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Is Personality and Creativity Related to Music Preferences and Uses of Music?

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ABSTRACT

Music plays a huge role in all our lives, yet we all connect with it in different ways. There has been ample research into whether music preferences and purposes for using music depend on individual characteristics. So far research has discovered significant relationships between personality, creativity, music preferences and uses of music. However, there is still a lack of research into the relationships between creativity and music preferences. Along with filling this research gap, the current study predicted to find significant associations between Neuroticism and 'Emotional' use of music; Openness and a 'Sophisticated' music preference; and Extraversion and 'Background' uses of music mediated by creativity. Convenience sampling was used to recruit a large sample (81 participants aged 18 to 89). Participants completed questionnaires on personality, creativity, music preferences (accompanied with music clips), and uses of music. Despite the main research hypotheses being rejected, further data exploration uncovered other significant associations between variables. Most importantly, this study made a remarkable contribution to research by finding a significant relationship between creativity and a preference for 'Intense' music. Future work is encouraged to further investigate and explain relationships between creativity and music preferences.

1. INTRODUCTION

Uses of Music. Music plays an integral role in human life. Music is special not only for its ubiquity (Levitin, 2019), but also its versatility. Whilst traditionally music has been used for entertainment and religious ceremonies, nowadays music is used for many additional purposes. In fact, music currently has a role in over 40 different activities including relaxation, cooking, working, or to simply use whilst surfing the internet (IFPI, 2023). Indeed, as we are now able to access music in more ways than ever (IFPI, 2023), it is not surprising we see music being used in more everyday settings (North et al., 2004).

Personality and Uses of Music. "As a tool for arousing feelings and emotions, music is better than language" (Levitin, 2019). Whilst some indeed listen to music for emotional regulation, other people use music for intellectual purposes or in the background during other activities (Chamorro-Premuzic et al., 2009). In fact, Chamorro-Premuzic et al. (2009) found different uses of music were significantly related to different personality traits: students who scored higher in Openness were more likely to listen to music for 'Cognitive' reasons; those scoring higher in Neuroticism for 'Emotional' purposes; and those scoring higher in Extraversion for 'Background' uses.

More recent studies showed similar results, once again finding positive associations between Neuroticism with 'Emotional' uses of music (Vella & Mills, 2016) and Extraversion with 'Background' uses of music (Surkova, 2012). Interestingly, another recent study analysed the relationship from a different perspective: whether listening behaviour on *Spotify* can predict personality (Anderson et al., 2020). In line with the previous literature, scoring high on Neuroticism was associated with listening to music for emotional regulation.

However, personality may not be the only factor which can explain why we listen to music. Indeed, Chamorro-Premuzic et al. (2009) acknowledged that individual differences aside from personality may shed light on this phenomenon. They proposed future studies could build on their model by not only looking at intelligence and personality, but also considering whether individual creativity and preference of music can predict uses of music. Following this recommendation, the current study shall investigate the relationships between personality traits and uses of music, whilst also considering the variables of creativity and music preferences.

Creativity and Music. Creativity is considered a skill which can be enhanced by listening to 'happy' styles of music (Ritter & Ferguson, 2017). Ritter and Ferguson (2017) found listening to music perceived as more arousing and more positively valenced (i.e., 'happy music') led participants to perform better on a divergent thinking task than those who performed in silence.

Inspired by this, Xiao et al. (2023) investigated the effects of different background music on creativity. They investigated how different styles of music with different valences, along with personal music preferences, impacted an individual's creativity. In contrast to Ritter and Ferguson's (2017) study, their most remarkable finding was that music eliciting negative emotions increased individual 'originality' in creative performance. This was in line with their finding that a 'sad music' preference led to greater creativity. With creativity as the outcome variable here, it would be interesting to analyse creativity as a predictor variable for music preferences.

There is a lack of research examining the relationships between creativity and music preferences. One study only investigated preferences for the emotional valence of music (Xiao et al., 2023), and another only investigated general music preferences using a limited list of genres popular in the participants' local area (Ziv & Keydar, 2009). Therefore, not only is more research required in this field, but also research using broader measures to determine the precise relationships between creativity and music preferences.

Creativity, Personality and Uses of Music. Creativity has been considered 'synonymous' with the personality trait 'openness to experience' (Brown et al., 2002). Lending credence to this idea is Surkova's (2012) finding that the trait 'openness to experience' significantly predicted one's level of creativity. If 'openness to experience' predicts creativity, and 'openness to experience' is linked to 'Cognitive' uses of music – as shown in Chamorro-Premuzic et al.'s (2009) findings – one may assume creativity would also be associated with 'Cognitive' uses of music. However, Surkova (2012) did not find this, but rather found creativity significantly predicted 'Background' uses of music. Perhaps this is because their study's results showed Extraversion also predicted creativity, and Extraversion predicted 'Background' uses of music. This is in line with Chamorro-Premuzic et al.'s (2009) finding that Extraversion predicted 'Background' uses of music. Interestingly, McCrae (1987) also found a correlation between Extraversion and creativity, and Xiao et al. (2023) found creative performance was significantly related to using background music. If our study also finds these same significant relationships, it would be interesting to test if creativity mediates a positive relationship between Extraversion and 'Background' uses of music.

