means (M), standard deviations (SD), and item-total correlations for the 10-items making up the SAQ. The final column, *Alpha if deleted*, gives Cronbach's alpha if that item was deleted.

Item	M	SD	Corrected Item-total Correlations	Alpha if deleted
Intellect	6.598	1.359	.481	.756
Social	6.804	1.625	.568	.743
Artistic	5.498	2.312	.185	.801
Athletic	5.878	2.176	.321	.778
Attractive	6.135	1.685	.557	.744
Leader	6.701	1.795	.577	.740
Sense	7.531	1.536	.564	.745
Emotional Stable	6.749	1.744	.471	.754
Humour	7.338	1.673	.539	.746
Discipline	6.749	1.915	.379	.766

$\alpha_c=0.893$

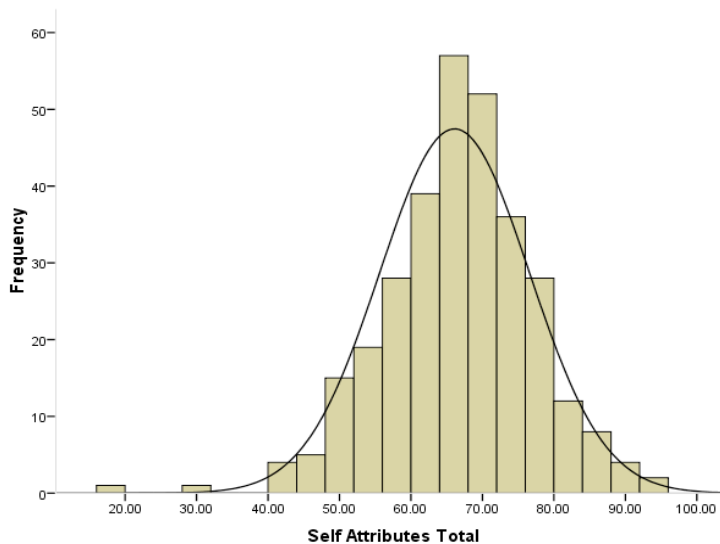


Figure 4: Histogram showing frequency of respondents possible self attributes total score. The solid curve is the normal probability density function.

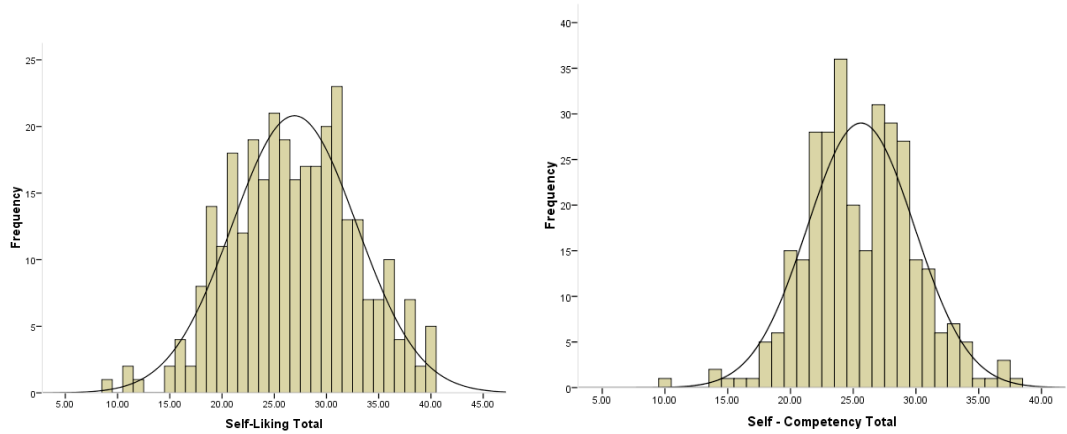


Figure 5: Histogram showing frequency of respondents obtaining a possible self-liking (left) and self-competency (right) score. The solid curve is the normal probability density function.

Table 9: Means (M), standard deviations (SD), and item-total correlations for the 16-items making up the Self-Liking/Self-Competency Revised Scale. The final column, *Alpha if deleted*, gives Cronbach's alpha if that item was deleted from the given subscale.

Item	M	SD	Corrected Item-total Correlations	Alpha if deleted
Self-Liking				
SL1) I tend to devalue myself.	3.147	1.013	.653	.883
SL3) I am very comfortable with myself.	3.670	.839	.684	.882
SL5) I am secure in my sense of self-worth.	3.683	.805	.670	.883
SL6) it is sometimes unpleasant for me to think about myself.	3.228	1.068	.623	.884
SL7) I have negative attitudes towards myself.	3.301	1.039	.713	.880
SL9) I feel great about who I am.	3.551	.847	.687	.882
SL11) I never doubt my personal worth.	3.061	1.045	.553	.887
SL15) I do not have enough respect for myself.	3.298	1.069	.667	.882
Self-Competency				
SC2) I am highly effective at the things I do.	3.644	.684	.482	.889
SC4) I am almost always able to accomplish what I try for.	3.772	.800	.476	.889
SC8) At times, I find it difficult to achieve the things that are important to me.	3.035	1.065	.405	.893
SC10) I sometimes deal poorly with challenges.	3.061	.998	.501	.889
SC12) I perform very well at many things.	3.644	.712	.506	.889
SC13) I sometimes fail to fulfil my goal.	2.705	.887	.399	.892
SC14) I am very talented.	3.442	.792	.454	.890
SC16) I wish I were more skilled in my activities.	2.314	.913	.424	.891

$$\alpha_c = 0.893$$

Ten-Item Personality Inventory Scores

Mean scores and standard deviations for the five facets of the TIPI Scale were calculated and are presented in Table 10. As shown in Table 10 most of the personality characteristics had a means above 9, with openness to new experience having the highest mean score (10.41). A Cronbach's alpha could not be calculated as scale $n < 3$.

Short Test of Music Preference – New Zealand

The mean scores and standard deviations for all genres within the STOMP-NZ was calculated (see Table 11) and illustrates that all genres had the full range of scores, with means ranging from 2.58 (i.e., ska) to 4.97 (i.e., pop).

Table 10: Means (M) and standard deviations (SD) for each of the personality traits.

Item Number	M	SD
Extraversion		
1	5.163	1.262
2	4.150	1.745
Total	9.325	2.603
Agreeableness		
1	4.118	1.392
2	5.770	1.031
Total	9.865	1.881
Conscientiousness		
1	5.342	1.172
2	4.783	1.665
Total	10.093	2.330
Emotional Stability		
1	4.396	1.653
2	4.974	1.349
Total	9.360	2.566
Openness		
1	5.550	1.126
2	4.863	1.486
Total	10.408	2.097

Table 11: Means (*M*) and standard deviations (*SD*) for the STOMP-NZ.

