

Fine Tuning the Understanding of Self: Exploring the Role of Musical Instruments on Personality

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ABSTRACT

Music has been found to be connected to the very essence of being human. Historically, it has been linked with human behaviour, well-being and experiences in various ways across cultures. Previous research exploring these domains have focused specifically on the preference of music determined by one's listening behaviour. But, in this study, the experience of playing a particular instrument which produces music has been given the utmost importance. The various domains of personality were studied from the perspective of a musician, their years of training/experience, and the type of musical instrument that they play. The research (N= 74) also dealt with the roles of age and gender of the participants in the choice of the musical instruments and further its relation to the factors of personality. The findings suggested that the personality domains agreeableness and openness varied significantly in case of the type of instrument the participants play. Results also indicated that age and gender has an important role to play along with the type of instrument and years of experience that a musician has. Interaction effects were found between the variables in terms of openness to experience and agreeableness which has been discussed.

Keywords: Fine Tuning, Musical Instruments, Personality

There are some physical or mental characteristics of the so-called "inner life" that have formal qualities with music, such as patterns of motion and rest, tension and release, agreement and disagreement, preparation, fulfilment, stimulation, rapid change, etc. (Langer, 1942). Any apparatus used to create music is referred to as a musical instrument. The main categories of instruments are grouped according to how they produce sound. Nearly all human cultures had musical instruments; archaeology has uncovered pipes and whistles from the Palaeolithic and clay drums and shell trumpets from the Neolithic periods. It has been unequivocally demonstrated that the ancient city cultures of Mesopotamia, the Mediterranean, India, East Asia, and the Americas all held a wide variety of well-developed musical instrument collections, suggesting that a significant historical development must have existed. Music serves the purpose of improving the quality of human relationships and individual experiences in some way as it cannot be separated from its value as a representation of human experience (Blacking, 1995) Since the beginning of time, people have used musical instruments for a range of activities, from entertaining concert audiences

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to providing music for dances, rituals, work, and healing. Despite being occasionally viewed with suspicion because of their ties with the secular world, the employment of instruments in religious ceremonies has persisted up to the present day. Which suggests that instrumental music preference or experience may have a connection with human behavior and personality. Instruments have been categorised in a number of ways, some of which overlap. The materials from which they are made— for instance, stone, wood, silk, and metal—are used to categorise them in Chinese culture. Three basic categories of instruments were identified by writers in the Greco-Roman era: wind, stringed, and percussion. Hindus, at least as early as the first century BC, recognised a separate four-fold classification: they acknowledged stringed instruments, wind instruments, percussion instruments of wood or metal, and percussion instruments with skin heads (i.e., drums). A variety of instruments fall under the broad category of percussion instruments, which make noise when struck, shaken, rattled, or scraped with a hand, stick, or other similar instrument. Drums, cymbals, maracas, xylophones, triangles, tambourines, and many more are examples of these instruments. String instruments have a series of strings that vibrate when pulled, struck, scraped, or rubbed with a bow to create sound at different pitches. The length of the air column inside these instruments has a significant impact on the pitch of the sound it produces. The thickness of the strings employed in the instrument has a big impact on pitch as well. The double bass, guitar, violin, mandolin, cello, harp, and mandolin are some examples of string instruments. Instruments that are played using levers, buttons, or keys to make sound are referred to as keyboard instruments. The piano and organ are the most popular of these instruments, but there are many different keyboard instruments available.

Music has been closely involved in our day to day lives and there is nobody who is totally untouched by some form of music. Psychologists have been keen in studying the personality traits that distinguish a musician from a non-musician. Some common stereotypes are also attached with musicians like it has often been seen that people who play trumpet are characterised as proud, detached and dominating, whereas attributes like feminine, more intelligent and shy are associated with those playing woodwind (Woody II, 1999). In a paper, the author mentions LeBlanc's theory which states that musical judgement is a hierarchical process which has seven different levels of which one level involves personality as well (Perkins, 2008). Many studies have tapped on the music preferences of people and their personality but very few studies have taken into account the expertise or experience of playing an instrument and the type of instrument in and as a determining factor of personality traits.

One of the influential theories of personality proposed in the 20th century is the Five Factor Model of personality proposed by McCrae and Costa. This theory of personality consists of 5 factors –Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness, the factors being defined as groups of inter - correlated traits.