Personality and Music Preferences. Finally, another popular topic amongst music psychology literature is investigating the relationship between personality and music preferences. Researchers Rentfrow and Gosling (2003) created the Short Test of Music Preferences (STOMP). Using the STOMP, they found the personality trait 'openness to experience' predicted a preference for 'Reflective & Complex' and 'Intense & Rebellious' music.

Rentfrow et al. (2011) then revised the STOMP model (STOMP-R) and introduced a new set of five labelled factors. The labels 'Reflective & Complex' and 'Intense & Rebellious' categories from the original STOMP were replaced with 'Sophisticated' and 'Intense', respectively, containing mostly the same genres. Thus, in light of Rentfrow and Gosling's (2003) findings, one would predict the personality trait Openness would now correlate with a preference for 'Sophisticated' and 'Intense' music. However, studies using this revised model have showed Openness correlated with not only a preference for 'Sophisticated' and 'Intense' music, but also for 'Mellow' (Bonneville-Roussy et al., 2013) or 'Unpretentious' (Fricke & Herzberg, 2017) music. That said, more recent studies using the revised model implied that although Openness may indeed correlate with other music preferences, the strongest and most significant association with Openness is a preference for 'Sophisticated' music (Fricke & Herzberg, 2017; Nave et al., 2018).

Interestingly, Devenport and North's (2019) factor analysis of the STOMP-R only resulted in four music preference factors. Looking at correlations between personality and music preferences, their results suggested those more 'open to experience' had a preference for a factor called 'Established' music. Perhaps 'Established' music is similar to 'Sophisticated' music; perhaps not. Whilst the genres they manifest are mostly the same, it is difficult to compare results across these studies as they use different terms to define styles of music. Therefore, since other recent studies in the field have used the five factors from Rentfrow et al.'s (2011) STOMP-R model to measure music preferences, this study shall also use the STOMP-R as a measure so our results can be consistent and reliably compared with other recent findings. Indeed, the STOMP-R is a broad measure with robust music preference factors, which also makes it a suitable tool to later investigate relationships between creativity and music preferences.

Notably, Rentfrow et al.'s (2011) paper suggested incorporating music clips into a music preference measure would help participants identify the genres and increase the ecological validity of the measure. Indeed, they found incorporating clips into their method yielded the same five-factor model for the STOMP-R, demonstrating its validity for measuring music preferences. It appears some studies investigating relationships between music preferences and personality have not included music clips in their method (e.g., Devenport & North, 2019; Fricke & Herzberg, 2017), perhaps challenging the ecological validity of their studies. This current study shall indeed include music clips to help participants identify each genre and increase the ecological validity of the study.

Research Aims and Hypotheses. In light of the findings from previous research, this study proposes three main one-tailed hypotheses: Neuroticism will have a significant positive correlation with using music for 'Emotional' purposes; Openness will have a significant positive correlation with a preference for 'Sophisticated' music; and creativity score will mediate a positive relationship between Extraversion and 'Background' uses of music.

In addition, using a suitable measure, this study will explore the precise relationships between creativity and a broad range of music preferences.

2. METHOD

Design. This study used a within-subjects correlational design. Primary correlational analyses were run between Neuroticism and 'Emotional' uses of music; and Openness and a preference for 'Sophisticated' music. A mediation analysis was also attempted with Extraversion as the predictor variable, creativity score as the mediator, and 'Background' uses of music as the outcome variable. Finally, an exploratory correlational analysis was run between creativity score and music preferences.

Participants. Convenience sampling was used to recruit participants by sharing links on social media and with personal contacts. Students were also recruited via Durham University's SONA Participant Pool. Subjects were eligible to complete the study if they were over 18 years old and had normal-to-corrected hearing. Previous studies in this field of research have used large sample sizes with around 100 subjects (e.g., Vella & Mills, 2016); therefore, this study also aimed to obtain a similarly large sample size. Participants who completed the study through the SONA Participant Pool were compensated 0.5 SONA credits; all other participants did not receive compensation.

Materials. The study consisted of short questionnaires, tasks and music clips. All measures used in the study are described below.

To collect demographic data, participants were asked to report their gender and age.

The 'Big Five Inventory-10' (BFI-10; Rammstedt & John, 2007) questionnaire was used to measure personality. The authors found the shortened version of this questionnaire still had great reliability and validity relative to the original model. Participants used a 5-point scale to rate to what extent a statement described their personality. There was a total of 10 statements: an example was "I see myself as someone who is reserved". Responses were then coded to produce overall scores for each of the five personality traits: Extraversion, Neuroticism, Contentiousness, Openness and Agreeableness.

