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The Correlations Between Music Preferences and Personality

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Abstract
Music is useful in our daily lives, but how can it correlate to our personality? Little research was about the correlations between music preferences and personality among Chinese teenagers. The present research will demonstrate the correlation among (Chinese adolescents) them. 81 junior high school and senior high school students in at Bashu school participated. HEXACO model and 12 music genres were used to measure the personality, and some music about Chinese culture was also included in the music genres. In addition to that (In addition), the differences between the music preferences of young male students and preferences of young female students were manifested, and the differences between the music preferences of junior high school students and preferences of senior high school students were manifested (demonstrated).
Keywords: *Music preference, Personality, HEXACO, Correlation, Teenagers*

1. Introduction

This paper will start with literature reviews, and hypothesis will be introduced. Then the methodology and the research process will be demonstrated.

Thomas Schäfer, Peter Sedlmeier, Christine Städtler and David Huron (2013) found that music enabled people to experiment with different sides of my personality and expressed the personality of people.

According to bouchard (1994), personality can be influenced both by genes and environments. It is claimed that about two-thirds of the reliable variance in measured personality traits is due to the genetic influence.

Then purpose of the study is to find the correlations between music preference and personality among junior high school students and senior high school students.

Rentfrow and Gosling (2003) required participants to rate questions about the importance of eight different activities (using scales ranging from 0, strongly disagree, to 100, strongly agree), the beliefs about lifestyles of participants (using scales ranging from 0, strongly disagree, to 100, strongly agree), their personalities (using scales ranging from 1, strongly disagree, to 7, strongly agree), other people's personalities (using scales ranging from 1, strongly disagree, to 7, strongly agree), and the frequency with which they engaged in various activities (using scales ranging from 1, never, to 7, all the time). The Big Five Model was used to analyze the relationships between music preferences and personality. It was manifested that Extraversion correlated to Intense and Rebellious music (alternative, rock, and heavy music), Upbeat and Conventional music (country, pop, and religious music), and Energetic and Rhythmic music (rap, funk, and electronica music). Agreeableness was correlated to Upbeat and Conventional music and Energetic and Rhythmic music. Conscientiousness had relation related with Upbeat and Conventional music. Emotionality was significantly negatively correlated to Reflective and Complex (classical, jazz, blues, and folk music). Openness was related to Reflective and Complex music, Intense and Rebellious music, and Upbeat and Conventional music.

Zweigenhaft (2008) used Big Five Traits to measure the preference and four music preference dimensions to find the correlation. As the result, Openness was significantly positively related to Reflective & Complex music and Energetic & Rhythmic music, and it was significantly negatively related to Upbeat & Conventional music. Conscientiousness was found significantly positively correlated to Upbeat & Conventional music.

Music Preference Questionnaire and Big-Five factors was used to find the correlations between music preferences and personality among adolescents by Delsing, Bogt, Engels, and Meeus (2008). It was found that Extraversion had negative correlation with Rock (heavy mental, punk, gothic wave, and rock), and positive correlation with Urban (rap and soul) and Pop music (trance and Top 40 music). Agreeableness had positive correlation with Elite (jazz, classical music, and gospel), Urban, and Pop music. Conscientiousness had negative correlation with Rock and Elite music. Emotionality had positive correlation with Elite music. Openness had positive correlation with Rock and Elite music.

Brown (2012) did this research among Japanese university students. The seven-point response scale were used to rank the music types (Opera, Gospel, Classical, Jazz, Enka, Rap, Reggae, Soul, Metal, Punk, and Rock). The HEXACO model was used to measure the personality of people. Brown found that Openness was significantly positively correlated to Reflective music (classical, gospel, jazz,

opera, Enka). Honesty-Humility was significantly positively correlated to Reflective music.
In addition to use Big Five factors, Pilgrim, Norris, and Hackathorn (2017) also add NFC (need for cognition) and CC (cognitive closure) to find the correlations. Reflective and Complex music had negative correlations with conscientiousness and cognitive closure. Upbeat and conventional music had positive correlation with extraversion. Energetic and rhythmic music had positive correlation with openness, and it was negatively correlated to conscientiousness and cognitive closure.
There was no previous research about music preference about gufeng (one of the branches of pop music, which has lyric and melody in ancient China style), Chinese opera (for instance: Beijing opera, Kunqu opera…) and two dimensions music (the song that was sung by singers for some cartoons or video games, and it contains some fictional factors which is different from what people heard in daily life.) (Deng Yan, 2019). And there was no research shows about the correlation among teenagers. This research will fill the gaps above.