Item	<i>M</i>	<i>SD</i>
Hip hop	4.513	1.837
Rap	3.401	1.888
R 'n' B	4.542	1.896
Rock	4.465	1.749
Dance	4.587	1.747
Jazz	3.779	1.903
Blues	3.756	1.821
Drum 'n' Bass	4.077	1.915
Reggae	4.606	1.879
Classical	3.388	1.896
Pop	4.974	1.616
Punk	3.981	1.874
Ska	2.577	1.889
Metal	2.984	2.062
Grunge	3.33	2.027
Country	3.212	1.822
Golden Oldies	4.401	1.863
Disco	3.718	1.851

Gender and Age Effects

Research has shown that music preference changes with age and gender. To confirm these relationships a MANOVA was undertaken on the seven psychological wellbeing facets (i.e., Depression, Anxiety, Stress, Self-Liking, Self-Competency, Self-Attributes and Self-Esteem) and a second MANOVA employed the five dimensions of the TIPI as the dependant variable.

Association between gender and psychological wellbeing

A MANOVA was conducted with gender as the fixed factor and the seven latent psychological wellbeing variables constituted the dependent variables (DVs). Small-to-medium correlations existed between the seven DVs at each of the two levels of gender, and a Bartlett's test of sphericity ($\chi^2(27) = 1367.706, p < .001$) and a Box's *M* test of equality of covariance matrix ($F = 1.462, p = .061$) further confirmed the viability of a MANOVA. There was a small but significant multivariate effect of the grouped DVs in relation to gender (Wilks Lambda = .893, $F(7,302) = 5.163, p < .001$), indicating that psychological wellbeing is related to gender. Additionally, there was also a small but significant multivariate effect on the grouped DV's in relation to age (Wilks Lambda = .913, $F(7,302) = 4.118, p < .001$). Levene's tests of equality of variances were then performed prior to conducting univariate *F* tests. For each of the seven DVs the null hypothesis that the within-groups error is equitable across gender was supported ($p > .01$). The univariate *F* tests showed that there were significant differences across the two genders for depression ($F(1, 302) = 4.466, p = .035$), anxiety ($F(1, 302) = 6.982,$

$p=.009$), stress ($F(1, 302)=16.757, p<.001$), self-liking ($F(1, 302)=24.923, p<.001$), and self-esteem ($F(1, 302)=18.896, p<.001$) but not for self-attributes ($F(1, 302)=1.529, p=.217$) or self-competency ($F(1,302)=2.628, p=.106$). Thus gender and age are potential covariates that will be controlled for in subsequent analysis.

Association between gender and personality

A 2 (gender) x 5 (personality) MANOVA was undertaken to examine the association between the grouped DVs (i.e., personality), gender and age. Small but significant correlations existed between the five DVs at each of two gender levels. Two indices, the Bartlett's test of sphericity ($\chi^2(14) = 151.208, p<.001$) and Box's M ($F=1.430, p=.121$), confirmed that the data satisfied the homogeneity of covariance assumption. The MANOVA revealed a significant multivariate effect (Wilks Lambda = .91, $F(5,304)= 5.99, p<.001$) for gender. Additionally, there was also a small but significant multivariate effect on the grouped DV's in relation to age (Wilks Lambda = .947, $F(5,304)=3.395, p=.005$). Following non-significant Levene's tests a battery of five univariate F tests were undertaken to assess the association between gender and personality. For three of the five personality traits, agreeableness ($F(1,308)=6.309, p=.013$), conscientiousness ($F(1,308)=8.458, p=.004$), and emotional stability ($F(1,308)=9.624, p=.002$), there were significant differences across genders. Significant differences were not noted for extraversion ($F(1,308)=.551, p=.459$) and openness ($F(1,308)=.411, p=.522$). AGE Thus gender and age are potential covariates that will be controlled for in future analysis involving the TIPI.

Research Hypotheses

Hypothesis One: That music preference, as an aspect of social identity, will display a correlation with self-esteem scores.

Social Identity Theory predicts that group membership endows individuals with social identity, and furthermore, that group identification (i.e., *in-groups*) strengthens and maintains self-esteem through ongoing positive evaluations of in-groups. Specifically, we compare our groups with other groups (i.e., *out groups*) and use the outcome of these comparisons to maintain positive social identity and self-esteem through in-group favouritism, out-group derogation, and positive distinction from the out-group (Tarrant, North, and Hargreaves, 2001). In order to collaborate this a correlational analysis was performed between four indices of self-esteem (RSES, self-liking, self-competency, self-attribution) and the Intergroup Difference. No significant correlations were found

between self-liking ($r = -.052, p = .362$), self-competency ($r = -.066, p = .249$), self-esteem ($r = -.051, p = .368$), self-attributes ($r = .030, p = .593$) and IGD.

Hypothesis Two: There will be a relationship between music preference and personality traits.

Regression analyses were performed to establish the association between music preference factors and personality traits. Specifically, a battery of hierarchical multiple linear regression analyses were undertaken after the data were screened for normality, linearity, homoscedasticity, and independence of residuals. One of the five music preference factors was selected as the dependent variable, and two sets of predictor variables used, namely, demographics (**Model 1**: age and gender) and personality (**Model 2**: extraversion, agreeableness, conscientiousness, emotional stability, and openness). To assess whether personality traits explain additional variance values of $R^2_{changed}$ were computed.

Table 12 displays the results of five hierarchical regressions undertaken on each of the five music preference factors. The overall correlations between the dependent variables and linear combinations of the personality traits and demographic variables are low, less than $R=0.3$ in each case (Cohen, 1988). However, for all five regressions, and models nested within, F -tests showed significant differences between R and zero.

For three of the five music preference types the addition of the five personality traits (i.e., Model 2) explained significantly more variability in the dependent variable than Model 1 alone; Intense ($R^2_{changed} = .078, p = .000$), Reflective ($R^2_{changed} = .047, p = .005$), and Energetic ($R^2_{changed} = .052, p = .004$). This was not, however, the case with the Rhythmic ($R^2_{changed} = .020, p = .278$) or Upbeat factors ($R^2_{changed} = .017, p = .370$). As shown in Model 1 (Table 12) age predictors were highly significant ($p < .001$) correlations for the Reflective, Rhythmic and Energetic music preference factors, but was not significantly correlated with the Upbeat factor ($p < .05$). Model 1 also illustrates that gender was also significantly correlated ($p < .001$) with the Intense music preference factor but not correlated ($p < .05$) with the Upbeat factor. Model two shows that when personality traits are added as predictor variables the significance of age does not change for the Reflective, Rhythmic, Upbeat and Energetic music factors. Similarly, it does not change gender's significance for predicting the Upbeat music factor. The addition of these factors does, however, decrease gender's significance in predicting the

Intense music factor. Furthermore, the addition of the personality traits as predictor variables shows extraversion is a predictor ($p < .05$) of both the Intense and Energetic music preference factor. The predictor conscientiousness is significantly correlated ($p < .001$) with the Intense music factor, and the Reflective music factor. Openness is significantly correlated ($p < .001$) with the Reflective factor and significantly correlated ($p < .05$) with the Rhythmic music preference factor.

Table 12: Regression analysis in which music preference factors represent the dependant variable, age and gender the first predictor set, and personality facets are the second predictor set.

