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Understanding the Association Between Personality and Music Preference

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***Abstract*:** This study examined the association between personality traits and music preferences among young adults in Pune, India. The research focused on two personality dimensions Extraversion and Openness to Experience and two music preference categories: Upbeat and Conventional (U&C) and Energetic and Rhythmic (E&R). A total of 40 questionnaires were distributed, and 28 participants who met the criteria for high scores in the selected personality traits and music preferences were included in the final analysis. Data were collected using the NEO Five-Factor Inventory and the Short Test of Music Preferences (STOMP). Descriptive statistics were calculated, and a Pearson Chi-Square test of independence was conducted to determine whether personality traits were associated with preferred music styles. The findings indicated no significant relationship between Openness and E&R music preference or between Extraversion and U&C music preference ($p = .632$). Both null hypotheses were accepted. The results suggest that personality traits may not reliably predict music preferences within this sample. Limitations include a small sample size, cultural and socioeconomic homogeneity, and limited familiarity with global music genres. Future studies should include larger and more diverse samples, culturally adapted music measures, and the use of sound clips to ensure accurate reporting of music preferences.

Keywords: *Community Mental Health, Personality Development, Individual Differences, Media and Behavioral Psychology*

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1. Introduction

1.1 *Personality*

Personality refers to the enduring and organized pattern of thoughts, emotions, and behaviors that characterize an individual's unique adjustment to the environment. Larsen and Buss define personality as a stable and structured set of psychological traits and mechanisms that influence an individual's interactions with their surroundings. Over time, theorists have proposed various approaches to understanding personality:

Freud's Psychoanalytic Theory emphasized unconscious processes and the roles of the id, ego, and superego. Jung's Typology introduced key personality distinctions such as introversion and extraversion. Allport's Trait Theory identified thousands of traits and differentiated between cardinal, central, and common traits. Cattell reduced traits to 16 primary factors. Eysenck proposed three dimensions: extraversion, neuroticism, and psychoticism. Costa and McCrae later introduced the widely accepted Big Five Personality Model, which includes Extraversion, Openness to Experience, Agreeableness, Conscientiousness, and Neuroticism.

1.1.1 Biological, Social, Cultural, Environmental, and Situational Factors

Personality is shaped by an interplay of various factors, including biological elements such as heredity and temperament, social components like family dynamics, peer interaction, and assigned social roles, as well as cultural influences that determine behavioral norms, values, and societal expectations. Additionally, environmental conditions including living arrangements and geographic location contribute to personality development, while situational factors can produce temporary modifications in behavior depending on the context.

1.2 *Music Preference*

Music preference refers to the types or genres of music that individuals enjoy and choose to listen to. Music plays a role in emotional regulation, self-expression, cognitive functioning, and cultural identity.

Rentfrow and Gosling (2003) developed the Short Test of Music Preferences (STOMP), categorizing music into four dimensions:

1.Reflective & Complex (R&C): Classical, jazz, blues, folk.

2. Intense & Rebellious (I&R):Rock, heavy metal, alternative.

3. Upbeat & Conventional (U&C): Pop, country, religious, soundtracks.

4. Energetic & Rhythmic (E&R): Hip-hop, rap, dance, electronic.

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Research has shown that certain personality traits may be associated with specific musical preferences; however, cultural exposure and familiarity with music styles influence these associations.

2. Review of Literature

Previous research relating personality and music preferences has often measured such reported preferences according to genre labels. To support previous research, the current paper has expanded investigation of the relation between personality and music preferences to include direct measurement of music listening behavior. A study (N = 395) measured participants' personality, reported music preferences, and their listening behavior, which was tracked while using a music database for a minimum period of three months. Results indicated that reported music preferences were correlated to listening behavior and indicated robust positive relations between Neuroticism and Classical music preference, and between Openness to Experience and Jazz music preference. Results also indicated issues when using genre labels to measure music preferences, which are discussed.

This study by Thomas, Fagan and Adrian (2010) replicates the findings of a recent study (Chamorro-Premuzic et al., 2009) on the relationship between the Big Five personality traits and everyday uses of music or people's motives for listening to music. In addition, it examined emotional intelligence as predictor of uses of music, and whether uses of music and personality traits predicted liking of music consensually classified as sad, happy, complex, or social. A total of 100 participants rated their preferences for 20 unfamiliar musical extracts that were played for a 30-s interval on a website and completed a measure of the Big Five personality traits. Openness predicted liking for complex music, and Extraversion predicted liking for happy music. Background use of music predicted preference for social and happy music, whereas emotional music use predicted preference for sad music. Finally, males tended to like sad music and use music for cognitive purposes more than females did.

