Examining the Relationship between Music Preference and Personality Type.

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ABSTRACT

There is a growing amount of research demonstrating a relationship between music preference and personality, The aim of the current research is to extend the previous findings for the first time to an Irish Sample. This study also examined the effect of age on the relationship between music preference and personality type. This study of 109 participants living in Ireland, used the Short Test of Musical Preferences as designed by Rentfrow and Gosling(2003), to assess the kinds of music participants preferred, and the Big Five Inventory to examine individuals personality structures. The sample was made up of a convenience sample of psychology students attending Dublin Business School, and other participants who completed the survey online. The results of this study indicated that there is a correlation between some music preference factors (Reflective/complex, Intense/Rebellious, Energetic and Rhythmic) and some personality traits (Openness, Extraversion), which generally confirmed previous research. The effects of age were inconclusive.

CHAPTER ONE: INTRODUCTION

Music has existed in some form since the beginning of history and is evident in nearly all cultures across the world (Brown, 2008, p. 8). People seem to be innately predisposed to react to music and it is used by people of all ages for all sorts of purposes. For most people, music is part of everyday life, they hear it at work, while driving, in social situations, in TV and movies, and for many people it is a hobby and they actively go out of their way to hear music and go to concerts. Seeing that music has existed for so long and is used so extensively by so many people in everyday situations, it is hard to believe how understudied it has been in the field of Psychology (Chamorro-Premuzic & Furnham, 2007; Rentfrow & Gosling, 2003,). Some Psychologists in recent years have begun to realize its potential in providing valuable insights into human behaviour. Rentfrow and Gosling(2003) stated that , "an activity that consumes so much time and resources and that is a key component of so many social situations warrants the attention of mainstream social and personality psychologists''(p. 1236).

The definition of music has long been a debate of philosophers, musicians, sociologist and scientists. It is hard to define something that has so many uses, forms and meanings. In his book Music as heard: a study in applied phenomenology, Thomas Clifton defines music as and ordered arrangement of sounds and silences whose meaning is presentative rather than denotative (p. 10).

Research has shown that not only does music serve useful functions for people such

as emotional regulation(Zentner, Granjean, Scherer, 2008; Larsen & Stastny, 2011; Juslin, Lilgestrom, Vastfjall, Barradas, Silva, 2008), inducing moods(Hunter, Schellenberg, Griffith, 2011) relaxion(de Niet, Tiemens, Lendemeijer, Hutschemaekers, 2009; Nilsson, 2009; Burns, Labbe, Williams, McCall 1999), evoking memories(Barret, Grimm, Robins, Wildschut. Sedikides, Janata, 2010; Eschrich, Munte, Altenmuller, 2008; Janata, Tomic, Rakowski, 2007) self expression and as a form of social identity (North & Hargreaves, 1999)

Rentfrow and Gosling(2003), found that not only is music one of the most frequently occurring activities that people engage in, but people consider it important to them, not only as a hobby, but as a pertinent insight into their own personalities). They had their participants fill out questionnaires relating to their attitudes and beliefs about their various lifestyle and leisure activities. The results indicated that most people considered music along with hobbies their most important activity, ranking higher than food preference, movies, books, magazines, TV programmes and clothes choice. The majority of participants also believed their music preference to reveal as much if not more information about themselves as the other domains. Furthermore, participants believed that music was the most revealing of their personalities than all other domains, except hobbies.

Personality is also hard to define, and there is no standard accepted definition . For the purposes of this study it will be defined as, "a dynamic organisation, inside the person, of psychophysical systems that create a person's characteristic patterns of behaviour, thoughts, and feelings".(Carver & Scheier, 2000, p.5)

Today many psychologists believe that there are five factors that form the building blocks of personality. These factors are extraversion, agreeableness, openness, neuroticism and conscientiousness. Extraversion includes attributes such as sociability, excitability, sociability, assertiveness, talkativeness and high emotional expression. Agreeableness includes characteristics such as trust, kindness, affection, altruism and pro-social behaviours. People who are open to experience are characterised by being adventurous, imaginative, emotional, and curious about their inner and outer world and have a broad range of interests. Neuroticism has the traits of anxiety, anger, depression, vulnerability, emotional instability, irritability and sadness. Conscientiousness includes the personality dimensions of thoughtfulness, impulse control, goal directed behaviour, determination and self-discipline. This five-factor model of personality has become a common tool for personality psychologist and has been widely used in research, including studies relating to music preference and personality. There has been much research in the last fifty years illustrating the effectiveness of this model in gauging personality types (Digman 1986; 1990; 1997; Mcrae 1997). In one study, Mcrae et al (1997) found that these five traits were universal and could accurately describe personality in over fifty different cultures with five different language families.

Rawlings and Cincarelli(1997) implemented an updated music preference scale (Little & Zuckerman 1987) and a revised Neo Personality inventory to correlate music preference with the five factors of personality. They conducted a factor analysis and identified three patterns of liking; rock music, general breadth of music preference and a liking for popular music. They found that students who liked pop music and had a narrow

breadth of music preference were less extraverted, open to new experiences and to show less musical interest in general. Students who preferred rock music had a correlation with high values and actions, relative dislike to other genres, and males who liked rock music scored lower on conscientiousness. People with a wide breadth of preference showed traits of being agreeable, open and extraverted. Individuals with the personality trait of openness also correlated with liking a wide variety of music. Females were found to enjoy pop music more than males and liking pop music correlated with being trustful. Extraversion and Openness had the highest relationship with music preferences.

Rentfrow and Gosling (2003) also used the Big Five Inventory consisting of 44 items of the five personality domains which were rated on a five point scale. These were then correlated with the music preference dimensions to find out the relationship between the two. The four music dimensions they used were; Intense and Rebellious, Reflective and Complex, Upbeat and Conventional and Energetic and Rhythmic. The results showed that the complex and reflective dimension was positively correlated to the openness dimension of personality and suggested that people who enjoy this type of music tend to be intelligent, innovative, liberal, tolerant of others and imaginative. People with a preference for the intense and rebellious dimension showed a positive correlation with openness to new experience, athleticism, self- efficacy in intelligence and verbal ability, curiousity and risk taking. The researchers did not find a link between this music dimension and levels of neuroticism and disagreeableness, which they stated was contrary to previous research.

The Upbeat and Conventional Dimension revealed a positive relationship with extraversion, agreeableness, conscientiousness and negative correlations between

openness to new experience and social dominance. They believed these results indicated that people with this music preference were socially outgoing, cheerful, altruistic and conventional.