The 'Divergent Association Task' (Olson et al., 2021) was employed to measure creativity. As Chamorro-Premuzic et al. (2009) recommended, measuring creativity with a divergent thinking task should overcome drawbacks of self-report measures of creativity. This divergent thinking task required participants to write a list of 10 unrelated nouns. Participants' lists of nouns were then translated into quantitative creativity scores using an algorithm. See Appendix A for further details.

The 'Short Test of Music Preferences-Revised' (STOMP-R; Rentfrow et al., 2011) questionnaire was used to measure music preferences. Participants were presented with 21 genres of music and were asked to listen to a corresponding music clip for each one. Participants then rated on a 7-point scale how much they liked that genre of music. Example of genres were 'Alternative' and 'Pop'. The 21 genres were assembled into five different 'dimensions', pertaining to Rentfrow et al.'s (2011) five-factor model. These dimensions were 'Mellow', 'Unpretentious', 'Sophisticated', 'Intense' and 'Contemporary'. The score for each dimension was calculated by averaging the ratings of the genres within that dimension. Notably, the original STOMP-R consists of 23 genres, but since the 'Soundtrack' and 'Oldies' genres do not load onto a single music preference dimension, these genres were not included.

The 'Uses of Music Inventory' (Chamorro-Premuzic & Furnham, 2007; Chamorro-Premuzic et al., 2009) questionnaire was employed to assess how participants used music. Participants used a 5-point Likert Scale to answer 15 statements about their relationship with music, an example being: "Whenever I want to feel happy I listen to a happy song". Responses were then coded to produce overall scores for each use of music: for 'Emotional', 'Cognitive' or 'Background' purposes.

Regarding music stimuli, the researcher received permission from Jason Rentfrow to access and use music clips from their study (Rentfrow et al., 2011). The music stimuli were considered to be not 'well-known'. There were several music clips for each genre, and so one was randomly selected to define each genre in our study. Any genres not covered in this set of stimuli were defined by a music clip sourced separately from the royalty free

music website *Jamendo Licensing* (2023). For these genres, the most recently released music clips were selected to minimise familiarity. All 21 music clips were cropped to 15 seconds to avoid fatigue effects. See Appendix B for further details.

Procedure. After participants gave consent to take part, they were entered into an online study hosted on *Qualtrics*. Figure 1 illustrates the steps of the procedure.

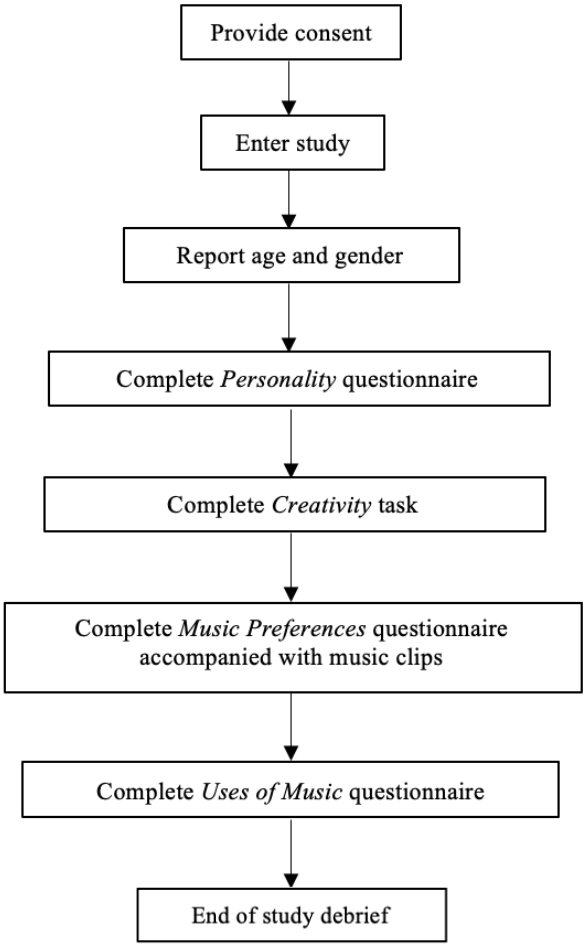

Figure 1. Steps of the Procedure

Data Analysis. One hundred and forty-nine subjects had entered and attempted the online study. However, not all participants reached the end of the study and so their data were removed, resulting in 83 data points. Two participants reached the end of the study but did not attempt any of the final three tasks and so their data were also removed. The final sample size was 81 participants. The participants' responses to each task were scored and coded, and a few missing data points were replaced with averages. Statistical analysis was then conducted on *JASP 0.14*, and the results are presented accordingly.