This study by Avila and McClelland (2011) investigates the effect of familiar musical distractors on the cognitive performance of introverts and extraverts. Participants completed a verbal, numerical and logic test in three music conditions: vocal music, instrumental music and silence. It was predicted that introverts would perform worse with vocal music, better with instrumental music and even better in silence across all tests while for extraverts it would be the

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reverse. Results showed that during the verbal test, overall performance for all participants was significantly better in silence, supporting the idea that lyrics interfere with the processing of verbal information in the task. However, no significant music-personality interactions were found. Possible explanations for, and implications of, these results are discussed.

Langmeyer, Guglhör-Rudan and Tarnai (2011) in their study which is the first to examine the relationship between music preferences and personality among a sample of young Germans (N= 422, age range 21–26 years). We replicated the factor structure of the Short Test of Music Preferences (STOMP, Rentfrow & Gosling, 2003) by means of confirmatory factor analysis (CFA). The validity of the STOMP was also confirmed for the first time by rating sound clips. The relationship between the dimensions of personality (Big Five Inventory) and music preferences (STOMP and sound clips) was analyzed with a structural equation model (SEM). Gender differences were examined with multi group analyses (MGA). Our findings corroborate earlier findings on the relationship between music preferences and personality: Individuals open to experience prefer reflective and complex music (e.g., classical) and intense and rebellious music (e.g., rock), whereas they dislike upbeat and conventional types of music (e.g., pop music). Extraverts, on the other hand, prefer upbeat and conventional and energetic and rhythmic types of music (e.g., rap/hip-hop). The results reveal some gender differences.

Through the development of the Short Test of Musical Preferences (STOMP) and a larger theory of music preferences, Rentfrow and Gosling (2003, 2006) have helped guide the way toward understanding the role of music in people's lives, and the relationship between music preferences and personality. The four music dimensions they established in their 2003 study provide a broad-brush look at some of the relationships between music preferences and personality. This study of 83 undergraduates at Guilford College in Greensboro, NC, used the NEO-PI, rather than the Big Five Inventory, which allowed us to examine the six facets that make up each of the Big Five traits as well as those traits themselves, and it looked separately at the music genres that make up the four music dimensions identified by Rentfrow and Gosling (2003). The findings provide general support for Rentfrow and Gosling's work, but they also demonstrate that the personality patterns for the specific music genres differ considerably from one another, even those that fall within the same broad music dimensions. The Openness trait was by far the most robust of the Big Five traits assessed by the NEO-PI, and preferences for some music genres

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(e.g., folk, international music, and rap/hip-hop) were far more revealing of personality than others (e.g., classical, rock, and electronic).

Little research has been conducted outside of the European–North American cultural area concerning the personality-based determinants of musical genre preferences The present research by Brown (2012) investigated the personality profiles and general music genre preferences of 268 Japanese college students. Six dimensions and 24 facets of personality, and 12 music genres, were assessed. Results indicated that, consistent with much previous research, openness (to experience) and particularly the facet of "aesthetic appreciation" were associated with a preference for "reflective" music (jazz, classical, opera, gospel, enka), while one extraversion facet (sociability) was associated with the preference for pop music. Other personality dimensions were less consistently associated with musical preferences, pointing to cultural differences and the need to assess both personality and music genres at more specific levels

2.1 *Summary of Literature*

While several studies identify trends (e.g., Openness → complex music; Extraversion → upbeat music), others suggest that cultural exposure and familiarity significantly influence results. The literature indicates potential associations but inconsistent generalization across populations.

3. Methodology

3.1 *Variables Used in the Present Study*

Extraversion- Costa and McRae have defined this personality domain with several more specific facets like impulsivity, assertiveness, activity level, the tendency to engage in excitement-seeking behaviors, the experience of positive emotions, and feelings of warmth toward others.

Openness to experience- Costa and McRae defined this trait as inventive, curious. People high on this dimension have appreciation for art, emotion and are adventurous. Openness reflects the degree of intellectual curiosity, creativity and a preference for novelty and a preference for variety of activities a person has over strict routine.