2. Hypothesis

This research will find a correlation of each music preference and personality, and some of the correlations can support the previous research.

3. Methodology

3.1 Participants

There were 81 Chinese young students participating in the project, with 78 students were from Chongqing BI Academy and 3 students were from Chongqing Bashu middle school. Among the 81 participants, there were 52 junior high school students with 27 males, 25 females, and 29 senior high school students with 7 males and 22 females attended the research investigation. Students from the junior high school came from two classes and finished the survey questionnaires in paper under the help with the teachers from each class. The teachers are were connected guided by Wechat . After getting the basic understanding of the research including the purpose of the study, what should students do, and the time was taken to finish the questionnaire, the teachers agreed to help. Then, students in junior high school were asked to complete the questionnaires together. Students from senior high school got the questionnaire in their QQ groups, and they engaged in the investigation voluntarily.

TABLE I. DEMOGRAPHIC DETAILS OF PARTICIPANTS

	JUNIOR	SENIOR	IN ALL(ALL)
FEMALE	25	22	47
MALE	27	7	34
IN ALL	52	29	81

3.2 Measures

Before starting the questionnaire, all the participants were asked to finish the consent form. In the consent form, they were shown details about the information of the investigator which included name of the investigator, institution where the investigator comes from , and contacts (e-mail address), the introduction of the research which contained the name of the project, the structure of the questionnaire (the first part was ranking the music types, the second part was investigating participants' personality through HEXACO model), the time will would be taken for finishing the questionnaire, and the confidentiality of the questionnaire. Furthermore, if they had questions about the research, they can could ask the investigator for further information. If they would like to withdraw from the research anytime when they are were doing the questionnaire, they can could simply quit the study and the relationship between the researcher and the participant will would not be compromised. Participants were allowed to start the questionnaire survey once they have read and signed the consent form.
The questionnaire started with the music rating. Participants indicated how much they liked the music target on a seven-point response scale ranging from 1 (= very much dislike) to 7 (= very much like). Participants were instructed to indicate with 0 any genres that they were unfamiliar with. For instance, if they never heard pop music, they could choose 0 to minimize the opportunities that they would simply skip genres out of haste to complete the task (A.R. Brown, 2012). As for the music, expect some usual type of music that shared with western country such as: Classical music, Pop music, Blues, Rock & Roll, Punk, Jazz, Western opera, Mental, and Reggae, some Chinese style music types, including gufeng, Chinese opera, and two dimensions music are were also included.
The HEXACO model assesses six personality domains: Humility–Honesty, Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness. High scorers of Honesty-Humility have personality of sincerity, fairness, greed-avoidance, and modesty. Emotionality is positively related to fearfulness, anxiety, dependence, and sentimentality. Extraversion is positively related to social self-esteem, social boldness, sociability, and liveness. Agreeableness is positively related to forgiveness, gentleness, flexibility, and patience. Consciousness is positively related to organization, diligence, perfectionism, and prudence. Openness is positively related to aesthetic appreciation, inquisitiveness, creativity, and unconventionality. (Ashton,2009)

3.3 Process of the research

Then, participants were asked to complete the HEXACO-60 (from the website wenjuanxing https://www.wjx.cn/jq/18863461.aspx) that was also adapted from previous professional HEXACO questionnaire. And the questionnaire contained 60 assumed

situations that will would happen in real life, and participants were required to indicate the attitudes toward the situations by choosing from 1(= strongly disagree) to 5(= strongly agree). The HEXACO model was used to investigate more specific aspects of personality that might be associated with music preferences.

3.4 Data analysis

SPSS software was used to help with the data analysis. After the analysis of data, the relationship between music preference and personality will would be shown. The data was typed in the form of a data view. The 12 types of music were called V1-V12, and the 60 questions of HEXACO model were called Q1-Q60. Then in the analysis, the compare means were found, and independent sample T was chosen to find the differences in music preference between junior high school and senior high school, male students and female students. Then, in the analysis, the correlate was found and chose bivariate to find the relationships among music types and personality traits.