Intense Model 1 ($R = 0.206$, $R^2 = 0.042$, $Adj. R^2 = 0.036$, $SE_{EST} = 7.129$)				
Predictors	B	Std Error	β	t
Constant	23.162	2.187	-	10.592**
Age	0.015	0.051	0.017	0.299
Gender	-3.521	0.965	-0.204	-3.648**
Intense Model 2 ($R = 0.346$, $R^2 = 0.120$, $Adj. R^2 = 0.100$, $SE_{EST} = 6.890$)				
Predictors	B	Std Error	β	t
Constant	20.840	3.437	-	6.063**
Age	0.045	0.050	0.049	0.889
Gender	-2.454	0.978	-0.142	-2.510*
Extraversion	0.510	0.161	0.183	3.171*
Agreeableness	-0.301	0.225	-0.078	-1.336
Conscientiousness	-0.584	0.179	-0.187	-3.256**
Emotional Stability	0.169	0.168	0.060	1.005
Openness	0.221	0.200	0.064	1.102
Reflective Model 1 ($R = 0.356$, $R^2 = 0.126$, $Adj. R^2 = 0.121$, $SE_{EST} = 4.459$)				
Predictors	B	Std Error	β	t
Constant	6.996	1.368	-	5.115**
Age	0.207	0.032	0.349	6.537**
Gender	-0.565	0.604	-0.050	-0.936
Reflective Model 2 ($R = 0.417$, $R^2 = 0.174$, $Adj. R^2 = 0.154$, $SE_{EST} = 4.373$)				
Predictors	B	Std Error	β	t
Constant	5.152	2.181	-	2.362*
Age	0.211	0.032	0.355	6.593**
Gender	-0.174	0.620	-0.015	-0.281
Extraversion	-0.115	0.102	-0.063	-1.128
Agreeableness	-0.100	0.143	-0.040	-0.700
Conscientiousness	-0.232	0.114	-0.114	-2.037*
Emotional Stability	0.060	0.107	0.033	0.565
Openness	0.471	0.127	0.208	3.708**

Table 12 continued

Rhythmic Model 1 ($R = 0.196$, $R^2 = 0.038$, $Adj. R^2 = 0.032$, $SE_{EST} = 4.639$)				
Predictors	<i>B</i>	Std Error	β	<i>t</i>
Constant	14.334	1.423	-	10.072**
Age	-0.112	0.033	-0.190	-3.396**
Gender	0.418	0.628	0.037	0.666
Rhythmic Model 2 ($R = 0.241$, $R^2 = 0.058$, $Adj. R^2 = 0.036$, $SE_{EST} = 4.629$)				
Predictors	<i>B</i>	Std Error	β	<i>t</i>
Constant	14.088	2.309	-	6.100**
Age	-0.110	0.034	-0.187	-3.260**
Gender	0.707	0.657	0.063	1.077
Extraversion	-0.155	0.108	-0.085	-1.430
Agreeableness	-0.125	0.151	-0.050	-0.829
Conscientiousness	-0.121	0.121	-0.060	-0.999
Emotional Stability	0.090	0.113	0.049	0.799
Openness	0.262	0.134	0.117	1.951*
Upbeat Model 1 ($R = 0.234$, $R^2 = 0.055$, $Adj. R^2 = 0.048$, $SE_{EST} = 5.106$)				
Predictors	<i>B</i>	Std Error	β	<i>t</i>
Constant	9.861	1.566	-	6.296**
Age	0.112	0.036	0.171	3.080*
Gender	2.124	0.691	0.171	3.073*
Upbeat Model 2 ($R = 0.267$, $R^2 = 0.071$, $Adj. R^2 = 0.050$, $SE_{EST} = 5.103$)				
Predictors	<i>B</i>	Std Error	β	<i>t</i>
Constant	6.001	2.546	-	2.357*
Age	0.101	0.037	0.154	2.700*
Gender	2.168	0.724	0.174	2.994*
Extraversion	-0.047	0.119	-0.023	-0.392
Agreeableness	0.072	0.167	0.026	0.432
Conscientiousness	0.022	0.133	0.010	0.166
Emotional Stability	0.066	0.125	0.032	0.527
Openness	0.282	0.148	0.113	1.900
Energetic Model 1 ($R = 0.226$, $R^2 = 0.051$, $Adj. R^2 = 0.045$, $SE_{EST} = 3.142$)				
Predictors	<i>B</i>	Std Error	β	<i>t</i>
Constant	11.819	0.964	-	12.261**
Age	-0.087	0.022	-0.216	-3.875**
Gender	-0.637	0.425	-0.083	-1.496
Energetic Model 2 ($R = 0.321$, $R^2 = 0.103$, $Adj. R^2 = 0.082$, $SE_{EST} = 3.081$)				
Predictors	<i>B</i>	Std Error	β	<i>t</i>
Constant	8.831	1.537	-	5.746**
Age	-0.085	0.023	-0.210	-3.751**
Gender	-0.351	0.437	-0.046	-0.803
Extraversion	0.213	0.072	0.173	2.964*
Agreeableness	-0.097	0.101	-0.057	-0.960
Conscientiousness	-0.053	0.080	-0.038	-0.654
Emotional Stability	0.099	0.075	0.079	1.316
Openness	0.098	0.089	0.064	1.091

* $p < .05$ ** $p < .001$

From this we can conclude that extraversion explains some of the variability in the Energetic and Intense music preference factor. Conscientiousness explains some of the variance in both Intense and Reflective music preference factors. The personality trait of openness explains some of the variance in the Reflective and Rhythmic music preference factor. As expected, it was also found that age explains some of the variability in the Reflective, Rhythmic, Upbeat and Energetic music preference factor as well as the agreeableness, conscientiousness and emotional stability personality traits.

An additional correlational analysis found a positive relationship between the importance of music to an individual and the personality trait extraversion ($r= 0.212$, $p<.001$), but no significant correlations between importance and the remaining four traits ($p>.05$)

A correlational analysis was also performed to determine whether there was a relationship between a total preference for music and personality traits (see Table 13). Total preference was calculated by summing the preference scores from all music genres. Table 13 shows a significant negative correlation ($p<.001$) between conscientiousness and the amount of genres an individual prefers, meaning that the more genres one likes the less dominant the conscientious personality trait is within them. Alternatively, Table 13 shows that a correlation ($p<.05$) exists between an individual's total preference and both the openness and extraverted personality trait, indicating the more extraverted and/or open to new experiences a person is the more genres they have a preference for.

Hypothesis Three: There will be an association between psychological wellbeing and music preference

Regression analyses were performed to establish the association between music preference factors and psychological wellbeing. A designated music preference factor was selected as the dependant variable, and two sets of predictor variables employed, namely, demographics (**Model 1**: age and gender) and psychological wellbeing factors (**Model 2**: depression, anxiety, stress, and self-esteem). Due to the high correlations amongst the self-esteem scales, and on the basis of tolerance statistics, the RSES was chosen to represent self-esteem and the other indices were rejected from the regression analyses. The RSES was chosen as it is readily available, time efficient and a widely used measure of self-esteem in the literature. Additionally, to assess whether psychological wellbeing explain additional variance values of $R^2_{changed}$ were computed. The outcomes of the regressions undertaken on the five music preference factors are exhibited in Table 14. On the whole correlations between the dependent variables, linear combinations of the psychological wellbeing facets and demographic variables are low, less than $R=0.3$ in each case (Cohen, 1988). Nevertheless, for all five regressions, and models nested within, F -tests showed significant differences between R and zero.