Upbeat and Conventional music- this music preference includes genres like pop, soundtracks, country style music and religious music.

Electronic and Rhythmic music- this music preference includes genres like electronic, Rap/Hip-Hop, dance and soul music.

3.2 *Variables*

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Independent Variable -Personality Traits (Extraversion and Openness to Experience)

Dependent Variables - Music Preference (Upbeat & conventional music And Elective & Rhythmic music)

Control Variables – Age of sample, English speaking students.

3.3 *Hypothesis*

Alternate Hypothesis

H1a: There is a significant association between Openness to Experience and preference for Energetic & Rhythmic (E&R) music

H1b: There is a significant association between Extraversion and preference for Upbeat & Conventional (U&C) music.

Null Hypothesis

H0a: There is no significant association between Openness to Experience and preference for Energetic & Rhythmic (E&R) music

H0b: There is no significant association between Extraversion and preference for Upbeat & Conventional (U&C) music.

3.4 *Sample*

The sample selected for the present study includes 28 participants from Pune city. The age group of the sample was between 22-27 years of age. The test was conducted on individuals from different ethnic and educational background. The Hypotheses were tested using the Pearson's Chi-Square test for independence. The sampling technique used for gathering data was convenience sampling. The entire process of data collection took 1 week.

3.5 *Psychometric Tools*

The STOMP(short test of music preference) developed by Rentfrow and Gosling in 2003. It has a total of 14 items in the form of music styles clustered into 4 music preference dimensions of Reflective and Complex(R&C), Intense and Rebellious(I&R),Upbeat and Conventional(U&C) and Energetic and Rhythmic (E&R)

The alpha coefficient reliability for each dimension is R&C=0.81, I&R=0.74, U&C=0.70 and E&C=0.71.

The NEO-FFI*:* The test was developed by Costa and McRae and is a shorter version of the original NEO-PI-R. The internal consistencies reported in the manual were Neuroticism=0.79, Extraversion=0.79, Openness to experience=0.80, Agreeableness=0.75, Conscientiousness=0.83.

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The Validity of the scale is satisfactory and ranges from 0.34 to 0.60 and is satisfactory.

3.6 *Procedure*

The complete questionnaire was distributed to 40 participants. The form included the instructions to be followed to fill the forms. The participants were informed that their test results would be kept confidential and would be used only for research purposes. The data collection took a week and after that all the response sheets were collected, the scoring and interpretation of the tests were done and only those high on extraversion, openness to experience and who had high preference for Upbeat and conventional music and Electronic and rhythmic music were taken for further analysis hence the sample size reduced to 28. The scores were analyzed further.

3.7 *Statistical Analysis*

The software used for the statistical analysis of the data was Statistical Package for Social Sciences (SPSS) version 20.

Descriptive statistics used were:- Mean, Median, Mode and Standard deviation.

Inferential statistics used were :- Pearson Chi- Square test for independence.

4. Results And Discussion

4.1 *Results*

Table 1. *Showing the mean, median, standard deviation and for two music preferences (U&C and E&R) and the two personality traits (E and O)*

	N	Mean	Median	Mode	SD
Music preference	28	1.36	1.00	1	.488
Personality	28	3.39	3.00	3	.497

Table 2. S*howing the Pearson Chi-square relation between the two personality traits and music preferences*

Degree of freedom(df)	Exact 1 sided significance
1	0.632

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Descriptive Statistics

Table 1 presents descriptive data for the variables measured: Music Preference: (Mean = 1.36, Median = 1.00, Mode = 1, SD = 0.488) Personality Traits (Extraversion & Openness): Mean = 3.39, Median = 3.00, Mode = 3, SD = 0.497

Pearson Chi-Square Test

A Chi-Square test of independence was conducted to examine associations between personality traits and music preferences. Df = 1 Exact significance (1-sided) = 0.632. Since p > 0.05, the results indicate no significant association between: Openness and preference for Energetic & Rhythmic music, or Extraversion and preference for Upbeat & Conventional music.

4.2 *Discussion*

The present study focused to understand the relation between one's personality and music preference and to check if one's personality traits are associated with their musical preference. Personality is a stable, organized collection of psychological traits and mechanisms in the human being that influences his or her interactions with and modifications to the psychological, social and physical environment surrounding them.