The factors are as follows –

- **NEUROTICISM:** This is the most pervasive domain of the personality scale contrasting adjustments or emotional stability with maladjustment of neuroticism. The general tendency to experience negative effects such as fear, sadness, embarrassment, anger, guilt & disgust, in the core of 'N' domain. Individuals who score low on neuroticism are emotionally stable, usually calm, even-tempered and have a relaxed temperament.
- **EXTRAVERSION:** Extraverts are sociable, assertive, active, energetic, optimistic and cheerful. 'E' domain scale is strongly correlated with interest in enterprising

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occupation. Introversion should be seen as the absence of extraversion rather than what might be assumed as opposite.

- **OPENNESS:** As a major dimension of personality, openness experienced is much less known. The elements of 'O' refers to the active imagination, aesthetic sensitivity, attentiveness to feelings. Men and Women who score low on 'O' tend to be conventional in behaviour & conservative in outlook.
- **AGREEABLENESS:** It is primarily a dimension of interpersonal tendencies. Here the person is fundamentally artistic, sympathetic to others, equally helpful in return. In contrast, a disagreeable person is ego-centric, competitive rather than co-operative.
- **CONSCIENTIOUSNESS:** It refers to the degree of self-control in planning, organizing. Conscientiousness is associated with academic and occupational achievements.

Theorists argue that the five traits exist in everyone but their intensity varies causing variations in personality (Torrance & Bugos, 2017). The classic research by Kemp (1981) assessed personality traits using Cattell's 16 PF. He found that musicians who were professional in nature showed features of introversion, anxiety, pathemia, intelligence, naturalness and subjectivity. Many studies found a strong correlation between the personality trait and the choice of instrument (Cameron et al., 2015; Waterman & Funder, 2021). Similar research by Bogunović (2012) tried to recreate Kemp's classic study and found that differences in different instrumental groups exist on domains of Extraversion, Openness and Agreeableness. Openness to experience and neuroticism was found in many studies as typical to those who are high on creativity. A recent study by Kuckelkorn et al (2021) pointed out an inconsistent pattern among personality traits and types of instruments played by the participants. Though this study considered three groups, professional musicians, amateur musicians and non-musicians. In this same study, openness to experience and extraversion were found higher in musicians in comparison to non-musicians.

In yet another research, (Iuşcă, 2021) the author discusses some personality traits crucial to a musician. The study illustrates 10 important traits in a successful music performance which are: androgyny, originality, independence, self-motivation, perseverance, sensibility, high capacity of interpersonal communication, extroversion, the need for attention and trait anxiety.

METHODOLOGY

Sample

Responses were collected from 74 participants who were aged between 17 to 29 years (M= 22.29; S.D.= 5.00) of age, out of which 27 were females. The participants belonged to middle socio-economic status. The sample was collected using incidental sampling technique.

Measures

- **Demographic sheet-** The demographic sheet of the participants contained information regarding the instrument they played and the duration for which they have been learning or practising the instrument. Information like age, gender, nationality, socio economic status and history of mental illness was also recorded.

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- Personality Inventory-** The Big Five Inventory (John & Srivastava, 1999) was used to assess personality traits. The scale measures five domains, the first domain being Openness to experience which can be characterised as excited, imaginative and artistic with a wide range of interests and desire to explore the world. The second domain is Extraversion which refers to traits like sociability, enthusiastic, outgoing and energetic who loves adventure, are high on risk taking and assertion. The third domain is Conscientiousness which stands for qualities like competence, carefulness, non-impulsiveness, organization and efficiency. The fourth domain, Agreeableness, can be defined by attributes like warmth, forgiveness, modesty, sympathy and being not stubborn. The last domain namely Neuroticism mentions traits like irritable, tense, shy, moody and vulnerable under its ambit.

Statistical analysis

The mean scores of the five domains were calculated and outliers were removed. The participants were divided into two groups on the basis of experience they have in playing the instrument. Broadly, three types of instrument categories were used for the study namely, keyboard, strings and percussion. Participants were also divided into two groups based on age, i.e., 17 to 23 years and 24 to 29 years.

A multivariate analysis was conducted with five domains of personality as dependent variable and age, experience, gender and type of instrument as independent variable.