The energetic and rhythmic dimension was positively correlated to Extraversion, agreeableness and liberalism. These people were generally talkative, forgiving, outgoing, and energetic and see themselves as physically attractive. This dimension was negatively correlated with social dominance and conservatism. They concluded from this study that, 'knowing people's music preference can provide information about their Openness, Extraversion, Political Orientation and Intelligence'' (Rentfrow & Gosling, 2003, p. 1251). They also asserted that a person's music preferences could reveal their goals and values and suggested that future research could explore the role of person perception and music preference. They further proposed that further research should be done in different cultures and countries in order to see if music preferences can be generalized.

One criticism of Rentfrow and Goslings study (2003) was that they did not take into account how individual differences might affect how and why they use music in different ways. Chamorro-Premuzic and Furnham (2007) tried to bridge this gap by exploring the relationship between Individual differences (the big five personality factors, IQ and typical intellectual engagement) and a self- report inventory of uses of music. They established three main uses of music; emotional, cognitive and background. People who used music for emotional reasons would do so for emotional regulation and mood manipulation. Cognitive factors involved the rational appreciation and intellectual processing of music and

background music would be when people listened to music passively in social situations or in work for example.

They implemented a music inventory specifically designed for that study consisting of 15 items arranged on a 5 point likert type scale. Participants were also asked whether or not they liked or recognized different genres, songs and musicians, on a two point scale of yes or no responses. The genres were adapted from Rentfrow and Goslings (2003) study. The results indicated that the different ways in which people use music is significantly related to their established personality traits. A person's typical intellectual engagement was significantly related to their music recognition and preference ratings. People with the personality trait of openness were also more likely to listen to music in this cognitive fashion. They also found that people with high neuroticism were more likely to listen to music for emotional and mood regulation, as were people low in extraversion and conscientiousness.

Chamorro-Premuzic, Swami, Furnham and Maakip (2009) replicated this study in 2009 with Malysian University students and found again that Neurotic individuals were more likely to use music for emotional regulation. Extraverts were more likely to use music as a background or distraction. People high in the personality trait of openness to experience had a positive relationship with cognitively listening to music. However unlike, their previous study, extraversion was positively, not negatively related to the use of music for emotional regulation and conscientiousness was not linked to emotional regulation. The researchers suggested that the limitations of their studies were a lack of cultural of ethnic diversity and suggested that future research focus on gender differences and how males and females use

music in different ways. For example, they hypothesised that women would use music more for emotional regulation than men.

George, Stickle and Rachid (2007), counducted another study that was consistent with the findings of Renfrow and Gosling (2003). He had his sample of 358 canadian college students fill out measures of the BFI and the S.T.O.M.P music preference scale in an effort to replicate parts of Renfrow and Gosling's study (2003) with a community rather than an undergraduate sample. He too found correlations between the reflective and complex music dimension and openness to experience, as did a preference for intense and rebellious music. The upbeat and conventional music dimension was positively correlated to extraversion and higher levels of conscientiousness. They also discovered that men had a higher preference than women in intense and rebellious music, while women had a higher preference for upbeat and conventional music. Two limitations of this study were that there were a disproportionately large number of University students, which may not be a proper representation of the general population. Furthermore, the sample was from a liberal arts Christian school, which may have skewed the results as they may have had a higher preference for religious music than the general population.

Another similar study was undertaken by Desling and Engels (2008), who furthered previous research by using Dutch participants' for the first time which helped validate and generalize the previous findings (Chamorro-Premuzic & Furnham, 2007; George et al, 2007; Rentfrow & Gosling, 2003).They also had their participants redo the survey every year for three years to examine the stability of their music preferences and personality types. Their

results revealed that adolescence who enjoyed listening to rock music tended to score relatively low on conscientiousness and quite high on openness to experience, which corresponds to previous research. They also found that participants' who enjoyed jazz, classical and religious music scored high on the personality facets of conscientiousness, agreeableness and openness to experience, which was also found in Rentrow and Goslings study in 2003. They also found that adolescents who enjoy rap/hip hop had high extraversion and agreeableness scores and similar results were obtained for the pop and dance categories. One distinction between this study and that of Rentfrow and Gosling (2003) was that although similar correlations were found between the music genres and personality types, the correlations in this study were consistently lower. The researchers attributed this to the age difference between the two samples as Renfrow and Goslings study involved college students whereas this study concerned adolescence. They believed that the personality factors of college students may have been more stable than adolescence as peer influences might be more prevalent in the younger sample (Desling & Engels, 2008).

An interesting result came about from the retesting of the same participants at year intervals. The researchers discovered that personality factors predicted changes in the music preferences of their participants in between testing's. Participants who had high levels of openness at the first testing tended to have a decreased music preference for pop and dance music and they also had lower levels of increased preference for rap and urban music. Also, Participants with higher levels of agreeableness tended to have a decreased interest in pop and dance music in subsequent testing's. Furthermore, adolescence who displayed high levels of extraversion showed a decrease in a preference for Rock music over the span of the three years.

The results of this study were valuable because it was the first Dutch sample used and also the first study to follow up with more research on the same participants years later, to see how music preferences and personality change over time. One limitation of this study was that it depended on self- report questionnaires on music preference, which may have been influenced by peer pressure. For example a participant may have enjoyed religious music but would not write it down in case they were deemed uncool by their peers.

Zweigenhaft (2008), too looked at the relationship between music preference and personality using the S.T.O.M.P scale developed by Rentfrow and Gosling (2003), however he also looked at individual music genres. Furthermore, he chose to use the NEO-PI rather than the big inventory to assess personality types as it is longer and more complex and has finer gradations between the personality facets. Corresponding with previous research (Rentfrow & Gosling, 2003), he found a significant positive correlation between peoples liking of reflective and complex music and Openness to experience, which also correlated positively with a preference for intense and rebellious music. His results also echoed Renfrow and Goslings results for the upbeat and conventional music dimension, which correlated with extraversion, agreeableness, openness and conscientiousness. Another similarity was found in the relationship between energetic and rhythmic music correlating with extraversion and agreeableness. However this correlation with agreeableness was positively correlated (r=-.07) in Rentfrow and Gosling's study, while it was negatively correlated in Zweigenhaft's (2008) study. This investigation also differed from Rentfow and Gosling (2003) as they found a significant positive relationship between openness as the energetic and rhythmic dimension, however this correlation was also found by Desling & Engels (2008).

In looking at the music genres separately, Zweigenhaft (2008) discovered that some music genres were more likely to reveal aspects of personality more than other. For instance, folk music which is one of the genres making up the reflective and complex music dimension, correlated with 9 of the personality traits. Conversely, classical music which also falls under the reflective and complex dimension had no significant correlations with any of the personality facets. The researchers concluded that it is important to include the specific music genres as well as the broad music dimensions.