For two of the five music preference types the addition of the psychological wellbeing factors (i.e., Model 2) explained significantly more variability in the dependent variable than Model 1 alone; Intense ($R^2_{\text{changed}} = .034, p = .027$) and Reflective ($R^2_{\text{changed}} = .026, p = .058$). This was not, however the case with the Upbeat ($R^2_{\text{changed}} = .010, p = .536$), Rhythmic ($R^2_{\text{changed}} = .007, p = .712$) or Energetic factors ($R^2_{\text{changed}} = .020, p = .166$). As shown in Model 1 (see Table 14), age was a highly significant ($p < .001$) predictor for Reflective, Rhythmic and Energetic music preference factors, but not the Upbeat factor ($p < .05$). Table 14, displays the regression analyses performed to establish the effect of the psychological wellbeing measures: depression, anxiety, stress and self-esteem on the music preference factor variables: Intense, Reflective, Rhythmic, Upbeat and Energetic. It is observable within Model 1 of Table 14 that a significant correlation ($p < .001$) is found between gender and intensity, as well as between age and the Reflective, Rhythmic and Energetic music preference factors. Significant correlations ($p < .05$) are also detected between the Upbeat music preference factor and both gender and age. Additionally it was found that a relationship was present between anxiety ($\beta = -.154, p < .05$), self-esteem ($\beta = .154, p < .05$), and stress ($\beta = .205, p < .05$) and the Intense music preference factor, as well as a relationship between anxiety ($\beta = .148, p < .05$) and self-esteem ($\beta = .133, p < .05$) and the Reflective music preference factor. Thus, from these analyses it can be concluded that anxiety explains some of the variance in both the Intense and Reflective music preference factor, stress explains some of the variance in the Intense music preference factor, and self-esteem explains some of the variability in the Intense and Reflective music preference factor.

Table 13: Pearson Correlation between total music preference and personality traits.

	Extraversion	Agreeableness	Conscientiousness	Emotional Stability	Openness
Total Preference	0.117*	-0.034	-0.196**	0.096	0.144*

Table 14: Regression analysis where music preference factors are the dependant variable, age and gender are the first predictor set, and the aspects of wellbeing are the second predictor set.

Intense Model 1 ($R = 0.206, R^2 = 0.042, Adj. R^2 = 0.036, SE_{EST} = 7.129$)				
Predictors	B	Std Error	β	t
Constant	23.162	2.187	-	10.592**
Age	0.015	0.051	0.017	0.299
Gender	-3.521	0.965	-0.204	-3.648**
Intense Model 2 ($R = 0.276, R^2 = 0.076, Adj. R^2 = 0.058, SE_{EST} = 7.047$)				
Predictors	B	Std Error	β	t
Constant	17.807	3.516	-	5.065**
Age	-0.027	0.052	-0.030	-0.525
Gender	-3.382	0.997	-0.196	-3.392**
Depression	0.031	0.069	0.037	0.457
Anxiety	-0.157	0.079	-0.154	-1.992*
Stress	0.165	0.064	0.205	2.567*
Self-esteem	0.175	0.081	0.154	2.157*
Reflective Model 1 ($R = 0.356, R^2 = 0.126, Adj. R^2 = 0.121, SE_{EST} = 4.459$)				
Predictors	B	Std Error	β	t
Constant	6.996	1.368	-	5.115**
Age	0.207	0.032	0.349	6.537**
Gender	-0.565	0.604	-0.050	-0.936
Reflective Model 2 ($R = 0.390, R^2 = 0.152, Adj. R^2 = 0.135, SE_{EST} = 4.422$)				
Predictors	B	Std Error	β	t
Constant	3.285	2.206	-	1.489
Age	0.207	0.033	0.347	6.333**
Gender	-0.476	0.626	-0.042	-0.762
Depression	-0.023	0.043	-0.042	-0.534
Anxiety	0.099	0.049	0.148	1.991*
Stress	0.016	0.040	0.031	0.406
Self-esteem	0.100	0.051	0.133	1.952*
Rhythmic Model 1 ($R = 0.196, R^2 = 0.038, Adj. R^2 = 0.032, SE_{EST} = 4.639$)				
Predictors	B	Std Error	β	t
Constant	14.334	1.423	-	10.072**
Age	-0.112	0.033	-0.190	-3.396**
Gender	0.418	0.628	0.037	0.666
Rhythmic Model 2 ($R = 0.212, R^2 = 0.045, Adj. R^2 = 0.026, SE_{EST} = 4.653$)				
Predictors	B	Std Error	β	t
Constant	12.126	2.321	-	5.224**
Age	-0.114	0.034	-0.194	-3.330**
Gender	0.653	0.658	0.058	0.991
Depression	0.032	0.045	0.059	0.706
Anxiety	0.022	0.052	0.033	0.421
Stress	-0.028	0.042	-0.054	-0.661
Self-esteem	0.064	0.054	0.087	1.197
Upbeat Model 1 ($R = 0.234, R^2 = 0.055, Adj. R^2 = 0.048, SE_{EST} = 5.106$)				
Predictors	B	Std Error	β	t
Constant	9.861	1.566	-	6.296**
Age	0.112	0.036	0.171	3.080*
Gender	2.124	0.691	0.171	3.073*

Table 14 continued

Upbeat Model 2 ($R = 0.254$, $R^2 = 0.064$, $Adj. R^2 = 0.046$, $SE_{EST} = 5.113$)				
Predictors	B	Std Error	β	t
Constant	9.647	2.551	-	3.782**
Age	0.117	0.038	0.179	3.103*
Gender	2.308	0.723	0.185	3.190*
Depression	-0.039	0.050	-0.065	-0.786
Anxiety	0.069	0.057	0.094	1.209
Stress	-0.047	0.047	-0.082	-1.016
Self-esteem	0.008	0.059	0.010	0.133
Energetic Model 1 ($R = 0.226$, $R^2 = 0.051$, $Adj. R^2 = 0.045$, $SE_{EST} = 3.142$)				
Predictors	B	Std Error	β	t
Constant	11.819	0.964	-	12.261**
Age	-0.087	0.022	-0.216	-3.875**
Gender	-0.637	0.425	-0.083	-1.496
Energetic Model 2 ($R = 0.267$, $R^2 = 0.071$, $Adj. R^2 = 0.053$, $SE_{EST} = 3.130$)				
Predictors	B	Std Error	β	t
Constant	10.582	1.561	-	6.778**
Age	-0.091	0.023	-0.226	-3.942**
Gender	-0.489	0.443	-0.064	-1.104
Depression	-0.044	0.031	-0.117	-1.431
Anxiety	0.036	0.035	0.080	1.033
Stress	0.003	0.029	0.009	0.118
Self-esteem	0.041	0.036	0.081	1.138

* $p < .05$, ** $p < .001$

Total music preference and psychological wellbeing variables

A correlational analysis (see Appendix G) was performed to ascertain whether there was a correlation between a total preference for music and the psychological wellbeing variables: depression, anxiety, stress, self-esteem, self-attributes, self-liking and self-competency. Examination of this analysis reveals a significant correlation ($p < .001$) between self-attributes and total music preference., as well as a correlation ($p < .05$) between total music preference and self-esteem. This would indicate that those who like a range of music genres have high levels of self-attributes and self-esteem, particularly in regards to self-liking and the positive aspect of the dichotomy.