3. RESULTS

The analysis consisted of 81 participants covering a wide age range of 18 to 89 years old (M = 22.64; SD = 10.52). Table 1 shows the demographics of the sample.

Table 1. Demographics of Study Sample

Gender			Age		
	n	%	*M*	*SD*	Range
Male	26	32	23.81	10.05	42.00
Female	53	65	22.23	10.95	71.00
Non-Binary/ Third Gender	2	3	18.50	0.71	1.00

Note. N = 81.

In light of the research questions, only relevant variables from each measure were analysed. These included the personality traits Neuroticism, Openness and Extraversion; the 'Background' and 'Emotional' uses of music; all creativity scores; and all music preference factors. Table 2 shows the descriptive statistics for these selected variables of interest. After looking at the descriptive statistics of the variables, the main research questions were addressed.

Table 2. Descriptive Statistics for Variables of Interest

Variable	*M*	*SD*	Minimum	Maximum
Neuroticism	6.44	1.61	2.00	9.00
Openness	6.64	1.66	2.00	10.00
Extraversion	6.70	1.15	4.00	9.00
'Background' Uses of Music	3.45	0.60	2.20	4.60
'Emotional' Uses of Music	3.35	0.55	1.80	4.80
'Sophisticated' Music Preference	4.45	0.91	2.00	6.14
'Mellow' Music Preference	3.83	0.97	1.33	1.25
'Intense' Music Preference	4.51	1.34	6.33	6.75
Creativity Score	77.18	5.48	66.99	90.12

Note. $N = 81$.

Personality and Uses of Music. The first research question was whether there would be a significant positive correlation between Neuroticism and 'Emotional' uses of music. Analysis showed there was a weak and positive correlation, but no significant correlation ($r_{(81)} = .13$, $p = .123$). Therefore, the first hypothesis of this study was rejected.

Personality and Music Preferences. The second research question was whether there would be a positive correlation between Openness and a preference for 'Sophisticated' music. Analysis showed there was a very weak negative correlation, but no significant correlation ($r_{(81)} = -.01$, $p = .547$). Therefore, the second hypothesis of this study was also rejected. However, since literature shows Openness has correlated with other music preferences, the researcher ran correlations with the other music preference factors too. The only significant finding was a positive correlation between Openness and a preference for 'Mellow' music. Figure 2 displays this significant correlation.

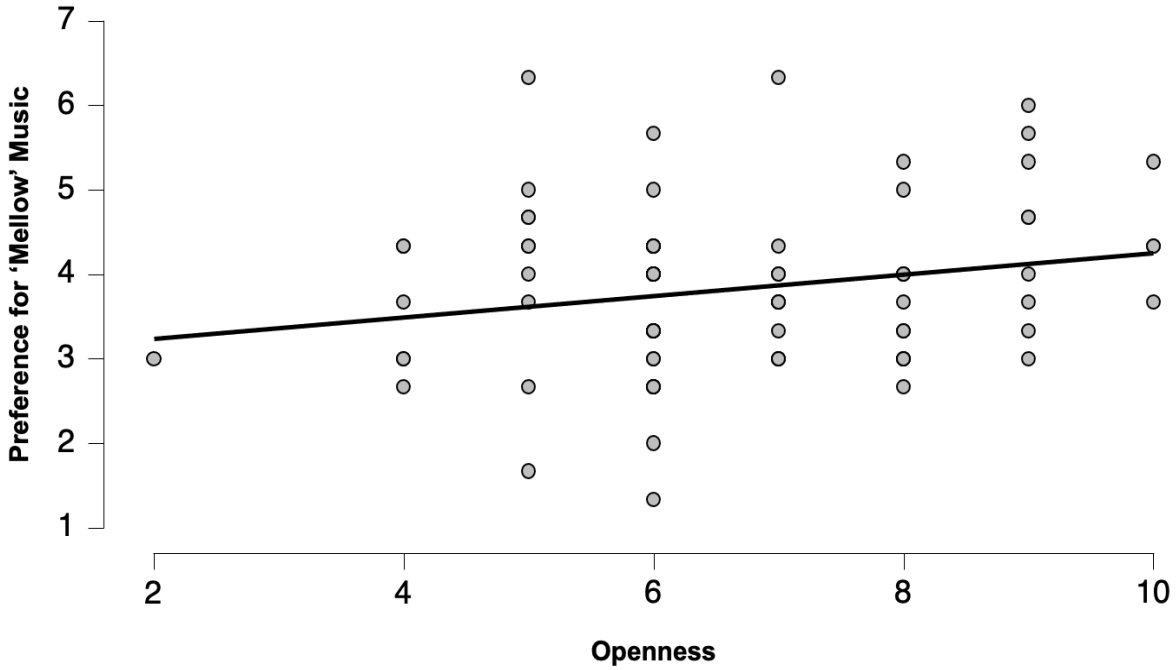

Figure 2. Correlation Between Openness and a Preference for 'Mellow' Music

To analyse this relationship further, a linear regression analysis was conducted. The data was screened for regression assumptions and outliers. Linearity, normality and homoscedasticity were all met. There were no outliers. Results showed Openness explained 4.7% of the variance in preference score for 'Mellow' music (R^2 = .047), and this was a significant amount of explained variance ($F_{(1, 79)} = 3.89$, $p = .052$). Specifically, a one-point increase in Openness significantly predicted a 0.13 increase in preference score for 'Mellow' music.