Langmeyer et al (2012) were the first researchers to examine the relationship between music preference and personality in a German Population. They administered the Short Test of music Preferences (Rentfrow & Gosling, 2003) and the big five personality inventory to 422 college students ranging from 21 to 26 years of age. Similar to previous studies (Desling & Engels, 2008; Rentfrow & Gosling, 2003), they found positive correlations between openness to experience and reflective and complex music as well as intense and rebellious music. They further found a negative correlation between openness to experience and upbeat and conventional music. Conscientiousness was found to be weakly correlated to upbeat and conventional music be negatively correlated to the intense and rebellious music dimension, which bears close resemblance to previous research (Desling & Engels, 2008; George et al., 2007; Zweigenhaft, 2008). They also found that extraversion was positively correlated with upbeat and conventional music as found by Desling & Engels (2008) and Rentfrow and Gosling (2003).

While Langmeyer et al (2012) succeeded in replicating previous research (Rentfrow & Gosling, 2003; George et al, 2007; Desling & Engels, 2008; Zweigenhaft, 2008), with a previously untouched German sample, one weakness of the study was that all the correlations found were rather low. This led the researchers to believe that there are other factors at play that affect a person's music preference other than personality. Another weakness was that there was not much variation in age and the participants were 72% male which may have skewed the results somewhat

In a similar study , Chamorro-Premuzic, Fagan and Furnham (2010) tried to determine whether uses of music and personality traits predicted liking of music classified as happy, sad, complex or social. They played the participants 20 unfamiliar music extracts for 30 seconds on a website and they were asked to write down how much they enjoyed the extract on a 5 point likert scale. They also filled out a measure big 5 personality inventory .This study not only replicated the finding of their previous studies, they also found that while peoples liking of sad music tended to increase if they use music in an emotional way, even though emotional stability had no effect on this preference. They further discovered that males liked sad music more than females, although they found no major differences between genders on the emotional use of music, other than females being more likely to experience negative emotions when hearing sad music, which may explain why they enjoy it less than men.

Extraversion was positively correlated with happy music and also with their preference for music in the Upbeat and Conventional Music dimension. Openness to experience was positively related to a preference for complex music, although this had no relation to the cognitive use of music. Background music was positively related to a

preference for social and happy music. Males were more likely to enjoy music in a cognitive way and this was negatively correlated with age.

In a recent study, Djikic (2011) tested whether music could have an effect on ones experience of their personality traits. Participants filled out a Big five inventory questionnaire and then were divided into three groups. The first group got both the classical music and the lyrics translated into English. The second group, the music only group, heard the Classical music but were only given the lyrics in German. The third were the lyrics only group and heard the song translated in English but did not hear the classical music. Interestingly they found that music enhanced self- reported variability in personality, whereas lyrics seem to supress it. They also found that emotions mediate the effect the lyrics have on personality traits. The researcher believed that showing that music can influence how a person perceives themselves, illustrates the potential of music to open up and change their personality.

There have been a number of studies that indirectly explored the link between music and personality also. Barret et al (2010), examined if personality had an effect on music-evoked nostalgia. Their findings suggested that nostalgia proneness was predicted by neuroticism on the big five Inventory. Little and Zuckerman (1986) found a positive correlation between those with a preference for rock music and those high in sensation seeking. Another discovery of theirs was that people high in sensation seeking particularly dislike soundtrack or bland music. They believed that people with this personality type needed to immerse themselves in music rather than use it as a background function and thus

preferred complex music. They also found that people high in experience seeking had wider breadth of music preferences and were more likely to listen to music intensely.

A limitation of many previous studies was that they were based solely on undergraduate college students, which are far from a homogenous group and therefore most of the previous research focused on young adults and adolescence. It has been suggested that in order to prove the generalizability of the previous findings, more studies need to be done with a wider age group. Thus one of the aims of the current study was to include people over the age of thirty and to determine whether age differences have an effect on the relationship between music preference and personality type. Previous studies have shown that a person's personality is much more subject to change during adolescence and early adulthood than in middle and late adulthood (McCrae et al, 1999; Soto, John, Gosling, 2011; Terracciano, Costa, McCrae, 2006). Moreover, it has been suggested that adolescence is a formative stage in the development of music preference, however this preference may be influenced by their peers how can be very influential in the shaping of adolescence music preferences (Desling & Engels, 2008; Mulder, Ter Boght, Raaijmakers, Gabhainn, Sikkema, 2009). It has also been suggested that the age a person's music preference crystallises is around 23.5 years and that age correlates positively to music taste consistency (Mulder et al, 2009) and that as people grow older they begin to prefer a certain type of music more (Desling & Engels, 2008). It was therefore hypothesis in the current research that there would a stronger correlation between music preference and personality type in older versus younger participants.

The main criticism of previous research on the relationship between music preference and personality was that cultural and environmental influences may influence the results, which could hinder the universalism and generalization of the findings. Most of the previous research was done in the United States so it is unclear the extent to which the findings

generalises to other Countries and cultures. Thus, the purpose of this study is to examine the relationship between personality type and music preference amongst an Irish population sample, which has not been done before. If similar findings were discovered in Ireland as were found in the United states such as Rentfrow and Goslings study in 2003, it would be a good indicator that their finding are not simply due to the culture and environment their participants lived in and could that their results show substantial generalizability across cultures and age groups. Another criticism of previous research is that there were too many facets of personality used and so this current study intents to use a condensed version of the big five personality inventory. The results of this study should contribute to the literature regarding music psychology and further validate the previous studies and lead to better understanding of the topic. This study should be beneficial because it addresses some of the limitations and criticisms of previous research that were mentioned previously. If a correlation is found between music preference and personality, it may be of assistance to Psychologists and Counsellors as it will help them gain a greater insight into their clients personalities and identify and emotional issues or developmental issues they are having and it may also be useful for them as a means of conducting therapy.(White, 1985). It is hypothesised that there will be a relationship between different personality type's preference for different types of music. It is also hypothesised that there will be a stronger link between music preferences and personality in older rather than young participants. Furthermore, it is hypothesised that there will be a relationship between different personality type's preference for different types of music. It is further hypothesised that similar to previous research, the complex/reflective and intense/ rebellious music dimension will display a positive relation to the personality trait of openness to experience. The upbeat and conventional music dimension will display a positive correlation with extraversion and conventional/ uncreative and a

negative correlation with openness. And finally it is hypothesised that the energetic and rhythmic music dimension will correlate positively with openness to new experience, extraversion and will negatively correlate with the conventional/ uncreative personality variable.

CHAPTER TWO: METHOD

Materials

Participants were supplied with a questionnaire that included a consent form, a demographic information form, a musical preference inventory and a personality inventory. Responses were made by writing in the responses in the spaces provided with a pen.