Lastly, a t -test was performed to ascertain whether there was a relationship between the psychological wellbeing dimensions: depression, anxiety, stress and self-esteem and whether an individual listens to music when they are sad/unhappy/down (see Table 15). Table 15 illustrates that there is a significant difference between those with low levels of anxiety ($t = -2.027$, $p = .05$) and stress ($t = -2.793$, $p = .05$) do not listen to music when an sad/unhappy/down.

Table 15: Independent samples *t*-test in which whether an individual listens to music when sad/unhappy/down has a relationship with the psychological wellbeing factors depression, anxiety, stress and self-esteem.

		Depression	Anxiety	Stress	Self-esteem
<i>M</i>	Sad	9.60 (<i>SD</i> 8.84)	8.78 (<i>SD</i> 7.35)	14.84 (<i>SD</i> 9.41)	27.33 (<i>SD</i> 6.49)
	Not Sad	7.40 (<i>SD</i> 7.53)	6.83 (<i>SD</i> 6.10)	11.46 (<i>SD</i> 6.90)	27.83 (<i>SD</i> 5.97)
<i>t</i>		-1.89	-2.03*	-2.793*	0.57

Discussion

There were three hypotheses tested within this research: that music preference, as an aspect of social identity, would display a correlation with self-esteem scores; a relationship between personality and music preference is present; and that there is a correlation between psychological wellbeing and music preference.

Social Identity Theory

This research found no evidence of a correlation between intergroup music differences, and self-esteem within this New Zealand population. Given the research previously dedicated to this relationship (e.g., Noel et al., 1995; North & Hargreaves, 1999; Leary & Baumeister, 2000) it was anticipated that a statistically significant relationship between these variables would be found. The finding of a deficiency of a relationship however, is consistent with some past research (Abrams & Hogg, 1988; Zillmann et al., 1995) that has challenged this assumed connection. It has been indicated by past research that the members of the 'out'/stigmatised group generally do not have a decreased level of self-esteem, as these individuals successfully employ various strategies to protect a positive level of self-esteem. Crocker and Major (1989) opine that these strategies include ascription of the negative feedback to prejudice against their group, comparing performances with those of in-group members as opposed to with those of comparatively advantaged out-group members, and discriminatorily devaluing traits and accomplishments on which their group performs poorly and appreciating traits and triumphs on which their group excels.

Relationship between music preference and personality

There is a multitude of studies (e.g., McCown et al., 1997; Pearson & Dollinger, 2004; Zweigenhaft, 2008) professing a relationship between music preference and personality traits, which this current study confirms. However, much of the past research disagrees on which personality traits correlate with which musical preference.

Music Preference and Conscientiousness

In the current study it was found that conscientiousness displayed a negative relationship with the intense music preference factor, which corresponds with the past research findings of Delsing et al. (2008). It has been suggested that this negative correlation is due to the 'will to achieve' common amongst individuals with high conscientiousness scores, that may not be present in fans of the intense music factor (Delsing et al., 2008). Similarly, this current research's finding of a positive relationship between conscientiousness and the reflective music preference factor was also found by Delsing et al. (2008). Conversely, past research has found a relationship between conscientiousness and the upbeat music (Rentfrow & Gosling, 2003), as well as a relationship between this personality trait and both the rhythmic and energetic music genres (Zweigenhaft, 2008) However, it should be noted that the past research (e.g.: Delsing et al., 2008) had some different genres and factors so these discrepancies should be noted with caution. Additionally, this present study found that the more variety of genres an individual enjoys the lower they score on the conscientiousness trait. This could be accounted for by the rigid organisation and perpetuance for order characteristics common amongst those who score high on this trait, thus these individuals may be very specific on the types of music they like and do not tend to expand beyond these.

Music Preference and Extraversion

This current study found a relationship between the personality trait extraversion and the intense music preference factor, which is consistent with some past research (e.g., McCown et al., 1997) but contrasts with others (e.g., Baker & Bor, 2008; North et al., 2005). Given that extraversion is believed to influence emotion and many of the genres within the intense music preference factor arguably have angry themes within them, this correlation seems logical. Correspondingly, this study found a relationship amid the extraversion personality trait and the energy music preference factor, which is well supported by past research (Delsing et al., 2008; McCown et al., 1997; Rentfrow & Gosling, 2003; Zweigenhaft, 2008). This finding is logical as the genres within the energetic factor correspond well with an extraverts desire to socialise and enjoy themselves. Additionally, energetic genres are commonly played at parties, night clubs and social gatherings, locations frequented by extraverts. However, the current study found no significant relationship existed between this personality trait and either the

rhythmic or upbeat music preference factor, which diverges from past research (e.g., Baker & Bor, 2008; Delsing et al., 2008; McCown et al., 1997; North et al., 2005; Rentfrow & Gosling, 2003; Zweigenhaft, 2008), especially in regards to the rhythmic preference factor. Pearson and Dollinger (2004) found that those with a broad music preference are more likely to be extraverted which coincides with the results found within this current study.

Music Preference and Openness

A considerable amount of past research has indicated the presence of a relationship between the openness personality trait and a preference for reflective music (Delsing et al., 2008; Dollinger, 1993; Rawlings & Ciancarelli, 1997; Rentfrow & Gosling, 2003; Zweigenhaft, 2008), corresponding to the findings found within the current study. Additionally, past research (e.g., Delsing et al., 2008; Dollinger, 1993; Rawlings & Ciancarelli, 1997; Zweigenhaft, 2008) has identified a relationship between the openness personality trait and a preference for the rhythmic music factor, which was also found within this current study. There has been considerable research stating a relationship exists between the openness personality trait and both the intense and energetic music preference factors (Delsing et al., 2008; Dollinger, 1993; Rawlings & Ciancarelli, 1997; Rentfrow & Gosling, 2003; Zweigenhaft, 2008), yet this was not observed within this current study. The reasoning for this could possibly be due to the difference in genres included under each factor or a result of cultural differences. A correlation between a preference for a wide range of genres and the openness personality trait was found within this current study, as well as in Rawlings and Ciancarelli's (1997) study.

Music Preference, Agreeableness and Emotional Stability

Past research suggests a relationship is present between the agreeableness personality trait and the reflective (Delsing et al., 2008; Zweigenhaft, 2008), rhythmic (Delsing et al., 2008; Rentfrow & Gosling, 2003; Zweigenhaft, 2008), and upbeat (Delsing et al., 2008; Rentfrow & Gosling, 2003; Zweigenhaft, 2008) music preference factors, yet no correlation was found within this present study. Again, this could be accounted for by the difference between the genre placing and culture within this research and past research. Similarly, there has been a study linking the emotional stability personality trait and the reflective music factor (Delsing et al., 2008), however, no significant

relationship was found within this present study. This could reinforce the notion that music is used as a coping mechanism as those who score high on emotional stability are believed to be even tempered and not the type to let things get to them; therefore they may not need music to cope with emotions.