Personality, Uses of Music and Creativity. The third research question was whether creativity score would mediate the relationship between Extraversion and 'Background' uses of music. To answer this, a mediation analysis was attempted using the Baron and Kenny (1986) procedure. The first step was to analyse whether the predictor variable, Extraversion, significantly predicted the outcome variable, 'Background' uses of music. However, there was not even a significant correlation between these two variables ($r_{(81)} = .13$, $p = .133$), meaning there was no basis to test whether creativity mediated this relationship. Thus, the third hypothesis of this study was rejected.

Since it could not be tested as a mediator, creativity score was instead analysed as a correlational variable alongside the other two variables. Firstly, a correlational analysis was run between creativity score and Extraversion, and results revealed a significant positive correlation ($r_{(81)} = .30$, $p = .007$). Figure 3 illustrates this significant correlation.

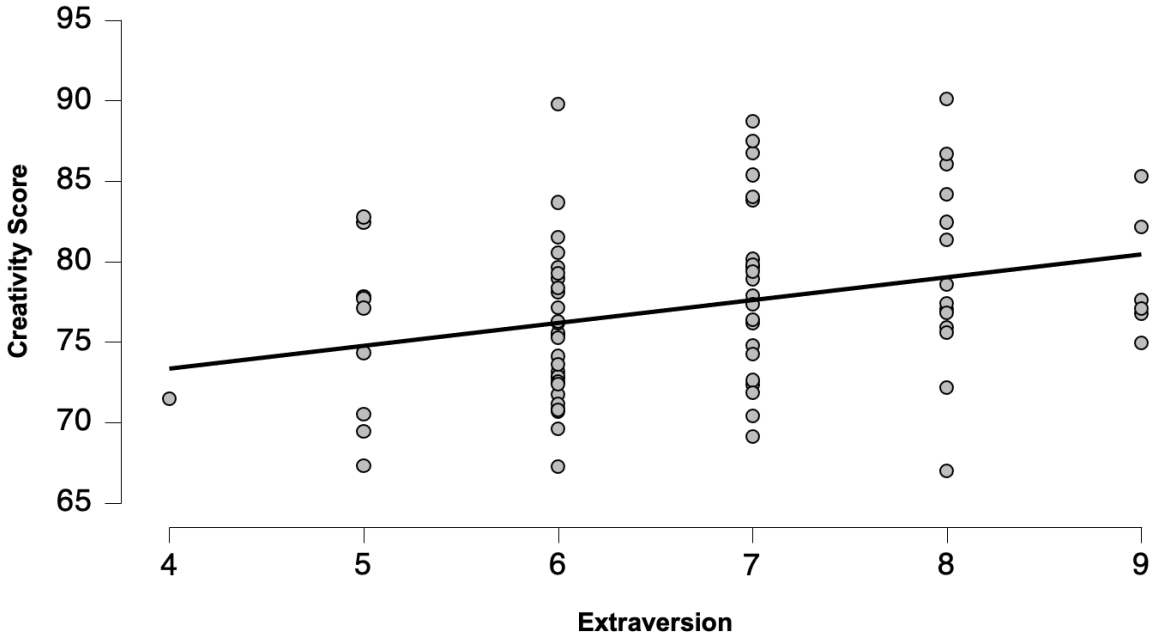

Figure 3. Correlation Between Extraversion and Creativity Score

To further analyse this relationship, a linear regression analysis was run. The parametric assumptions of linearity, normality and homoscedasticity were all met and there were no outliers. Results showed Extraversion explained 8.8% of the variance in creativity score ($R^2 = .088$), which was a significant amount of explained variance ($F_{(1, 79)} = 7.65$, $p = .007$). Specifically, a one-point increase in Extraversion significantly predicted a 1.42 increase in creativity score.

Another correlational analysis was then conducted between creativity score and 'Background' uses of music, and results also showed a significant positive correlation ($r_{(81)} = .13$, $p = .133$). Figure 4 shows this significant correlation.