Short Test of Music Preference

The music preference inventory utilized was the Short Test of Musical Preferences (STOMP), which was developed by Rentfrow and Gosling in 2003. It was designed to allow researchers to measure music preferences according to the different musical genres. They designed it this was because when most people talk about their musical preferences they do so in terms of genres rather than the individual components that make up the music such as temp, rhythm or melody. In order to come up with their survey, they had to analyse the categories listed on various online music shops. After extensive research they narrowed the list of genres down to 14 basic ones (e.g. blues, rap/hip-hop, country) that they found 97% of their participants were familiar with, as opposed to the 14 genres with 66 subgenres that only 7% of participants were familiar with, which is what they originally found. These genres were then subjected to a principle component analysis allowing them to break the genres down into four factors; intense and rebellious, upbeat and conventional, energetic and rhythmic and reflective and complex. Each genre on the stomp scale is prefaced with, "I like"

and participants then rate their music preference on a seven point likert scale where 1 equals not at all and 7 equals very much. The stomp scale has been tested extensively by Renfrow and Gosling and used in many other researchers in measuring music preference and has been found to be both valid and reliable(Renfrow& Gosling, 2003;Langmeyer et al 2012; Zweigenhaft, 2008).

The Big Five Inventory

The Big Five Inventory (BFI) is a self-report inventory that was designed to measure the Big Five personality dimensions (John & Srivastava, 1999). The BFI is a multidimensional personality inventory consisting of 44 items that measure five broad personality domains. Items are measured on a five point scale where 1= disagree strongly and 5=agree strongly. The five broad personality measures include neuroticism, conscientiousness, agreeableness, extraversion and openness to experience. These five traits can give a comprehensive profile of persons behavioural and cognitive patters. Previous studies have shown that this scale has high levels of validity and reliability (John & Soto, 2008; Benet-Martinex & John, 1998). Each personality domain was made up of smaller individual personality components. Extraversion was measured by how quiet, reserved or shy a person was. Neuroticism was made up of how relaxed, emotionally stable and calm a person is in stressful situations. Agreeableness consisted of the degree to which a person tends to find fault with others, starts quarrels with others, can be cold and aloof, and is sometimes rude to others. Conscientiousness was the summation of how careless, disorganized, lazy and easily distracted a person rated themselves. Openness was the results of how they rated how many artistic interests they had and if they preferred work that is routine.

Consent Form

The consent form informed participants the nature of the research, the aim of the study, how long the survey would take to complete if they agree to participate, and what the data will be used for. It also informed them of their right to withdraw at any time and that all data and any information that they give will be kept completely anonymous. Furthermore, it included the researchers contact details and participants were informed that they send an email if they wanted a summary of the results when the study was finished.

Demographic Information Form

This form included the participants age and gender.

Participants

A Convenience sample of Psychology students attending Dublin Business School, located in Dublin, Ireland was recruited. A request was made for involvement to all students attending a Psychology class, after being approved by the lecturer. Other Participants were contacted through the social networking site Facebook, and asked to complete an online survey which was implemented by a free online survey website called kwicksurveys.com. The sample

consisted of 109 students, 67 males and 42 females. The average age of the participants was 26 (M=26.95, SD=9.25)

Design

This study employed a prospective, quantitative cross-sectional questionnaires research design. The variables involved were Individuals music genre preferences (blues, country, folk, heavy metal, hip hop, religious, soul, funk, punk, gospel) and Personality traits (Openness, Extroversion, Agreeableness, Conscientiousness and Neuroticism) and Demographic variables(age, gender, nationality). The music factors were the dependant variable and the personality facets and age was the predictor variables.

Procedure

After permission had been granted from a lecturer in Dublin Business School, the researcher entered the lecture hall, and informed the students present the nature and aims of the study and informed them that participation was totally voluntary and anonymous and they could withdraw at any point. Potential participants were informed that their participation would involve filling out a survey relating to their musical preference and personality type. It was requested that participants answer all items honestly and not to share their answers with anyone. The questionnaires were then distributed and ten minutes allocated for completion.

When participants had completed the demographic information form, the Stomp and the BFI , the researcher collected them making sure to keep them all confidential. In total, 53 surveys were returned completed and returned.

The remainder of the data collected for this survey was obtained through the social networking website www.facebook.com, where potential participants were contacted directly and informed of the nature and aim of the research, that participation was completely anonymous and they could withdraw at any time. The online survey distribution was implemented using kwicksurveys.com, which is a free online survey website. In total, 56 online surveys were completed. All surveys were obtained in the same week in February 2011.

CHAPTER THREE: RESULTS

Each participants data from the completed surveys was entered in the Statistical Package for the Social Sciences (SPSS v.18), where all analysis was carried out. Five items from the Big Five Inventory were reverse coded and four items from the Short test of music Preference were coded before analysis.

Descriptive Statistics

Descriptive statistics were obtained for all of the four music dimensions (reflective/complex, intense/rebellious, energetic/rhythmic, upbeat and conventional), and the five personality dimensions (openness, neuroticism, agreeableness, conscientiousness, extraversion).

The mean scores for the results of the "Short Test for Music Preferences" (S.T.O.M.P), their standard deviations and the average rating (ranking order) for the genres can be found in table 1.

Table 2 shows the mean scores, standard deviations and tests of normality for The Big Five personality measures, along with the four music dimensions.

Table 3 shows the different correlations found between the five personality measures and the four music dimensions.

Table 1: Short Test of Music Preferences

Genre	Number	Ranking	Average Rating of genre	Std. Deviation
Rock	109	1	5.42	1.51
Pop	109	2	5.01	1.60
Soundtracks	109	3	4.83	1.53
Blues	109	4	4.61	1.50
Classical	109	5	4.60	1.44
Pop	109	6	4.57	1.71
Dance	109	7	4.55	1.72
Rap/Hip-Hop	109	8	4.42	1.71
Jazz	109	9	4.38	1.56
Alternative	109	10	4.25	1.77
Folk	109	11	3.99	1.69
Country	109	12	3.52	1.74
Heavy Metal	109	13	2.98	1.95
Religious	109	14	1.91	1.24

Table 2: Means, Standard Deviations and Tests of Normality for Target Variables

Target Measure	N	Mean	SD	K-S	S-W
Conscientiousness	109	30.37	6.43	.105	.974
Neuroticism	108	58.61	5.64	.084	.980
Agreeableness	109	29.52	5.13	.085	.987
Openness	109	3.67	.637	.090	.979
Extraversion	109	3.49	.769	.066	.988
Reflective/Complex	109	4.39	1.14	.060	.988
Intesnse/Rebellious	109	4.22	1.40	.087	.977
Upbeat/ Conventional	109	3.71	1.04	.069	.984
Energetic/Rhythmic	109	4.65	1.30	.081	.976