The incongruity within the research between music preference and personality traits may suggest that instead it is the sub-culture that surrounds the genre that influences which personality traits are exhibited. For example, if Metal is accepted within a society then those with a preference for this genre might be extraverted, but if having a preference for this genres results in stigmatization or ostracism, then those who have a preference for this genre might be more introverted so not to attract unnecessary attention and thus stigmatization towards themselves.

Correlation between psychological wellbeing and music preference

This current research found that the intense music factor is linked with increased stress and decreased anxiety, and that the reflective music factor is linked with increased anxiety, which has not been found within other research. The link between decreased anxiety and the intense factor could be explained by the previous research linking music and coping (e.g., Ballard & Coates, 1995; North et al., 2004), thus individuals with a preference for the intense factor have decreased anxiety as they have an outlet for which to express their anxiety. It is, however, interesting that no correlation was found between the rhythmic music factor and anxiety and self-esteem seeing as past research has indicated a relationship is present (e.g., Mineka et al., 1998). The link between stress and the intense music preference factor could be indicative that those with a preference for this type of music are more susceptible to stress, though this may be indicative of a question of the direction of the causality (e.g., does increased stress lead individuals to listen to music within the intense factor or does listening to intense music cause stress?). The link between the reflective music factor and anxiety goes against past research (e.g., McCraty et al., 1998), which found that those with a preference for the genres within this factor had lower levels of anxiety.

The current research also found a correlation between self-esteem and the reflective music preference factor, which correlates with findings by North (n.d.) that those who

prefer genres within this factor have high levels of self-esteem (BBC News, 2008). This research also found a correlation between the intense music factor and increased levels of self-esteem. This contradicts North's (n.d.) research, which found a preference for the genres within the intense music factor to be correlated with low self-esteem (BBC News, 2008), as well as Ballard and Coates' (1995) research, which found no relationship between genres within the intense factor and self-esteem. However, the correlation between self-esteem and both the intense and reflective factors links with personality research in which a relationship between self-esteem and the personality traits extraversion and conscientiousness was found (Mar et al., 2006). Since conscientiousness linked highly with the reflective factor and extraversion linked highly with the intense factor it is the findings that these music factors link with self-esteem is supported.

Past research has found relationships between self-esteem and both the upbeat (e.g., North, n.d. as cited in BBC News, 2008) and rhythmic (e.g., Rubin et al., 2001) music factors, which was not found within the current study. A possible rationale for this could be due to the difference in demographics between these studies and the current study. Previous research (e.g., Martin et al., 1993) has also cited a relationship between depression and the intense music factor, yet in accordance with Lester and Whipples's (1996) research produced no correlation between levels of depression and any of the music preference factors in this current study.

A relationship with a wide range of music preferences and self-esteem, self-attributes, and the liking and positive aspects of the Rosenberg self-esteem scale was observed within this study. This, however, contradicts Campbell (1990) who has argued that those with low self-esteem have less stable self-concepts. Thus suggesting that those who fail to prescribe (or prefer) a specific genre of music are likely to have low self-esteem. It is possible that those in this current study were found to have increased levels on these psychological wellbeing facets because they use the various types of music they enjoy to control their emotions and moods, and given the almost 20 year difference between the current study and Campbell's (1990) findings it is possible that the difference stated is better explained by the increase in technology, and therefore access to music, and less about the individuals level of self-esteem and vast music preference.

A difference was also established between measures of anxiety and stress and those who do not listen to specific songs or types of music when they are sad/down/upset. There is nothing in the literature that touches on this *per se*, though given all the past research on music preference and coping this finding is not surprising. If someone has low levels of anxiety or stress they will not need music to cope therefore their preference of music is likely based on other factors.

In conclusion, this research has indicated that even within a fairly homogeneous sample the reasons people listen to music is likely to be multifaceted and difficult to determine concretely. Given the small R^2 – values found within this study it is possible that if a non – student population was sampled greater correlations could be found. However, it is still probable that the reasons for individual's music preference include more facets (e.g., sub-culture, media influence, repetition of certain songs causing 'brainworms', peer influence, exposure) than those examined within this study.

Limitations

There were several limitations within the construction of this study. First, the sample obtained was fairly homogenous as all participants were university students enrolled in a first year health paper. Different results may have been obtained if the sample had included participants of the same age range but not currently in university or those majoring in something other than health. Second, the grouping of the music into discrete, uni-dimensional genres can be seen as a possible limitation, as many modern artists can fall into multiple genres. This begs the question of whether music genres still exist as independent categories or if concrete genres no longer exist. An example of this would be the artist Britney Spears who could easily be placed into either the 'pop' or 'dance' genres. Although it was felt this was a necessity for the success of the study, it may have been problematic, since as discussed, many artists fit into several genres so the inclusion and placing of the artists may affect the results.

There was also some limitation with using a shortened personality inventory as there is research suggesting individuals illustrate substantial within-individual variability in their distributions of personality states (Heller, Komar, Lee, 2007). Thus depending on the situation a person can fluctuate between the two poles or may score high on both

poles. Additionally, because each question on the TIPI has describes two characteristics (e.g., *dependable* and *self-disciplined*) it is possible that an individual may see themselves as dependable they may not see themselves as self-disciplined. Additionally, a short measure for personality cannot measure individual facets (Gosling et al., 2003) so only a broad idea of an individual's personality can be observed.

Furthermore, it has been suggested by Sheldon & Hoon (2007) that subjective wellbeing is hierarchical containing six levels, however, this research only examined two of these six levels. Therefore, to gain a full understanding of music preference and wellbeing it would have been beneficial to include all levels of this hierarchy. Additionally, it would have been beneficial to have examined the contingencies in which self-esteem and self-worth are based, however, due to research constraints this was not able to have been done.

Future Research

Any future research conducted on this subject should involve a less homogenous sample. Future research could also study whether participants agree with the placement of genres under each factor heading, although as this is obviously subjective, it may be better investigated through qualitative methods.

There were several studies (e.g., Stack, 2000; Stack, 2002; Stack & Gundlach, 1992; Stack et al., 1994) that suggested it is the sub-culture a music genre creates that affects the individuals, rather than the music itself. More research focusing specifically on the different sub-cultures would be beneficial and may lead to useful insight into how these sub-cultures affect behaviour and attitudes. It would also be constructive to examine the differences between members of various sub-cultures and what aspects of each sub-culture create the differences. Additional enquiry into why people enjoy each genre, would also be valuable. For example, if an individual has a preference for Golden Oldies because it reminds them of their recently deceased mother, then the drive behind this preference may be related to certain memories, which may in turn, be related to different mood states.

