

Research Paper

## Relationship between Musical Capacity and Big Five Personality Traits: A Study among Emerging Adults

Febin George Jacob<sup>1\*</sup>, Nithya B Nair<sup>2</sup>, Almithra Binu<sup>3</sup>, Elvin Thomas George<sup>4</sup>,  
Daniel V Jacob<sup>5</sup>, Tilu Jacob<sup>6</sup>, Anisha Rajan<sup>7</sup>

### ABSTRACT

Musical capacity is the ability of an individual to recognize and understand different emotions conveyed through music. A previous study showed that different cognitive and physiological changes were elicited while listening to music. Individuals may rely on music in order to regulate their emotions. The prime focus of this study was to examine the association between factors peculiar to musical capacity and Big Five personality traits. All 110 participants were selected using a convenience sampling method. Ten-Item Personality Inventory (TIPI) and a module from MUSEBAQ were used to measure personality traits and musical capacity respectively. The data collected using Google Forms was analysed based on a correlational research design. Big Five personality traits included extraversion, agreeableness, conscientiousness, emotional stability and openness to experience. Listening sophistication, emotional sensitivity, music memory and imagery, personal commitment and indifference to music were the factors of musical capacity. Listening sophistication was discovered to have a strong correlation with the five robust factors of personality. All the factors of musical capacity were found to have a significant correlation with the openness to experience trait of personality. Indifference to music was found to be significantly correlated with conscientiousness. More studies have to be conducted including a larger sample size covering a diverse population. Since this is the first study to link musical capacity with personality traits, a new avenue for understanding personality traits based on how people listen and respond to musical stimuli was explored.

**Keywords:** *Musical Capacity, Big Five Personality, Music Listeners, Emotions*

<sup>1</sup>UG Student, MG University, Kerala, India

<sup>2</sup>UG Student, MG University, Kerala, India

<sup>3</sup>UG Student, MG University, Kerala, India

<sup>4</sup>UG Student, MG University, Kerala, India

<sup>5</sup>UG Student, MG University, Kerala, India

<sup>6</sup>UG Student, MG University, Kerala, India

<sup>7</sup>Assistant Professor, MG University, Kerala, India

\*Corresponding Author

Received: December 30, 2022; Revision Received: February 20, 2023; Accepted: February 22, 2023

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The personality of an individual depends upon the way in which they think, act, and feels. Even if we believe that music and personality are connected, it is essential to conduct more studies to understand the interrelation allying personality traits and music variables. The capacity of the human brain to learn and recognise music that is expressed in any form is referred to as musical capacity (Faßhauer et al., 2015). Some studies focused on the physiological and psychological effects that music has on the human body. Music which can be used for emotion and mood regulation elicits subcortically mediated affective reactions like immediacy, automatic appraisal, and involuntary physiological and behavioural changes (Peretz et al., 1998).

Based on previous studies, musical preferences were found to be influenced by the personality traits they possess. Creative, open-minded, and unconventional (openness) individuals were having novel and sophisticated musical preferences; extraverted and agreeable people preferred traditional and upbeat music whereas conscientious and neurotic individuals were likely to hear rebellious and intense music (Chamorro-Premuzic, 2010; Dunn, 2012; Langmeyer, 2012). Neurotic individuals used music for managing emotions whereas conscientious people were not able to do so; openness to experience prevised cognitive music use, music is employed by extraverted individuals to avoid distraction or as background (Chamorro-Premuzic et al., 2009). Likewise, it is essential to discover whether or not an individual's sensitivity and potential for listening to, perceiving, and interpreting the emotions expressed in music alters according to their personality factors.

Although there were many studies supporting the relationship between personality traits and musical preferences, the study conducted by Nusbaum et al. (2011) contradicts those results. There was an absence of self-reports to measure individual perception, sensitivity, and capacity for listening and experiencing music. However musical capacity depicts an individual's perception and responses to various emotions conveyed in music. To our knowledge, this is the first study to find whether there is any link shared by the robust personality dimensions and different factors of musical capacity.

### *Objective*

The major goal of this study is to explore the linkage between personality factors and factors of musical capacity through which we can understand whether variation in personality traits influences the perception, sensitivity, capacity and emotion conveyed in music.

### *Hypotheses*

- There is no significant relationship between listening sophistication and Big Five personality traits.
- There is no significant relationship between emotional sensitivity and Big Five personality traits.
- There is no significant relationship between music memory and imagery and Big Five personality traits.
- There is no significant relationship between personal commitment and Big Five personality traits.
- There is no significant relationship between indifference to music and Big Five personality traits.