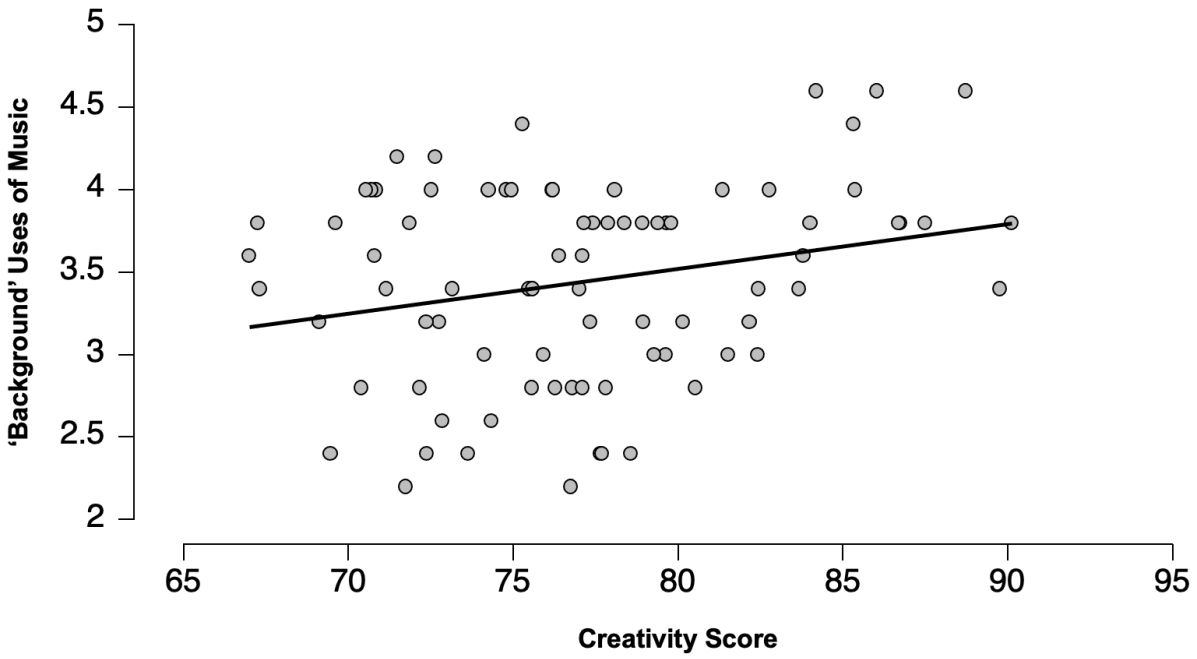

Figure 4. Correlation Between Creativity Score and 'Background' Uses of Music

A linear regression analysis was run to analyse this relationship further. Linearity, normality and homoscedasticity were all met and there were no outliers. Results showed that creativity score explained 8.8% of the variance in scores for using music for 'Background' purposes (R^2 = .061), which was a significant amount of explained variance ($F_{(1, 79)}$ = 5.14, p = .026). Specifically, a one-point increase in creativity score significantly predicted a 0.03 increase in score for using music for 'Background' purposes.

Creativity and Music Preferences. Finally, there was an exploratory correlational analysis to investigate whether there were any significant correlations between creativity score and different music preferences. Table 3 displays the correlations between creativity score and music preferences.

Table 3. Correlations Between Creativity Score and Music Preferences

Variable		'Mellow' Music	'Unpretentious' Music	'Sophisticated' Music	'Intense' Music	'Contemporary' Music
Creativity Score	*r*	-.05	.06	.17	.28*	.15
	p	.637	.577	.139	.013	.184

Note. r = Pearson's r correlation coefficient.

* = $p < .05$

The only significant finding was a positive correlation between creativity score and a preference for 'Intense' music. Figure 5 illustrates this significant correlation.