Conclusion

In summary, this study has evaluated research on music preference, social identity theory, psychological wellbeing and personality within a single sample. Within the related literature correlations have been found between each therefore it was of interest as to whether these correlations would be present within a New Zealand population. No correlation was found between music preference, as an aspect of social identity, and self-esteem, which is possibly due to strategies employed by the 'out-group' to protect their self-esteem. There was evidence of some relationship between personality and music preference factors (e.g., high conscientiousness and the reflective factor, low conscientiousness and the intense factor, high extraversion and the intense and energetic factors, high openness and the reflective and rhythmic music factor) but not between the others. Additionally, a relationship was found between some music factors and some facets of psychological wellbeing (e.g., intense and stress, self-esteem, and low anxiety; Reflective and anxiety and self-esteem) but not others. Moreover, it was observed that a wide range of music preferences correlate positively with self-esteem, self-attributes, and the liking and positive aspects of the RSES, and that those with a low level of anxiety and stress do not listen to specific genres when sad. The findings suggest that there are multiple reasons why people listen to the music they do, and that these reasons require further intensive research.

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- **completion of the survey.**

Music Preference Test:

Please rate on the continuum whether you like each music genre from not at all (1) to very much (7)

Hip-Hop (e.g. Black Eyed Peas, Missy Elliot, Chris Brown):

1 2 3 4 5 6 7

Rap (e.g. 50 Cent, Eminem, Tupac):

1 2 3 4 5 6 7

R& B (e.g. Alicia Keys, Usher, Destiny's Child):

1 2 3 4 5 6 7

Rock (e.g. Nickleback, INXS, Guns n' Roses):

1 2 3 4 5 6 7

Dance (e.g. Chemical Brothers , Basement Jaxx, Ministry of Sound):

1 2 3 4 5 6 7

Jazz (e.g. Miles Davis, Billie Holiday, Michael Buble):

1 2 3 4 5 6 7

Blues (e.g. B.B. King, Ray Charles, Joss Stone):

1 2 3 4 5 6 7

Drum and Bass (e.g. Concord Dawn, Shape Shifter, Pendulum):

1 2 3 4 5 6 7

Reggae (e.g. Bob Marley, Shaggy, Fat Freddy's Drop):

1 2 3 4 5 6 7

Classical (Mozart, Charlotte Church, Hayley Westenra):

1 2 3 4 5 6 7

Pop (e.g. James Blunt, Coldplay, Britney Spears):

1 2 3 4 5 6 7

Punk (e.g. Blink 182, Greenday, Bleeders):

1 2 3 4 5 6 7

Ska (e.g. Reel Big Fish, Cherry Poppin' Daddies, WBC):

1 2 3 4 5 6 7

Metal (e.g. Metallica, Korn, System of a Down):

1 2 3 4 5 6 7

Grunge (e.g. Nirvana, Sound Garden, Audioslave):

1 2 3 4 5 6 7

Country (e.g. Shania Twain, Garth Brooks, Dixie Chicks):

1 2 3 4 5 6 7

Golden Oldies (e.g. Elvis, Beatles, ABBA):

1 2 3 4 5 6 7

Disco (e.g. Bee Gees, Donna Summers, Sly and the Family Stone):

1 2 3 4 5 6 7

Appendix B:



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TIPI

Here are a number of personality traits that may or may not apply to you. Please circle to indicate the extent to which *you agree or disagree with that statement*. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other.

I see myself as:

1. Extraverted, enthusiastic

<u>Disagree strongly</u>	Disagree moderately	Disagree a little	Neither agree or disagree	Agree a little	Agree moderately	Agree strongly
1	2	3	4	5	6	7

2. Critical, quarrelsome

<u>Disagree strongly</u>	Disagree moderately	Disagree a little	Neither agree or disagree	Agree a little	Agree moderately	Agree strongly
1	2	3	4	5	6	7

3. Dependable, self-disciplined

<u>Disagree strongly</u>	Disagree moderately	Disagree a little	Neither agree or disagree	Agree a little	Agree moderately	Agree strongly
1	2	3	4	5	6	7

4. Anxious, easily upset

<u>Disagree strongly</u>	Disagree moderately	Disagree a little	Neither agree or disagree	Agree a little	Agree moderately	Agree strongly
1	2	3	4	5	6	7

5. Open to new experiences, complex

<u>Disagree strongly</u>	Disagree moderately	Disagree a little	Neither agree or disagree	Agree a little	Agree moderately	Agree strongly
1	2	3	4	5	6	7

6. Reserved, quiet

<u>Disagree strongly</u>	Disagree moderately	Disagree a little	Neither agree or disagree	Agree a little	Agree moderately	Agree strongly
1	2	3	4	5	6	7

7. Sympathetic, warm

<u>Disagree strongly</u>	Disagree moderately	Disagree a little	Neither agree or disagree	Agree a little	Agree moderately	Agree strongly
1	2	3	4	5	6	7

8. Disorganised, careless

<u>Disagree strongly</u>	Disagree moderately	Disagree a little	Neither agree or disagree	Agree a little	Agree moderately	Agree strongly
1	2	3	4	5	6	7

9. Calm, emotionally stable

<u>Disagree strongly</u>	Disagree moderately	Disagree a little	Neither agree or disagree	Agree a little	Agree moderately	Agree strongly
1	2	3	4	5	6	7

10. Conventional, uncreative

<u>Disagree strongly</u>	Disagree moderately	Disagree a little	Neither agree or disagree	Agree a little	Agree moderately	Agree strongly
1	2	3	4	5	6	7

Appendix C:



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ROSENBERG QUESTIONNAIRE

- 1) I feel I am a person of worth, at least on an equal plane with others.
 - 1 ___ Strongly Agree
 - 2 ___ Agree
 - 3 ___ Disagree
 - 4 ___ Strongly Disagree

- 2) I feel that I have a number of good qualities.
 - 1 ___ Strongly Agree
 - 2 ___ Agree
 - 3 ___ Disagree
 - 4 ___ Strongly Disagree

- 3) All in all, I am inclined to feel that I am a failure.
 - 1 ___ Strongly Agree
 - 2 ___ Agree
 - 3 ___ Disagree
 - 4 ___ Strongly Disagree

- 4) I am able to do things as well as most other people.
 - 1 ___ Strongly Agree
 - 2 ___ Agree
 - 3 ___ Disagree
 - 4 ___ Strongly Disagree

- 5) I feel I do not have much to be proud of.
1 ___ Strongly Agree
2 ___ Agree
3 ___ Disagree
4 ___ Strongly Disagree
- 6) I take a positive attitude towards myself.
1 ___ Strongly Agree
2 ___ Agree
3 ___ Disagree
4 ___ Strongly Disagree
- 7) On the whole, I am satisfied with myself.
1 ___ Strongly Agree
2 ___ Agree
3 ___ Disagree
4 ___ Strongly Disagree
- 8) I wish I could have more respect for myself.
1 ___ Strongly Agree
2 ___ Agree
3 ___ Disagree
4 ___ Strongly Disagree
- 9) I certainly feel useless at times.
1 ___ Strongly Agree
2 ___ Agree
3 ___ Disagree
4 ___ Strongly Disagree
- 10) At times I think I'm no good at all.
1 ___ Strongly Agree
2 ___ Agree
3 ___ Disagree
4 ___ Strongly Disagree

NOTE: If, after completing this survey, you feel that you would benefit from discussing any issues that may arise from it, we encourage you to contact the AUT Health and Counselling Centre. You can ring them at 921.9999, extension 9998 (Akoranga) or 9992 (Wellesley).