K-S=Kolmorgorov-Smirnov test or normality

S-W=Shapiro-Wilk test of normality

Table 3: Correlations Of Target Measures

r/rho	Openness	Conscientiousness	Neuroticism	Extraversion	Agreeableness
Reflective/Complex	.286*[b]	.091[b]	.123[b]	.162[b]	.424[b]
Intesnse/Rebellious	.262*[a]	-.083[a]	.053[a]	-.023[b]	-.012[a]
Upbeat/ Conventional	.113[a]	.069[a]	.077[a]	.006[b]	.065[a]
Energetic/Rhythmic	.197*[b]	-.079[b]	0.001[b]	.212*[b]	.083[b]

a=Pearsons   b=Spearmans Rho

*=Significant at $p < 0.05$
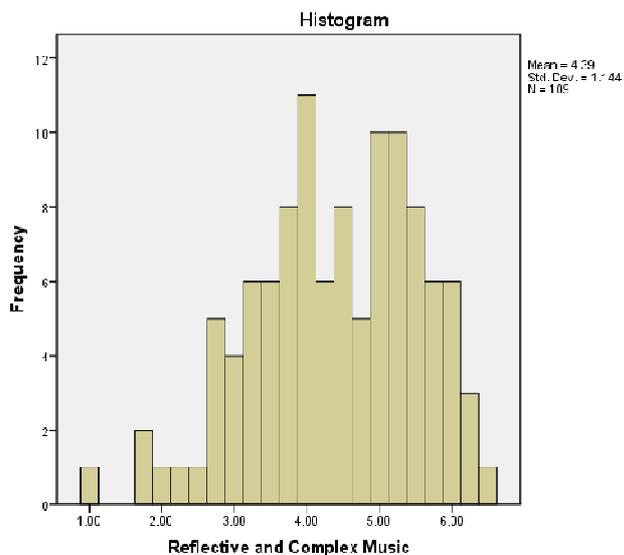
Figure 1: Histogram showing frequency of respondents Reflective and Complex Music
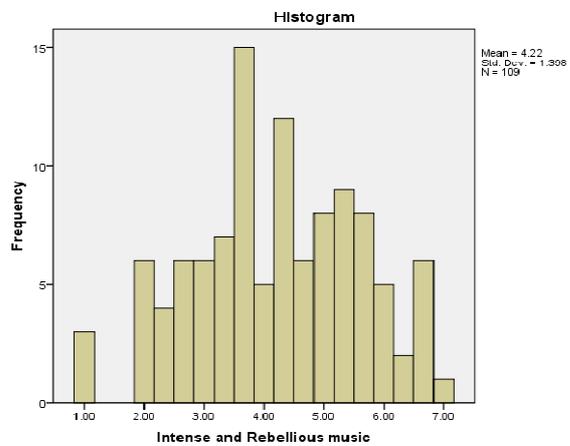
Score

Figure 2: Histogram showing frequency of respondents Intense and Rebellious Music
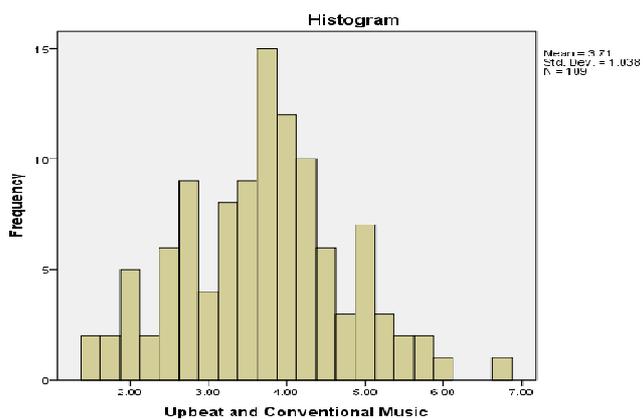
Score

Figure 3: Histogram showing frequency of respondents Upbeat and Conventional
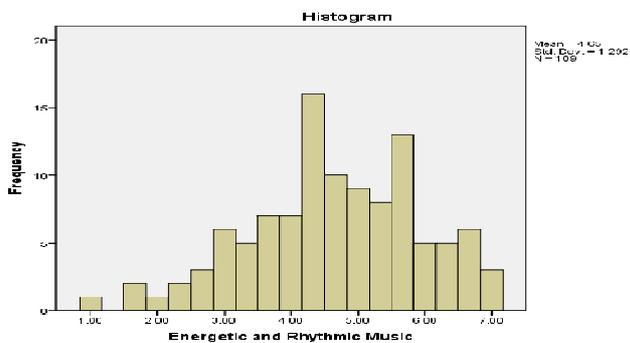
Music Score

Figure 4: Histogram showing frequency of respondents Energetic and Rhythmic

Music Score

Inferential Statistics

To determine how music preferences were related to the personality factors, the major concern of the current study, correlations and were calculated between participants STOMP scores and the facets of the BFI.

Hypothesis 1

Preliminary analysis were performed on the relationship between the complex and reflective music dimension(as measured by the STOMP) and the Openness personality factor(as measured by the BFI)to test if there was any violations of the assumptions of normality, linearity and homoscedasticity. The complex and reflective music dimension had a significance of under 0.05 in the Kolmorgorov-Smirnov test or normality and Shapiro-Wilk test of normality and a scatterplot revealed that the data was not normally distributed. Therefore a Spearmans Rho was utilized instead of a Pearsons Correlation. Significant associations were observed between the two variables (rho=2.86, n =109, p<0.05), with higher preference for complex and reflective music associated with higher levels of Openness.

Hypothesis 2

Preliminary analyses were performed on the relationship between the upbeat and conventional music dimension and the personality dimension of extraversion. They revealed that the data was not normally distributed and so a Spearmans Rho was the statistical tool used the test the correlation of the two variables. No significant relationship was found, rho=-.006, n=109, p>0.005). For hypothesis 2 the null hypothesis is accepted.

Hypothesis 3

A Pearsons correlation was carried out to examine the relationship between the intense and rebellious music dimension and the Openness personality facet. . Preliminary analyses were performed to make sure there was no violation of the assumptions of normality, linearity and homoscedasticity. There was a significant association observed between the two variables (r=.262, n 109, p <0.05)

Hypothesis 4

The relationship between the Upbeat and conventional music domain and the personality factor of Openness to Experience was investigated using Pearson product-moment correlation coefficient. Preliminary tests of normality revealed that the data was normally distributed. There was no significant correlation found between the variables(r=.113, n = 109, p>0.05).

Hypothesis 5

A Spearmans Rho was carried out to find out if there was a relationship between the personality facet of Openness to experience and the music preference dimension of Energetic and rhythmic. Preliminary tests of normality showed that the data was not normally distributed so a Spearman's Rho was used instead of a Pearsons correlation coefficient. There was a medium positive correlation between the two variables (rho=.197, n=109, p<0.05) with

higher preference for energetic and rhythmic music associated with higher levels of Openness to experience.