4. Result

TABLE II. THE DIFFERENCES OF MUSIC PREFERENCE BETWEEN JUNIOR HIGH SCHOOL STUDENTS AND SENIOR HIGH SCHOOL STUDENTS

	Grade	*N*	*Mean*	*Std. Deviation*	*T*	*P*
Classical music	Junior High	52	7.15	1.85	0.445	0.658
	Senior High	29	6.97	1.78		
Pop music	Junior High	52	9.13	1.33	0.242	0.809
	Senior High	29	9.07	0.80		
Blues	Junior High	52	6.60	2.04	0.369	0.713
	Senior High	29	6.41	2.29		
Rock & Roll	Junior High	52	7.19	2.13	1.623	0.109
	Senior High	29	6.45	1.66		
Jazz	Junior High	52	7.35	2.04	1.559	0.123
	Senior High	29	6.62	1.95		
Punk	Junior High	52	6.25	2.18	2.54	0.013
	Senior High	29	5.03	1.84		
Gufeng	Junior High	52	7.27	2.10	0.951	0.345
	Senior High	29	6.79	2.27		
Western opera	Junior High	52	6.35	2.24	0.488	0.627
	Senior High	29	6.10	1.97		
Chinese Opera	Junior High	52	5.75	1.94	1.132	0.261
	Senior High	29	5.24	1.94		
Metal	Junior High	52	6.08	2.15	2.94	0.004
	Senior High	29	4.72	1.65		
Reggae	Junior High	52	6.02	2.20	2.806	0.006
	Senior High	29	4.66	1.90		
Two dimensions music	Junior High	52	6.63	2.50	1.291	0.2
	Senior High	29	5.90	2.41		

As can be seen in Table 2, junior high school students significantly prefer Punk ($P < 0.05$), Reggae, and Metal ($P < 0.01$) than senior high school students. Junior high school students showed more preference in classical music (M=7.15, SD=1.85), pop music (M=9.13, SD=1.33), Blues (M=6.60, SD=2.04), Rock and Roll (M=7.19, SD=2.13), Jazz (M=7.35, SD=2.04), Gufeng (M=7.27, SD=2.10), Western Opera (M=6.35, SD=2.24), Chinese Opera (M=5.75, SD=1.94), and two dimensions music (M=6.63, SD=2.50)than Junior senior school students (M=6.79, SD=1.78; M=9.07, SD=0.80; M=6.79, SD=1.78; M=6.41, SD=2.29; M=6.45, SD=1.66; M=6.62, SD=1.95; M=6.79, SD=1.78; M=6.10, SD=1.97; M=5.24, SD=1.94; M=5.90, SD=2.41).

TABLE III. THE DIFFERENCES OF MUSIC PREFERENCE BETWEEN MALE AND FEMALE

	Gender	*N*	*Mean*	*Std. Deviation*	*T*	*P*
Classical music	Male	35	6.91	1.84	-0.741	0.461
	Female	46	7.22	1.81		
Pop music	Male	35	9.03	1.25	-0.555	0.58
	Female	46	9.17	1.10		
Blues	Male	35	6.54	2.01	0.044	0.965
	Female	46	6.52	2.23		
Rock & Roll	Male	35	7.54	2.06	2.502	0.014
	Female	46	6.46	1.83		
Jazz	Male	35	7.23	1.97	0.548	0.585
	Female	46	6.98	2.08		
Punk	Male	35	6.26	2.32	1.645	0.104
	Female	46	5.48	1.94		
Gufeng	Male	35	7.20	1.75	0.366	0.715
	Female	46	7.02	2.45		
Western opera	Male	35	6.37	2.10	0.41	0.683
	Female	46	6.17	2.18		
Chinese Opera	Male	35	5.80	1.76	0.937	0.351
	Female	46	5.39	2.07		
Metal	Male	35	6.46	2.15	3.486	0.001
	Female	46	4.93	1.78		
Reggae	Male	35	6.26	2.25	2.71	0.008
	Female	46	4.98	1.98		
Two dimensions music	Male	35	6.66	2.31	0.908	0.367
	Female	46	6.15	2.60		

As can be seen in the table 3, young male students significantly prefer Rock and roll ($P < 0.05$), Metal ($P < 0.01$), and reggae ($P<0.001$) than young female students. Young male students showed more preference in Blues (M=6.54, SD=2.01), Jazz (M=7.23, SD=1.97), Punk (M=6.26, SD=2.32), Gufeng (M=7.20, SD=1.75) , Western opera (M=6.37, SD=2.10), Chinese opera (M=5.80, SD=1.76), and Two dimensions music (M=6.66, SD=2.31) than young female students (M=6.52, SD=2.23; M=6.98, 2.08,; M=5.48, SD=1.94; M=7.02, SD=2.45; M=6.17, SD=2.18; M=5.39, SD=2.07; M=6.15, SD=2.60). And young female students showed more preference in Classical music (M=7.22, SD=1.81) and Pop music (M=9.17, SD=1.10) than young male students (M=6.91, SD=1.845; M=9.03, SD=1.25).