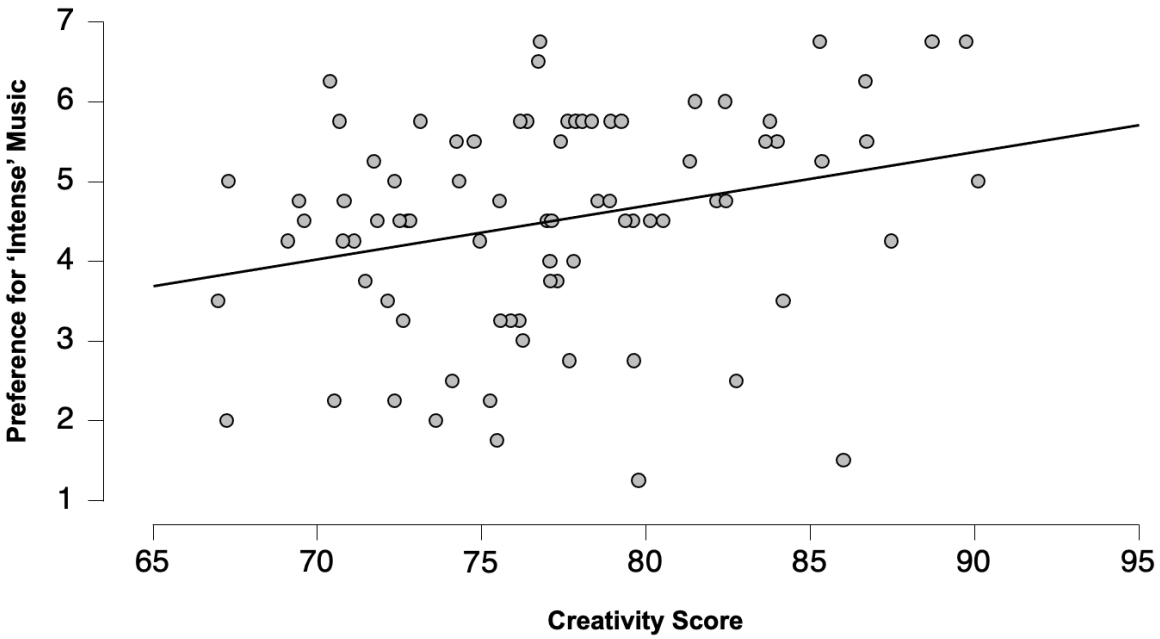

Figure 5. Correlation Between Creativity Score and a Preference for 'Intense' Music

To further analyse this relationship, a linear regression analysis was run between creativity score and a preference for 'Intense' music. The assumptions of linearity, normality and homoscedasticity were all met. There were no outliers. Results showed that creativity score explained 7.6% of the variance in scores for a preference for 'Intense' music ($R^2 = .076$), which was a significant amount of explained variance ($F_{(1, 79)} = 6.48$, $p = .013$). Specifically, a one-point increase in creativity score predicted a 0.07 increase in preference score for 'Intense' music.

In sum, all three of the main hypotheses were rejected. However, further exploration of the data revealed other significant relationships between variables. Furthermore, the exploratory correlational analysis between creativity score and music preferences yielded a significant finding.

4. DISCUSSION

This study investigated the relationships between Neuroticism and 'Emotional' uses of music, and Openness and a preference for 'Sophisticated' music, along with whether creativity could mediate a positive relationship between Extraversion and 'Background' uses of music. This study also filled a gap in research by investigating relationships between creativity and a broad range of music preferences.

Personality and Uses of Music. Regarding the first main finding, it was interesting there was no significant correlation between Neuroticism and 'Emotional' uses of music, as it has been a consistent finding in the literature so far (e.g., Anderson et al., 2020; Chamorro-Premuzic et al., 2007; 2009; Vella & Mills, 2016). Nevertheless, a recent study highlighted that Neuroticism does not always correlate with 'Emotional' uses of music, as it can depend on the emotional regulation strategy used (Miranda, 2021). This study differentiated 'Emotional' uses of music into different musical emotional regulation processes and found they had varying relationships with Neuroticism. Correlations were moderate, weak, or some did not significantly correlate with Neuroticism at all; for instance, using music for problem-solving emotion regulation. However, the majority of the musical emotional regulation strategies did significantly correlate with Neuroticism, and therefore this does not explain our non-significant finding.

Perhaps a different explanation for our results was that there was an order effect within the study design. It is possible that whilst the participants were thinking about what they used music for, they thought about the most recent music they had heard, which would have been the music clips from the previous music preferences task. Future work could look into changing the order of these tasks. Alternatively, in order to make answers representative of participants' own experiences with using music, future studies could ask participants to listen to music of their own choice during the 'Uses of Music' task. However, this could then introduce distraction effects or interfere with the interpretation of the questionnaire items.

Personality and Music Preferences. The rejection of our second research hypothesis was also surprising as Openness has often been strongly and significantly associated with a preference for 'Sophisticated' music (e.g., Fricke & Herzberg, 2017; Nave et al., 2018). Indeed, this study used similar tools to those used by these previous studies, such as the STOMP-R (Rentfrow et al., 2011) to measure music preferences, and the same five personality traits to measure personality. However, an early study also using the STOMP-R found that having a preference for 'Mellow' music had a stronger relationship with Openness (Bonneville-Roussy et al., 2013), which is in line with this this study finding Openness significantly predicted a preference for 'Mellow' music instead.

This inconsistency between findings could be attributed to the inclusion or omission of music clips alongside the STOMP-R items. Perhaps if Bonneville-Roussy et al. (2013) and Fricke and Herzberg (2017) included music clips their results may have differed. However, in terms of the inconsistent findings between this study and Nave et al.'s (2018) (which both included music clips), this could have been due to the studies selecting different music clips to define each genre. Ideally, participants could first be asked to define the genre of a selected music clip and then rate their liking of that music clip. Nonetheless, this would introduce the risk of some genres not being identified with any music clips, and so ratings of that genre would be missed. Evidently, it is difficult to find a valid measure of music preferences which avoids subjective interpretation.