Hypothesis 6

Preliminary tests of normality on the relationship between the energetic and rhythmic music dimension and the personality facet of Extraversion, revealed that the data was not normally distributed. Thus a Spearmans Rho was carried out to see if there was a correlation between the two variables. A significant correlation was observed between the variables (rho=.213,n=109,p<0.05) with a higher musical preference of energetic and rhythmic music moderately associated with higher levels of extraversion.

Hypothesis 7

In order to test if there was a stronger relationship between music preference and personality type between older versus younger participants', a new variable was created with a split file consisting of people over 30 and people under 30. Correlations were then performed between all of the music preference dimensions and all of the personality facets. A Pearsons Correlation coefficient was carried out between the conscientiousness personality facet and the intense and rebellious music dimension and revealed that there was a strong negative significant correlation between the two variables in the over 30 age group (r=-.496, n=18,p< 0.05), with a lower music preference for intense and rebellious music associated with higher levels of conscientiousness. There was no significant relationship between the same variables in the under 30 age group (r= -.008, n=91, p>.005).

A spearmans rho was carried out between the conscientiousness personality facet and the energetic and rhythmic music dimension because preliminary tests of normality revealed that the data was not normally distributed. Once again there was a split file utilized between participants under 30 and participants over 30. There was a strong, negative significant correlation found between the two variables in the over 30 age group (rho=-.707, n=18, p<0.05), with high levels of conscientiousness associated with low levels of music preference for energetic and rhythmic music. There was no significant associations found between the same variables in the under 30 age group (rho=.103, n=91, p>0.05).

A spearmans rho was also carried out to test the relationship between Extraversion and the music preference dimension of energetic and rhythmic. Results revealed that there was a moderate significant positive relationship between the two variables in the under 30 group (rho=.238, n=91,p<0.05) with a higher preference foe energetic and rhythmic music associated with higher levels of extraversion. However, there was no significant relationship between the two variables in the over 30 group (p=-.050, n=28, p>0.05).

A Pearsons product-moment correlation coefficient was used to examine if there was an association between the personality facet of Openness the experience and the preference for Intense and Rebellious music. Results displayed a moderate positive correlation between the two variables in the under 30 age group (r=.304,n=91,p<0.05), with higher preference for intense and rebellious music associated with higher levels of openness to experience. There

was no significant associations found between the two variables in the over 30 age group however (r=-.074, n =18, p>0.05.)

A Spearmans rho was used to examine the relationship between the Openness to experience personality facet and the preference for reflective and complex music dimension of the S.T.O.M.P. There was a moderate positive, significant correlation found between the two variables in the under 30 age group (rho=.325, n=91, p<0.05). There was no significant relationship found between the two variables in the over 30 age group (rho=.150, n=18, p>0.05).

The findings that there were negative correlations between the older group and the personality trait of conscientiousness and music dimensions intense and rebellious and energetic and rhythmic were not found in previous research. However previous studies have shown that people do become more conscientious as they grow older (McCrae et al, 1999; Soto et al 2011), and so this could explain why these correlations occurred only in the over thirty age group.

While there was a stronger link found between conscientiousness and two music dimensions in the older versus the younger group, there were also stronger correlations found in the younger group between extraversion and energetic and rhythmic music, and openness with music dimensions intense and rebellious and complex and reflective. Thus the hypothesis that there is a stronger relationship between music preference and personality in older rather than younger participants was not supported by the current study as the results are inconclusive.

CHAPTER FOUR: DISCUSSION

Summary of Results

The results indicated that there was a relationship between music preference and personality type and as seen in previous research, most of the correlations with music preference involved the personality measures of extraversion and openness (Rawlings and Cincarelli, 1997). There were seven hypothesis tested within this research. The first was that there will be a correlation between the personality trait of openness to experience and the complex and reflective music preference dimension, and the second was that there will be a positive correlation between Openness to experience and the intense and rebellious music dimension. Both of these hypotheses were confirmed and accepted by the research. The third hypothesis that the upbeat and conventional music dimension will positively correlate with the personality facet of openness was not supported by the current research. Neither was the fourth hypothesis that there will be a negative correlation between the upbeat and conventional music preference dimension and the personality facet of openness to experience. The fifth and sixth hypothesis was that there will be a positive relationship between the energetic and rhythmic music dimension and the personality facets of openness to experience and extraversion, both of these hypotheses were supported by the results. The final hypothesis was that there will be a stronger relationship between music preferences and personality type in older rather than younger participants. While there was a stronger relationship in two of the correlations, there was also a weaker relationship found in others and so this hypothesis is inconclusive.

Reflective/ Complex music preference and Openness to experience

The findings of this study supported previous research that there is a positive correlation between people who score high in the openness to experience personality facet and a preference for reflective and complex music (Dollinger, 1993; George et al 2007; Langmeyer et al 2012; Rawlings and Cincarelli, 1997; Rentfrow and gosling 2003;). One explanation for this correlation could be that participants who were open to experiences enjoyed the novelty and originality of the complex and reflective music dimension (Chamorro-Premuzic & Furnham, 2007). Also as openness to experience has been associated with higher intelligence, it is possible that open individuals might respond more favourably to complex music as they are more likely to understand and appreciate the complicated music techniques being expressed in complex music (Chamorro-Premuzic et al, 2010). Furthermore people who are open to new experiences are more likely to enjoy music with unfamiliar time signatures, melodies and rhythm's which are characteristics of complex music.

Intense and Rebellious music preference and Openness to experience

There has been substantial research stating that there is a relationship between the intense and rebellious music dimension and the openness to experience personality measure (Desling & Engels, 2008; Dollinger, 1993; George et al 2007, Langmeyer et al 2012; Rentfrow & Gosling, 2003) and this corresponds with the results of the current study.

Upbeat and Conventional music preference and Extraversion

The current study found no significant relationship between extraversion and a preference for upbeat and conventional music, which diverges from previous research (Desling & Engels, 2008, George et al 2007; Rentfrow and gosling 2003; Zweigenhaft, 2008). It is not clear why there was no significant relationship found here but it may have to do with cultural differences, seeing as how none of the previous research was done in Ireland.

Upbeat and Conventional music preference and Openness

It was hypothesised that there would be a negative correlation between the liking of upbeat and conventional music dimension and the personality trait of openness as found in previous research (Desling & Engels, 2008; Langmeyer et al 2012; Rawlings & Cincarelli1997, Rentfrow & Gosling 2003; Zweigenhaft, 2008). This too could be due to cross-cultural differences as some of the music genres making up the upbeat and conventional music preference such as country and religious music may not have been as popular in Ireland as they are in America.