RESULTS

Table 1: showing mean scores on the domains of personality

Mean Scores			
Source		Openness to experience	Agreeableness
Type of instrument	Keyboard	24.113	23.975
	String	22.576	22.533
	Percussion	24.500	25.867
Gender	Female	24.126	23.350
	Male	23.303	24.315
Instrument*Gender	Keyboard	Female	22.627
		Male	25.600
	String	Female	24.333
		Male	21.258
	Percussion	Female	28.000
		Male	23.625
Age*Gender	17- 23 years	Male	23.00
		Female	23.67
	23-29 years	Male	23.66
		Female	25.20
Experience*Gender	Less than 4 years	Female	26.889
		Male	23.367
	More than 4 years	Female	22.054
		Male	23.227

Table 2 : showing multivariate analysis

Source	Dependent Variable	df	F
Type of instrument	Agreeableness	2	4.528**
	Openness	2	2.957*
Gender	Openness	1	3.939**
Experience*Gender	Openness	1	3.110*
Age*Gender	Agreeableness	1	5.770**
	Openness	1	4.082**
Instrument*Gender	Agreeableness	2	2.922*
Age*Experience*Instrument	Openness	1	3.515*
Experience*Instrument*Gender	Openness	1	4.674**

**- significant at .05 level

*- significant at .10 level

DISCUSSION

The result table only contains values on two domains of personality, i.e., “openness to experience” and “agreeableness” as these are the only domains which were found significant in regard to age, gender, experience and type of instrument played by the musicians.

The findings, considering the type of instrument that the participants play, show significant differences in the domains of agreeableness and openness to experience. The data of the participants were divided into three groups based on the type of musical instrument they play, i.e., Keyboard, Percussion and String instruments. It is found that people playing percussion scored higher on both domains in comparison with the musicians playing other types of instruments, namely string and keyboard.

Females who were more experienced and played percussion were found to be higher on openness than males with less experience. Males who have more experience and play keyboard were found to score higher on openness. In general, females were found to be comparatively more open to new experiences in comparison to males. In addition to that, a trend indicated that males prefer playing “keyboard” more and females prefer “percussion” more. Interestingly, males also scored higher than females on the “agreeableness” domain. Though the social settings of India do accommodate females to be more agreeable to the societal norms, this domain also includes a trait of being more “artistic” besides being cooperative rather than competitive. Moreover, males with less experience are likely to benefit more by cooperating with the teacher/mentor and the students alongside rather than competing with them. In a situation like this, it is imperative that people choose cooperation over competition. It is also noteworthy that when males have gained experience and most likely expertise along with it on the instrument, they do not tend to be more agreeable than females (Balliet,2011). So, the findings should not be seen in light of gender alone but also highlighting the situation and the need to cooperate to gain mastery over the skill.

On the other hand, females with less experience who played keyboard and strings, scored higher on openness to experience. A plausible explanation for this may lie in the instrument type itself. Since, percussion is considered to be a difficult skill to master (Krehl,2001), it is more likely that females gain the skill first and then try any experimentation in that, whereas more exposure for new tunes on keyboard and string are available, hence females playing keyboard and string consider experimenting crucial and open to subjectivity before mastery.

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The investment theory approach suggests that personality traits can shape a person's cognitive ability as the personality largely predisposes one to certain kinds of stimuli, hence developing a preference in a specific field. Openness to music is also associated with broader engagement of music. A less experienced musician tries and experiments with different kinds of music, before the musician develops a firm taste through continuous experience and training (Thomas, 2016). This suggests that musicians with less experience are more eager to learn or experiment with new methods available. People with more experience find it difficult to accommodate newer information or preferences due to mental fixedness or preference fixedness to a certain kind of music or instrument whereas people who are open to new experiences are more likely to be deeply contemplative and open-minded about the concepts they come upon (McCrae & Costa Jr., 1997). The studies put forward that openness to experience is crucial not only to music per se but to any creative art form (Surkova, 2012). Openness to experience provides the musician an edge as it is closely related to better understanding of the aesthetics, auditory discrimination (Thomas et al., 2016) and emergence of imaginative processes, both of which are vital for any form of creativity.

Gender has been found to play a detrimental role in the choice of instrument. Some instruments like harp, flute, clarinet, violin etc are preferred by females whereas instruments like drums, electric guitar, tuba etc have males as their players usually (Hallam et al., 2008). Since the choice of instrument is gender stereotyped and gender plays such a vital role in choice of instrument, it is only logical to explain one in the light of the other. In the present study, Significant differences were found in the domain of agreeableness in respect to gender and type of instrument. Extraversion domain of personality did not show any significant differences in context to either gender or type of instrument. Females who played percussion were found to be significantly higher on all domains of personality than males, except for extraversion. Extraversion was not found significantly different for males and females. A study by Rose et al., (2019) shows that musicians are overall more open to new experiences and have not reported any significance between male and female musicians on extraversion. It is important to understand that the social settings in India demand females to be more organised and agreeable. Therefore, a pre post analysis could actually reveal the effects music has in determining the changes in personality.