## METHODOLOGY

### Sample

This study is intended to find the relationship between musical capacity and personality traits of college students. 110 participants including 36 males and 74 females from the emerging adulthood population participated in this survey. The participants were college students from different states including Kerala, Tamil Nadu, and Karnataka and they were asked to complete the questionnaire.

### Instruments

Ten-Item Personality Inventory (TIPI) and a module from MUSEBAQ were used to measure the personality traits and musical capacity of participants.

- **Ten-Item Personality Inventory (TIPI):** Gosling et al. (2003) developed Ten-Item Personality Inventory (TIPI) which is a 10-item short inventory to assess the Big Five dimensions (openness to experience, emotional stability, extraversion, agreeableness, and conscientiousness). Each of these traits had two items; one was positive and another was a negative statement where each item contained two descriptors (ex. I see myself as extraverted, enthusiastic). It had a six-week test-retest reliability of 0.72. Seven-point Likert scale from strongly agree to strongly disagree was used as a rating scale for the participants to respond.
- **MUSEBAQ:** Musical capacity was measured using a module from MUSEBAQ (Chin et al., 2018). It is a modular tool for music research consisting of 4 modules: musicianship, musical capacity, music preferences and music use motivations. The musical capacity module was the one which was used in this study. This module had 24 items with 4 subscales (Listening sophistication ( $\alpha=0.81$ ), Emotional sensitivity ( $\alpha=0.90$ ), Music memory and imagery ( $\alpha=0.81$ ), Personal commitment ( $\alpha=0.77$ ), Indifference to music ( $\alpha=0.59$ )). Five-point Likert scale where the participants can reply from strongly agree to strongly disagree was implied.

### Procedure

The survey was conducted using Google Forms and consent from participating individuals was taken before administering the survey. The participants were selected using a convenience sampling method and were allocated 5 to 10 minutes during their leisure time to complete the survey. The collected data was analysed using SPSS- 28.0.1.1(14) to check whether there is any correlation between personality traits and factors of musical capacity. Spearman bivariate correlation was used to find the relationship between the variables.

## RESULTS

*Table No. 1 Correlations between Musical Capacity and Big Five Personality Traits*

	Listening Sophistication	Emotional Sensitivity	Music Memory and Imagery	Personal Commitment	Indifference to Music
<b>Extraversion</b>	0.469**	0.036	0.026	-0.064	0.015
<b>Agreeableness</b>	0.233*	-0.099	-0.040	-0.002	-0.150
<b>Conscientiousness</b>	0.658**	0.045	-0.007	0.147	-0.382**
<b>Emotional Stability</b>	0.666**	-0.049	-0.037	-0.001	0.058
<b>Openness to Experience</b>	0.697**	0.191*	0.218*	0.266**	-0.222*

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Listening sophistication was found to be significantly and positively correlated with extraversion ( $r=0.469^{**}$ ), agreeableness ( $r=0.233^*$ ), conscientiousness ( $r=0.658^{**}$ ), emotional stability ( $r=0.666^{**}$ ), and openness to experience ( $r=0.697^{**}$ ). As listening sophistication was correlated with all Big Five personality traits, the null hypothesis "There is no significant relationship between listening sophistication and Big Five personality traits" was rejected.

As emotional sensitivity was having a positive significant correlation with openness to experience ( $r= 0.191^*$ ), the null hypothesis "There is no significant relationship between emotional sensitivity and Big Five personality traits" was partially rejected. Music memory and imagery were found to be positively and significantly correlated with openness to experience ( $r= 0.218^*$ ). Therefore, the null hypothesis "There is no significant relationship between music memory and imagery and Big Five personality traits" was partially rejected. There was a positive significant correlation between personal commitment and openness to experience ( $r=0.266^{**}$ ). Thus, the null hypothesis "There is no significant relationship between personal commitment and Big Five personality traits" was partially rejected. Indifference to music was negatively and significantly correlated with openness to experience ( $r= -0.222^*$ ) and conscientiousness ( $r= -0.382^{**}$ ), therefore we can partially reject the null hypothesis "There is no significant relationship between indifference to music and Big Five personality traits".

### DISCUSSION

Listening sophistication refers to the ability of an individual to sing or hum a new song, or describe to someone else a piece of music they have heard. Those individuals are very curious about unfamiliar music and possess a keen ear for music as well. Optimistic and traditional music, as well as energetic and rhythmic music, were found to be associated with extraversion (Rentfrow & Gosling, 2003). While in our study we found that listening sophistication had a positive correlation with extraversion i.e., individuals who are curious to hear unfamiliar music were more sociable and may easily adapt to new situations. Extraverted people are more talkative, so they may be able to easily explain what they have heard when compared to introverts. Agreeable people who are more generous, sympathetic, cooperative and not aggressive were found to be associated with the listening sophistication factor of musical capacity; conscientious individuals who are hard-working, not careless, impulsive, dependable, responsible, self-disciplined, thorough, and organised have a positive correlation with listening sophistication. In conclusion, generous and organised individuals can excel in explaining a piece of music to others. According to a study conducted by Vuoskoski & Eerola (2010), emotional stability was positively associated with felt melancholy in the film soundtrack. From the relationship between listening sophistication and emotional stability, we came to the conclusion that individuals who are calm, relaxed and self-confident are open to hearing new songs and are able to explain what they have heard to other people.