Energetic an Rhythmic Music and Openness

It was hypothesized that there would be a significant positive correlation between participants with a preference for dance/electronica, rap/hip-hop and soul/funk music which make up the energetic and rhythmic music dimension, and the personality measure of Openness to experience. This hypothesis was accepted and the current research supports previous findings

(Desling & Engels, 2008; Rawlings & Cincarelli, 1997; Rentfrow & Gosling 2003; Zweigenhaft, 2008).

Energetic and Rhythmic Music and Extraversion

Previous research found a correlation between the personality measure extraversion and a preference for energetic and rhythmic music and these findings were replicated in this study which found a significant positive correlation between the variables (rho=.213, n=109,p<0.05). Rentfrow and Gosling (2003) argued that people's music preferences are selected by how the music reinforces their personal dispositions. This correlation then could be explained by extraverts enjoying energetic and rhythmic music as extraverts have lower resting levels of arousal and higher levels of sensation than introverts and so listening to energetic and rhythmic music might satisfy their needs better than other types of music as it is emotionally arousing music that is fast pace and grabs their attention (Chamorro-Premuzic & Furnham, 2007, Dollinger, 1993).

Difference in older versus younger participants

One of the limitations of previous research was that the relationship between music preference and personality may be influenced by other factors such as age and previous researchers have suggested that it would be useful to see if there was a stronger relationship between the two in older versus younger participants'. (Chamorro-Premuzic & Furnham, 2007; Langmeyer et al 2012; , Rentfrow and gosling 2003; Zweigenhaft, 2008). It has been put forth that music preference is already developed by early adolescence and becomes more stable by late adolescence and early adulthood (Holbrook and Schindler, 1989, as cited in Mulder, 2009) and previous studies have shown that age is positively related to music

preference consistency (Mulder et al, 2009). Much of the previous research has focused on the relationship of music preference and personality in teenagers and young adults (Desling & Engels, 2008; Rawlings & Cincarelli, 1997; Rentfrow & Gosling, 2003; Schwartz & Fouts, 2003, Dollinger, 1993; George et al, 2007; Zweigenhaft, 2008), and one of the aims of the current research was to extend the findings of the existing research and to apply it to a wider age range and not limit it to college students. Previous research has found a stronger relationship between music preference and personality type in the upbeat and conventional music dimension and the personality factors conscientiousness and agreeableness in participants over thirty (Dean, Yu & Epps, 2007). They speculated that the reason for this may be down to the fact that younger people are still developing and forming their identities as according to the social identity theory (White, 1985). Thus, younger people may be more inclined to listen to music in order to impress people or in order to fit in with their friends, whereas older people who have achieved their identity are more comfortable listening to music for their own benefit without the stress of social approval. This study did not find a significant association between the upbeat and conventional music dimension and the personality factors conscientiousness and agreeableness as previous research did (Dean et al, 2007). However, the current research did find a strong negative correlation between the personality dimension of conscientiousness and the musical dimensions of complex and reflective and intense and rebellious in the over 30 age group, and there was no significant associations of those variables within the under 30 group. This in part supported the hypothesis that there would be a stronger relationship between music preference and personality type, but only in the conscientiousness domain. The under 30 group had a more significant relationship between the personality trait of openness and the reflective and complex music and intense and rebellious music dimensions and also between the personality

trait of openness to experience and energetic and rhythmic. Thus the effect of age on the relationship between music preference and personality type is far from conclusive as there are conflicting relationships between younger and older participants for different variables. Also it must be noted that there were only a small number of participants who took part in this study that were over the age of 30 (n=18). Therefore the hypothesis was rejected.

Strengths of the Study

One of the main strengths of this study was that it had a large sample size (n=109) and unlike most previous research the participants were not all college students, there was good variation in age and education and occupations. Another strength of the study was that it succeeded to carry on the line of research of studying the relationship between music preference and personality type, which has been chronically understudied this far. This study extends the previous research by using a wider age group and it further validates previous research by using an Irish population for the first time which can add to the validity of previous research.

Limitations of the study

While a large sample size was obtained for this study, greater variance in the age groups would have given a greater reflection on the impact of age on the relationship between personality and music preference and been able to help generalize findings. The sample was entirely Dublin based which might not be a proper representation of the national population.

Due to research constraints, there was only enough time that participants' were willing to give to answer a survey and so this study comprised of only one personality dimension and music preference scale. If time constraints were not an issue it may have been beneficial to add another scale testing the different ways in which people use music as done in previous research (Chamorro-Premuzic, 2007; Chamorro-Premuzic, 2010; Rentfrow & Gosling, 2003). Furthermore, it would have been useful to include another scale to test individual differences such as cognitive ability as it is possible that there are other predictors of music preference other than personality.

Although it is useful to look at statistical evidence based on surveys about music preference and personality, a qualitative approach may be equally if not beneficial. If a researcher interviewed people about their music preference it might yield more significant insights into their personality for example.

This study was based on cross-sectional data which means it only can look at correlations but no causations can be obtained from it. It is also impossible to say whether it is a person's personality that predicts what music they listen to, or if it is the music they listen to that affects their personality.

Another limitation was that although the S.T.O.M.P scale has good test-retest reliability, is well researched and does a good job at giving an insight into peoples overall music preferences, the fact that the music preference is broken down into 4 dimensions may not give the full picture of people's preference. Much music falls into more than one genre or is

hard to categorize which may mean that music preference cannot be put into independent categories. The fact that many artists have different songs which fall into different genres may have affected the results.

Future research

A suggestion for future research could be to use a completely non-college sample as most of the previous research was done purely of college students. This may help to confirm the generalizability of the results across samples, as there may well be much different results found in a non-college sample as college students tend to be quite up to date with music and their individual cognitive abilities may also have affected results. A less homogenous sample would be well advised for future research.

It would also be useful for future research to include another scale for measuring individual differences such as cognitive ability and intelligence because it is likely that these too predispose people to liking certain types of music, along with personality.

Most of the previous research between music preference and personality to date has taken a quantitative approach usually administering surveys and questionnaires in relation to the variables. However as mentioned previously, using a qualitative approach such as interviews may lead to greater insights and future researchers may look into this too.

One could also further look into the different uses and ways in which people use music, because there have been limited studies on this to date, and there have not been enough studies outside of America to test the generalizability of the results.

It seems that there may also be significant benefits from future research who break down the music dimensions into less restrictive genres, as new genres are created all the time, and most artists fall into more than one genre and as music is such a dynamic art form there needs to be a way to keep up with the changes when assessing music preference. It may be useful for future researchers to first ask participants' if they agree with certain music genres falling into each dimension of the S.T.O.M.P as if they don't it will affect the validity of the results.(Zweigenhaft, 2008).