The multivariate analysis further reveals an interaction between age and gender indicating males who are young significantly differed and scored higher than females on the domain of agreeableness. Males are also most likely to be more agreeable as the music industry in India is female dominated and young males find it difficult to assert themselves in front of an opposite sex mentor. Since there is no research on music and personality through the lens of gender in the Indian context, it is difficult to reach a concrete reason. The females who are young have been found to score higher than males on openness to experience. Since it is a women centric industry in India, it is likely that women experience some freedom into trying new things and experimenting before making a firm choice.

To have a deeper insight into the personality traits of musicians, various interaction effects were calculated. An interaction between type of instrument, age and experience of the musicians showed significant differences on the domain openness to experience. Musicians who have less experience and prefer to play percussion were found to be scoring higher on openness to experience in comparison to those who had more experience whereas those who had less experience. Musicians who have less experience are more likely to be open to experimenting and acquiring new skills. Musicians with less experience are also more likely

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to be more agreeable as they are comparatively new to learning music and acquiring the skill. It is probable that people find it difficult to learn keyboard in comparison to percussion instruments (Krehl, 2001).

The interaction of age, experience and type of instrument also shows that people who belong to the younger age group, i.e., 17-23 significantly differ from the older musicians in terms of Openness. The younger musicians prefer playing percussion more whereas the older musicians prefer keyboards more. The younger age group were found to be significantly scoring higher in the domain of openness. The findings of the study can be deeply grounded into cultural and social aspects. The older age group most likely had exposure and access to keyboard more than percussion and string instruments because of its traditional value in the Indian cultural context. Younger people are more inclined towards experimenting with new ideas and creating music in new ways using traditional as well as modern instruments. The Indian string instruments like sarod, veena etc are believed to be difficult to learn and play as well. More studies in the Indian context will better reveal support to the findings obtained in this study.

The analysis shows that participants did not score differently on neuroticism and Conscientiousness and extraversion in terms of years of experience, age, gender or type of instrument they play. Studies have not found significant differences in musicians and non-musicians in regard to neuroticism and conscientiousness (Gjermunds et al., 2020). Conscientiousness has been found to be significantly more for older musicians (Bogunović, 2012). Another, more recent study (Kuckelkorn et al., 2021) found experienced or professional musicians to be significantly higher on neuroticism than non-musicians or inexperienced musicians. Extraversion is found significantly associated with music genres like rap, soul and UC (Vella & Mills, 2017) in previous studies showing association of extraversion with experience in music is limited. Since the participants in our present study practice instruments out of hobby and not for performances, it is less likely for them to be high on neuroticism. Playing in front of an audience and feelings of being judged can be seen as a viable reason for neuroticism in many musicians (Ormel et al., 2013). Moreover, singers are found to be high on extraversion in previous studies as they interact with the audience directly. Musicians generally have indirect contact (Heller et al., 2015). Music is more often than not treated as a retreat for solace and enjoying one's own company, therefore, high scores on extraversion would have been incongruent with the sole purpose of playing an instrument in the Indian setting. Previous findings also suggest Conscientiousness to be significantly low in experienced musicians (Kuckelkorn, 2021). Conscientiousness which can be inferred as qualities like carefulness, organization etc which is more likely in people with less experience as they have still not mastered it whereas for those who are experienced, music becomes a source of pleasure and does not require careful, non-impulsive, organisation to produce music. Agreeableness was also found to be significantly low in people who have experience in playing instruments as is congruent with previous study (Kuckelkorn, 2021).

Overall, string instruments are least likely preferred in comparison to percussion and keyboard. A crucial and inevitable role of the "Openness to experience" domain of personality emerged significant for almost all aspects of musicians suggesting that Openness to experience is undoubtedly among the glaring features of musicians. Extraversion, Conscientiousness and Neuroticism domains were not found significant in any aspect related to age, gender, experience or type of instrument that they play.

CONCLUSION

Musicians were found to score high in the “Openness to experience” domain on various aspects in terms of the type of instrument and gender. These are, however, only preliminary findings in the Indian setting and more research in this direction can bring clarity. Moreover, most of the studies which are available in other cultures have also focused more on music preferences of individuals with respect to personality and not on musicians and their expertise. The findings show a trend that younger and less experienced musicians are more inclined to play percussion whereas older and more experienced musicians prefer the keyboard. The findings also reveal that the type of instrument has some role to play in some of the personality domains. Hence, it may be said that personality is one of the major factors that makes musicians inclined towards one particular type of instrument.

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Conflict of Interest

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