As shown in Table 4, openness is significantly positively correlated with classical music (r=0.271, p<0.01) and Chinese opera(r=0.237). Nevertheless, it is significantly negatively correlated with gufeng music (r=-0.19, p<0.05), western opera (r=-0.18, p<0.05), reggae (r=-0.193, p< 0.05). The emotionality is significantly positively correlated with punk (r=0.219, p< 0.01) and classical music (r= 0.213, p<0.05). Except for openness and emotionality, the other traits (Humility- Honesty, Agreeableness, Extroversion, and Conscientiousness) were not significantly correlated with the music types.

TABLE IV. THE DIFFERENCES OF MUSIC PREFERENCE BETWEEN MALE AND FEMALE

	Humility -Honesty	*emotionality*	*extroversio n*	*agreeablenes s*	*conscientiousnes s*	*openne s*
Classical music	-0.115	0.213*	-0.014	-0.103	-0.032	-0.271**
Pop music	0.072	0.035	-0.086	0.008	-0.088	-0.038
Blues	-0.019	0.084	0.059	0.070	-0.107	-0.112
Rock Roll	-0.045	0.129	-0.031	0.140	-0.076	-0.122
Jazz	-0.029	0.158	-0.076	0.099	-0.070	-0.121
Punk	-0.029	0.219**	0.000	0.008	0.006	-0.139
Gufeng	0.023	0.030	-0.103	-0.160	-0.085	-0.190*
Western opera	0.097	0.162	0.016	-0.077	-0.049	-0.180*
Chinese Opera	0.035	0.139	-0.035	0.017	-0.124	-0.273**
Metal	-0.141	0.160	-0.027	-0.007	-0.074	-0.123
Reggae	-0.130	0.085	0.056	-0.099	-0.122	-0.193*
Two dimension s music	-0.094	0.121	-0.047	-0.065	0.041	-0.044

***. Correlation is significant at the 0.001 level (2-tailed).

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

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

5. Discussion

5.1 Age differences in music preferences

Significant, however, the differences in the preferences towards classical music, pop music, Blues, Rock and Roll, Jazz, Gufeng, Western Opera, Chinese Opera, and two dimensions music between these two groups of students were not statistically significant. .

5.2 Gender differences in music preferences

Male participants prefer rock & roll, Metal, and reggae significantly than females. However, in Brown's (2012) research, it was found that females prefer pop, classical, jazz, soul, gospel, opera, and Enka that males. In Cristenson's (1988) research, female participants prefer soul, southern rock, blues, and mainstream pop significantly than males. However, the differences in the preferences towards classical music, pop music, Blues, Jazz, Punk, Gufeng, Western Opera, Chinese Opera, and Two dimensions music between these two groups of students were not statistically significant.

5.3 Openness

According to the results from the previous study which was conducted by Zweigenhaft (2008), openness significantly positively correlated with reflective & complex music this and energetic & rhythmic, and it is significantly negatively correlated with upbeat & conventional music. The relationships between openness and classical music and reggae were found in this research. Herrera and other researchers (Herrera et al., 2018) found openness related to all the music types except Afro-American music. Delsing, Bogt, Engles, and Meeus (2008) found that openness significantly positively correlated with rock music (metal, punk, wave, and rock). In Pilgrim (2017)'s research, there was no relationship between openness and other kinds of music.

5.4 Emotionality

Delsing et al. (2008), Herrera et al. (2018), and Brown (2012) found that emotionality positively associated with classical music, and the result was the same in this research. However, Rentfrow (2003), found that emotionality significantly negatively correlated to classical music. Herrera et al. (2018) also found that emotionality was positively correlated to rock music, it was not found in this research. Delsing et al. (2008) found that emotionality significantly positively correlated to Jazz and Gospel music which were not found in this research. Rentfrow (2003) found that emotionality significantly negatively correlated to Jazz, Blues, and Folk music.