There has been limited research looking at the effect of age on music preference and personality, especially in adults over 30. Future research would do well to focus on a wider range of age groups as it could yield interesting results about how people's personality and music preference evolve over their lifespan.

Most of the previous research was based on a once off sample and to this researchers knowledge there are no longitudinal or cross sectional studies, that too could give insights on how a person's personality and music preference change over time and could help to further explain how the two variables interact.

Several studies have looked at how people's music preference and personality are related to the sub-culture surrounding the music they like (Arnett, 1991; North & Hargreaves, 1999). Future research focusing on these different sub-cultures may lead to pertinent discoveries about how music affects individuals not only as a leisure activity but as a part of their identity and how it affects them socially.

Finally, it may be useful to look at not only what music people listen to, and the different ways in which they listen to music, but finding out the reason why people enjoy listening to different types of music could also be invaluable.

Practical and theoretical Implications

There have been numerous studies showing that much psychological information gained by exploring a music preference. However, although the area of music in Psychology is growing, it is still chronically understudied. Seeing as how most people rate music very highly in terms of what is important to them and they believe it is something that makes up their individuality (Rentfrow & Gosling, 2003) and can provide valuable insights into their personality, studies such as the present one are very useful in broadening the previous literature. Music has not only been shown to be an integral part of a person's identity but also a big part in their social life as music is played in so many social situations and oftentimes people are part of sub-cultures that have to do with their music preference. Understanding a person's music preference on the sub-culture they are part of because of music has many practical applications for counsellors and Psychologists as it can help them gain greater insights to the personalities and social identities of their patients. Music has also been shown to have a number of useful psychological applications such as enhancing mood, emotional regulation, evoking memories and even helping people to communicate who could not do so otherwise (Barret et al, 2010; Hunter et al, 2011; Zenter et al, 2008).

Studies like the present one, which help to expand on previous research by showing that there is a definite correlation between the type of music a person listens to and their personality type could also be of use to the music industry as they could possibly have a more personalised approach when marketing music to people as they could use ads that appeal to certain personality types rather than basing their marketing purely on age and demographics. For example if they knew that people who were extraverts were more likely to listen to energetic and complex music, they could advertise this type of music in mediums that extraverts are more likely to come in contact with such as music festivals or large social events. Whereas if they knew that people who were open to experience were more likely to enjoy complex and reflective music, they could market it to them in a way that emphasizes how new and exciting the new music they were pushing were.

This study would also be of use to social psychologists as music is clearly a social phenomenon and can be used as a pathway into a person's social attitudes and beliefs identity (North & Hargreaves, 1999). People tend to listen to music which is in accordance to their own views and beliefs and so knowing a person's music preferences could be useful in gaining awareness of their lifestyle patters, personal tendencies' and social identity. Many researchers believe that one of the functions of music is the consolidation of identity (Chamorro-Premuzic & Furnham, 2007).

This study would also be relevant to counsellor's, teachers, parents and educational Psychologists because past research has indicated that certain types of music such as heavy metal music are linked with anti-social behaviour, anger and emotional problems(Epstein, Pratto, Skipper, 1998; et al Arnett, 1991)

They also found that a preference for heavy music in adolescence was correlated with having an unhappy family life. Adolescents who prefer lighter music were more likely to be socially awkward and have problems building social relationships. Thus it may be a warning signal if a child or adolescent is listening to heavy metal or hip hop that they may have some family or emotional issues worth exploring, which could help them with their development. It might therefore be useful to learn a person's music preference which could help to give a sense of their personality profile and understand what issues they might be facing (Schwartz & Fouts, 2003).

Finally, it is useful to learn a person's music preference as it is another tool that Psychologists can use to unlock their patients emotional cognitive needs.

Conclusion

This study was successful in elaborating further an area of study which is still in the early stages of development. There was a relationship found between Openness to experience and the reflective/complex, intense and rebellious and energetic and rhythmic music dimensions. There was also a relationship found between extraversion and the energetic and rhythmic music dimension. Additionally, the over 30 age group displayed a correlation between the conscientiousness personality trait and the music dimensions intense/rebellious and energetic and rhythmic. These findings suggest that there is a definite relationship between music preference and personality, but the picture is far from complete and in order to truly uncover this relationship further intensive research is required.

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Appendixes

Big Five Inventory

How I am In general…

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who *likes to spend time with others*? Please write a number next to each statement to indicate the extent to which **you agree or disagree with that statement.**

1: Disagree Strongly

2: Disagree a Little

3. Neither agree nor disagree

4. Agree a little

5. Agree Strongly

I am someone who………………

1. _____ Is talkative
2. _____ Tends to find fault with others
3. _____ Does a thorough job
4. _____ Is depressed, blue
5. _____ Is original, comes up with new ideas
6. _____ Is reserved
7. _____ Is helpful and unselfish with others
8. _____ Can be somewhat careless

9. _____ Is relaxed, handles stress well.
10. _____ Is curious about many different things
11. _____ Is full of energy
12. _____ Starts quarrels with others
13. _____ Is a reliable worker
14. _____ Can be tense
15. _____ Is ingenious, a deep thinker
16. _____ Generates a lot of enthusiasm
17. _____ Has a forgiving nature
18. _____ Tends to be disorganized
19. _____ Worries a lot
20. _____ Has an active imagination
21. _____ Tends to be quiet
22. _____ Is generally trusting
23. _____ Tends to be lazy
24. _____ Is emotionally stable, not easily upset
25. _____ Is inventive
26. _____ Has an assertive personality
27. _____ Can be cold and aloof
28. _____ Perseveres until the task is finished
29. _____ Can be moody
30. _____ Values artistic, aesthetic experiences
31. _____ Is sometimes shy, inhibited
32. _____ Is considerate and kind to almost everyone
33. _____ Does things efficiently
34. _____ Remains calm in tense situations
35. _____ Prefers work that is routine
36. _____ Is outgoing, sociable
37. _____ Is sometimes rude to others
38. _____ Makes plans and follows through with them
39. _____ Gets nervous easily
40. _____ Likes to reflect, play with ideas
41. _____ Has few artistic interests
42. _____ Likes to cooperate with others
43. _____ Is easily distracted
44. ____Is Sophisticated in art, music or literature

Short Test Of Music Preferences

For the following items, please indicate your basic preference level for the genres listed using the scale provided.

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

Strongly dislike   neither like nor dislike   Strongly like

 1. _____ Classical

2. _____ Blues

3. _____ Country

4. _____ Dance/Electronica

5. _____ Folk

6. _____ Rap/hip-hop

7. _____ Soul/funk

8. _____ Religious

9. _____ Alternative

10. _____ Jazz

11. _____ Rock

12. _____ Pop

13. _____ Heavy Metal

14. _____ Soundtracks/theme songs