Appendix D:



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- **completion of the survey.**

SLCS-R

1. I tend to devalue myself

Strongly Disagree Disagree Neutral Agree Strongly Agree

2. I am highly effective at the things I do

Strongly Disagree Disagree Neutral Agree Strongly Agree

3. I am very comfortable with myself

Strongly Disagree Disagree Neutral Agree Strongly Agree

4. I am almost always able to accomplish what I try for

Strongly Disagree Disagree Neutral Agree Strongly Agree

5. I am secure in my sense of self-worth

Strongly Disagree Disagree Neutral Agree Strongly Agree

6. It is sometimes unpleasant for me to think about myself

Strongly Disagree Disagree Neutral Agree Strongly Agree

7. I have negative attitudes towards myself

Strongly Disagree Disagree Neutral Agree Strongly Agree

8. At times, I find it difficult to achieve the things that are important to me

Strongly Disagree Disagree Neutral Agree Strongly Agree

9. I feel great about who I am

Strongly Disagree Disagree Neutral Agree Strongly Agree

10. I sometimes deal poorly with challenges

Strongly Disagree Disagree Neutral Agree Strongly Agree

11. I never doubt my personal worth

Strongly Disagree Disagree Neutral Agree Strongly Agree

12. I perform very well at many things

Strongly Disagree Disagree Neutral Agree Strongly Agree

13. I sometimes fail to fulfil my goal

Strongly Disagree Disagree Neutral Agree Strongly Agree

14. I am very talented

Strongly Disagree Disagree Neutral Agree Strongly Agree

15. I do not have enough respect for myself

Strongly Disagree Disagree Neutral Agree Strongly Agree

16. I wish I were more skilled in my activities

Strongly Disagree Disagree Neutral Agree Strongly Agree

Appendix E:



- **By completing and returning the questionnaire below, you are expressing your consent to participate in this study.**
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- **completion of the survey.**

SAQ

This questionnaire has to do with your attitudes about some of your activities and abilities. For the first ten times below, you should rate yourself relative to other college students your own age by using the following scale:

A Bottom 5%	B Lower 10%	C Lower 20%	D Lower 30%	E Lower 50%	F Upper 50%	G Upper 30%	H Upper 20%	I Upper 10%	J Top 5%
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-----------------------

An example of the way the scale works is as follows: if one of the traits that follows were “height”, a woman who is just below average in height would choose “E” for this question, whereas a woman who is taller than 80% (but not taller than 90%) of her female classmates would mark “H”, indicating that she is in the top 20% on this dimension.

1.intellectual/academic ability

A	B	C	D	E	F	G	H	I	J
---	---	---	---	---	---	---	---	---	---

2.social skills/social competence

A	B	C	D	E	F	G	H	I	J
---	---	---	---	---	---	---	---	---	---

3. artistic and/or musical ability

A	B	C	D	E	F	G	H	I	J
---	---	---	---	---	---	---	---	---	---

4. athletic ability

A	B	C	D	E	F	G	H	I	J
---	---	---	---	---	---	---	---	---	---

5. physical attractiveness

A	B	C	D	E	F	G	H	I	J
---	---	---	---	---	---	---	---	---	---

6. leadership ability

A	B	C	D	E	F	G	H	I	J
---	---	---	---	---	---	---	---	---	---

7. common sense

A	B	C	D	E	F	G	H	I	J
---	---	---	---	---	---	---	---	---	---

8. emotional stability

A	B	C	D	E	F	G	H	I	J
---	---	---	---	---	---	---	---	---	---

9. sense of humour

A	B	C	D	E	F	G	H	I	J
---	---	---	---	---	---	---	---	---	---

10. discipline

A	B	C	D	E	F	G	H	I	J
---	---	---	---	---	---	---	---	---	---

Now rate how certain you are of your standing on each of the above traits (you may choose any letter):

A	B	C	D	E	F	G	H	I
not at all certain			moderately certain					extremely certain

Now rate yourself relative to your "ideal" self -- the person you would be if you were exactly the way you would like to be:

A	B	C	D	E	F	G	H	I
very short of my ideal self			somewhat like and somewhat unlike my ideal self					very much like my ideal self

Appendix F:



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- **completion of the survey.**

DASS₂₁

Name:

Date:

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

- 0 Did not apply to me at all
- 1 Applied to me to some degree, or some of the time
- 2 Applied to me to a considerable degree, or a good part of time
- 3 Applied to me very much, or most of the time

1	I found it hard to wind down	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3

5	I found it difficult to work up the initiative to do things	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I experienced trembling (eg, in the hands)	0	1	2	3
8	I felt that I was using a lot of nervous energy	0	1	2	3
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting agitated	0	1	2	3
12	I found it difficult to relax	0	1	2	3
13	I felt down-hearted and blue	0	1	2	3
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15	I felt I was close to panic	0	1	2	3
16	I was unable to become enthusiastic about anything	0	1	2	3
17	I felt I wasn't worth much as a person	0	1	2	3
18	I felt that I was rather touchy	0	1	2	3
19	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life was meaningless	0	1	2	3

Appendix G:

	Depression	Anxiety	Stress	Self-esteem	Self-attributes	Self-Liking	Self-Competency	Self-esteem-liking	Self-esteem-competency	Self-esteem-positive	Self-esteem-negative
Total Preference	-0.058	0.023	0.000	0.119*	0.200**	0.100	0.051	0.133*	0.107	0.145*	0.104
Depression	-	0.597**	0.614**	-0.589	-0.197**	-0.496**	-0.377**	-0.549**	-0.523**	-0.469**	-0.579**
Anxiety	0.597**	-	0.638**	-0.408**	-0.122*	-0.324**	-0.321**	-0.391**	-0.367**	-0.297**	-0.436**
Stress	0.614**	0.638**	-	-0.467**	-0.128*	-0.487**	-0.365**	-0.497**	-0.345**	-0.389**	-0.460**
Self - esteem	-0.589**	-0.408**	-0.467**	-	0.358**	0.831**	0.629**	0.922**	0.892**	0.870**	0.922**
Self - attributes	-0.197**	-0.122*	-0.128*	0.358**	-	0.284**	0.419**	0.286	0.371**	0.325**	0.313**
Self-Liking	-0.496**	-0.324**	-0.487**	0.831**	0.284**	-	0.579**	0.839**	0.675**	0.724**	0.791**
Self-Competency	-0.377**	-0.321**	-0.365**	0.629**	0.419**	0.579**	-	0.565**	0.593**	0.550**	0.585**
Self-esteem-liking	-0.549**	-0.391**	-0.497**	0.922**	0.286**	0.839**	0.565**	-	0.710**	0.790**	0.930**
Self-esteem-competency	-0.523**	-0.367**	-0.345**	0.892**	0.371**	0.675**	0.593**	0.710**	-	0.866**	0.789**
Self-esteem-positive	-0.469**	-0.297**	-0.389**	0.870**	0.325**	0.724**	0.550**	0.790**	0.866**	-	0.674**
Self-esteem-negative	-0.579**	-0.436**	-0.460**	0.922**	0.313**	0.791**	0.585**	0.930**	0.789**	0.674**	-