5.5 Agreeableness, Humility-Honesty, Extroversion, and Consciousness

In other researches, agreeableness was significantly positively correlated with positive emotional music style (Herrera, 2018), Latin dance music, and Brazilian music. It was significantly negatively correlated to Enka (Brown, 2012), and rock music (Herrera et al., 2018). Rentfrow (2003), found that agreeableness was positively correlated to pop music, religious music, rap, country music, funk and electronic music. But in Zweigenhaft, 2008, there was no relationship between agreeableness and other music, it is the same as the result in this research.

In Brown's (2012) research, Humility-Honesty was positively related to reflective music, including gospel, blues, Enka, and western opera. However, in this research, there was no significant correlation found about Humility-Honesty.
Extraversion was found positively related to reggae (Brown, 2012). But in Zweigenhaft's (2008) research, there was no relationship found between extraversion and other music, it was the same as the resul of this research. Rentfrow (2003) found that extraversion was significantly positively correlated to pop music, religious music, rap, country music, funk and electronic music. In Delsing (2008), extraversion was positively correlated to Rap, R&B, and Pop music.
Conscientiousness was negatively related to Punk (Brown, 2012), and positively related to upbeat & conventional music (Zweigenhaft, 2008), including Pop music. (Langmeyer, 2012.). Herrera et al. (2018) found that conscientiousness was significantly negatively correlated to Rock Music, Afro-American Music, and Alternative music. However, there was no significant correlation found about conscientiousness in this research.

5.6 Strengths, Limitations, and Future Studies

There are three main limitations that can explain the probability that the present result cannot support the hypothesis.
First of all, the quantity of participants is quite low (81 students) comparing the previous researches, so maybe it leads to a few relationships between personality and music preferences. In Zweigenhaft's (2008) research, it had a low quantity of participants (83 participants) as well, and it also led to limited relationships among personality traits and music types. As for the previous researches, the number of participants is large, for example, in previous research by Brown, there were 268 participants (153 male, 115 female), and for another research, 300 undergraduate students were contained (Lonsdale & North, 2011).
In addition, the participants were asked to rank the music type from 0-7 according to their own preferences. However, some of them may not be able to distinguish exactly what type of music actually is, and they might rank the music optionally. Students, especially in junior high, are too young that the music types they listen were restricted. It may be hard to find the obvious relationships between music preference and personalities of those students. Most research would choose older people to do the questionnaire, in the psychological functions of music listening, the participants have minimum age 16 and the maximum age 71, in Brown's research, all the participants are college students. And in Brown's research, participants were asked to listen to different types of music, and rank it, by doing so, participants will be provided a reference to rank the music. However, because the representation of each type of music might be very melodious, the points that participants rank may be too high, even if they did not like this kind of music, the approach was not used in the research. It is suggested that the way to improve is to explain what the feature of each music type (For instance, reggae: A strong-paced pop music).
Moreover, the choices of music types were not completed. Some popular music types such as rap, electronic music, and folk songs were not chosen, it may restrict the alternative of students. To improve it, more specific and special music types should be chosen in the research. For instance, in Brown's research, the music type Enka was included. As for the usual music type, there were no relationships with agreeableness, but because of the Enka music, there finally was one type related to agreeableness.
In the future, the relationship between personality and learning musical instruments can be studied as the prolongation of this research.
In daily life, some parents believe, for example, if children like punk (with open minds and aggressivity), they might probably get some bad traits. And in the research, punk music showed its relationship between with the emotionality. However, not all music can be defined totally good or bad, like classical music, it relates to both openness and emotionality, so prefer one type of music may no always be good or bad.
Yoyo (2017) found that, although it is hard for a teacher to change a student's personality trait in a short period of time, music instructional strategies can help students to establish curiosity, imagination, and originality, and cultivate student's aesthetic and emotional sensitivities.

6. Conclusion

Based on the data in the research, the personality of people can be assumed by knowing what type of music they like. People like classical music and punk more are easily being emotional. People like classical music, reggae, and Chinese opera are more open. And people who prefer Gufeng music and western opera are less open. In the future studies, it is suggested that researchers may need more time to find more participants and get more data. In addition, researchers should find another good way to let participants understand each music in order to get accuracy. Finally, researchers should be well-prepared especially for the music type, and try to get completed choices.

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