Individuals with high openness to experience are open-minded, imaginative, deep, reflective, curious, creative, and unconventional. Music is crucial in assisting young people in forming relationships with their peers and exploring their personalities (Delsing, 2008). Listening Sophistication, emotional sensitivity, music memory and imagery, personal commitment and indifference to music were found to have a significant correlation with the openness to experience trait of personality. Listening sophistication was found to have a remarkable association with openness to experience. Individuals who have high levels of openness to

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experience are curious and they enjoy trying new things. We found that such individuals are fond of humming a new song and are curious about unfamiliar music they hear.

Emotional sensitivity refers to the capacity of an individual to experience strong emotions in particular types of music they hear and can also experience emotions expressed by performers. Supporting the same we found that emotional sensitivity has a notable connection with openness to experience traits of personality. Individuals who are deep, reflective, and open-minded are able to experience the emotions conveyed through music. Such people appreciate music for its beauty or sublimity; they have a unique ability to capture emotions experienced by other listeners. They sway their bodies or tap their feet while listening to a piece of music. They might also experience chills from moving music, tears in their eyes, and feelings of wonder and fascination.

Music memory and imagery refer to the ability to elicit vivid memories from the past and see detailed pictures in their head and those images appear without any effort. Those individuals found it difficult to stop reliving their past experiences while listening to a particular type of music. According to this study, music memory and imagery was having a strong association with openness to experience i.e., imaginative and creative individuals can easily retrieve their past memories by hearing a specific kind of music.

The personal commitment factor shows an individual's interest to spend time online looking for music, choosing each piece of music they listen to, getting involved in it and sometimes may lose track of time or place. Such individuals are not able to live without music and may gradually become addicted. We were able to establish a link between personal commitment and openness to experience traits of personality. From our findings, we concluded that open individuals who are receptive to a deeper examination of their own thoughts, feelings and values are more prone to get addicted to music.

Indifference to music depicts an individual's indifferent approach to the presence of music. They easily get bored and never feel like dancing to music. According to a study conducted by Schäfer & Mehlhorn (2017) individuals who score well on openness to new experiences are more likely to enjoy music in general. This is consistent with the findings of this study where we found that indifference to music was negatively related to openness to experience i.e., individuals who are curious and unconventional are more likely to get entertained by music. Indifference to music was also found to have a negative significant relation with conscientiousness. Highly conscientious individuals who are organised, dependable, responsible, and impulsive are more interested in listening to music compared to others.

There were a few limitations to this study that must be taken into consideration while interpreting the results. One of the major limitations of this study was that self-reports of personality traits and factors of musical capacity may not always be accurate. As no prior research was conducted on this topic, there were no sufficient theoretical foundations to understand more about the factors of musical capacity. Only 110 subjects participated in this survey, therefore more studies have to be conducted including a larger sample size. Further research including a larger sample size covering a diverse population helps in understanding more about the various emotions conveyed through music.

The main objective of this research was to find whether there exists any relation shared between the big five personality dimensions and musical capacity factors. Listening

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sophistication is associated with all Big-Five personality traits i.e., personality tends to influence how the individual interprets and understands different elements in each piece of music they hear. Another significant result obtained was that all factors of musical capacity were found to be related with openness to experience; there was also a significant association between indifference to music and the conscientiousness trait of personality. Since this is the first study to link musical capacity with personality traits, a new avenue for understanding personality traits based on how people listen and respond to musical stimuli was explored.

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### Acknowledgement

The author appreciates all those who participated in the study and helped to facilitate the research process. Their contributions are acknowledged however their names cannot be able to be mentioned.

### Conflict of Interest

The author declared no conflict of interests.

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***How to cite this article:*** Jacob, F. G., Nair, N. B., Binu, A., George, E. T., Jacob, D. V., Jacob, T. & Rajan A. (2023). Relationship between Musical Capacity and Big Five Personality Traits: A Study among Emerging Adults. *International Journal of Indian Psychology*, *11(1)*, 845-851. DIP:18.01.087.20231101, DOI:10.25215/1101.087