The complete questionnaire was distributed to the participants. The form included the instructions to be followed to fill the forms. The participants were informed that their test results would be kept confidential and would be used only for research purposes. The data collection took a week and after that all the response sheets were collected, the scoring and interpretation of the tests were done and the data was analyzed.

Table 1 contains the descriptive analysis of the study. The mean , median, mode and standard deviation of music preference was 1.36, 1.00, 1 and .488 respectively. The mean, median, mode and standard deviation of two personality traits(extraversion and openness) was 3.39, 3.00,3 and .497 respectively.

Table 2 shows Pearson chi-square coefficient between personality and music preference and was found to be (p> 0.05) and the significance value is 0.632 which is not significant.

Both the null Hypotheses were accepted indicating that personality trait does not necessarily have to be associated with the type of music one listens to and is exposed to.

H0a: There is no significant association between Openness to Experience and preference for Energetic & Rhythmic (E&R) music was accepted.

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H0b: There is no significant association between Extraversion and preference for Upbeat & Conventional (U&C) music was accepted

The following results can be supported by the research done by Thomas, Fagan and Adrian which replicated the findings of (Chammoro et al., 2009) on 100 participants and tested the relationship between the Big 5 personality traits and everyday use of music and people's motives for listening to music and the results showed that Openness predicted liking for complex music (R&C genre).

Another study by Langmeyer, Rudan and Tarnai (2012) and they used the STOMP and tested relation between the Big 5 traits and STOMP sound clips. The results showed that individuals open to experience prefer reflective and complexive music (R&C) and Intense and Rebellious music(I&R)

Although many studies prove that Extroverts prefer happy music and Upbeat and Conventional music (U&C) and rhythmic and dance music, one study by Christina Avila, and Alastair McClelland in 2011 investigating influence of background distracting music on cognitive performance of introverts and extroverts showed that no significant music and personality interactions were found. Both introverts and extroverts showed similar cognitive performance in presence of music.

A study done by Brown (2012) investigated the personality profiles and general music genre preferences of 268 Japanese college students. Only one extraversion facet (sociability) was associated with the preference for pop music and not the other facets of the trait. Other personality dimensions were less consistently associated with musical preferences, pointing to cultural differences and the need to assess both personality and music genres at more specific levels.

5. Limitations

5.1 *Conclusion*

Both the null Hypotheses were accepted. H0a: There is no significant association between Openness to Experience and preference for Energetic & Rhythmic (E&R) music was accepted. H0b: There is no significant association between Extraversion and preference for Upbeat & Conventional (U&C) music was accepted

5.2 *Limitations*

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1. Since only participants who scored high on Extraversion or Openness and who showed strong preferences for U&C or E&R music were included, the final sample was reduced to 28. Such a small sample size limits the strength and reliability of the findings.

2. A sample of 28 participants cannot adequately represent the broader population of music listeners, making the results less generalizable.

3. Most participants were from Pune and belonged to a similar middle-class socioeconomic background. Limited exposure to diverse global music genres may have led them to respond based on assumptions rather than genuine familiarity.

4. The majority of respondents were aged 20–27, a working demographic that typically has limited time to explore different music styles. Their listening habits may simply reflect commonly available radio or television music rather than personal preference.

5. The study relied on convenience sampling, selecting participants from the nearby surroundings rather than individuals with prior exposure to all STOMP music genres. This may have reduced the accuracy of their responses.

6. Due to cultural background and limited familiarity, many participants did not recognize several of the music styles listed in the scale. As a result, some responses may have been selected arbitrarily, affecting the validity of findings.

7. The absence of music preference scales designed specifically for Indian cultural contexts may have contributed to the non-significant relationship between personality traits and music preference.

8. Most middle-class individuals in India primarily listen to Bollywood or mainstream international music. Their limited exposure to the wide range of global music styles included in the scale reduces the likelihood of observing diverse preferences related to personality traits.

9. A more diverse sample including individuals from different regions or international backgrounds could have enhanced the variability in music exposure and produced more accurate and meaningful results.

10.Familiarity with the actual sound of each music style is essential for accurate reporting. Since many participants lacked prior exposure to several genres, their responses may not reflect true preference, reducing the reliability of the data.

5.3 *Suggestions*

1. Provide sound clips of each music style to improve familiarity.

2. Use a larger and more diverse sample.
3. Include Indian music genres or culturally adapted scales.
4. Use correlation or regression on continuous scores instead of categorization.
5. Explore additional personality traits and all STOMP dimensions.

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