Personality, Uses of Music and Creativity. It was not feasible to assess whether creativity mediated the relationship between Extraversion and 'Background' uses of music because the latter two variables did not correlate. Whilst Vella and Mills (2016) found these variables significantly correlated, they acknowledged this finding may have been unreliable. This is because it did not necessarily show a link between Extraversion and 'Background' uses of 'preferred' music which may be a more reliable measure (Chamorro-Premuzic et al., 2010). Perhaps this limitation also applied to the current study.

In spite of this, the correlational design of this study enabled further exploration of the data. Results showed greater Extraversion significantly predicted a higher creativity score; and a higher creativity score significantly

predicted greater use of music for 'Background' purposes. These results were in line with past literature (McRae, 1987; Surkova, 2012; Xiao et al., 2023) which supports the idea that these specific relationships do exist.

Creativity and Music Preferences. The exploratory correlational analysis between creativity and music preferences contributed novel findings to the literature. Results showed a higher creativity score significantly predicted a greater preference for 'Intense' music. This contrasts against Ziv and Keydar's (2009) study which found no associations between an objective creativity score and genre preferences. Perhaps using a more suitable tool (STOMP-R) to measure music preferences enabled this significant finding to be uncovered here.

As Surkova (2012) found Openness predicted creativity and Bonneville-Roussy et al. (2013) found those high in Openness liked 'Intense' music more than those low in Openness, perhaps the personality trait Openness played a role in this significant relationship. Further studies could investigate this idea.

Limitations and Future Directions. A limitation to this study may have been that the music clips were a mix of both vocal (with lyrics) and instrumental music, and research suggests people vary in their preference for instrumental music due to differences in intelligence (Kanazawa & Perina, 2011). Music with lyrics also appears to have a greater impact on mood than music instrumentals (Stratton & Zalanowski, 1994). Perhaps individual differences in intelligence and/or changes in mood were covariates for the music preferences measure. However, our study built on other studies which also used a mix of instrumentals and vocals in their music stimuli (e.g., Rentfrow et al., 2011). Furthermore, a mix of the two meant it could be deduced music preference ratings were not solely based on vocals or lack thereof.

Another potential limitation was that the music clips sourced from *Jamendo Licensing* (2023) could have included elements of AI-generated music. The stylistic success of AI-generated music models has been rated lower than that of artist-composed music pieces (Yin et al., 2023). Therefore, perhaps any AI-generated music excerpts in this study could have negatively influenced participants' preference ratings for a genre. However, the majority of this study's music clips were from Rentfrow et al.'s (2011) music stimuli, which were clips taken from artist-composed music.

5. CONCLUSION

This study explored relationships between personality, music preferences, uses of music and creativity. Although the main hypotheses were rejected, exploratory analyses revealed other significant relationships between variables. Greater Openness significantly predicted a greater preference for 'Mellow' music; greater Extraversion significantly predicted a greater creativity score; and a greater creativity score significantly predicted greater use of music for 'Background' purposes. Contradictions with past literature was a reminder of the challenges when measuring music preferences and uses of music. It is recommended future research includes carefully selected music clips to accompany these measures and increase ecological validity.

Above all, this study is valuable because it identified and filled a gap in the literature by exploring the relationships between creativity and a broad range of music preferences. Notably, this study found a greater creativity score significantly predicted a greater preference for 'Intense' music. Future research is desired to substantiate and explain the relationships between creativity and music preferences.

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APPENDICES

Appendix A) Divergent Association Task

Participants were presented with the following statements: "Please enter 10 words that are as different from each other as possible, in all meanings and uses of the words. Please follow the rules listed below.

Rules:
1. Only single words in English.
2. Only nouns (e.g., things, objects, concepts).
3. No proper nouns (e.g., no specific people or places).
4. No specialised vocabulary (e.g., no technical terms).
5. Think of the words on your own (e.g., do not just look at objects in your surroundings)."

Participants then entered each word into 10 separate text boxes.
Responses were scored using this algorithm.

Appendix B) Music Stimuli

Downloaded clips from file shared by Jason Rentfrow (Study 1; Rentfrow et al., 2011):

1. Alternative
2. Bluegrass
4. Classical
5. Country
6. Dance/Electronica
10. Heavy Metal
11. World
12. Jazz
15. Pop
16. Punk
17. Rap/hip-hop
20. Rock
21. Soul/R&B

Access to the clips can be requested: https://www.psd.psychol.cam.ac.uk/projects-measures

Downloaded clips from *Jamendo Licensing* (2023):

3. Blues
7. Folk
8. Funk
9. Gospel
13. New Age
15. Opera
18. Reggae
19. Religious

Note this study chose to remove the 'Oldies' (14) and 'Soundtrack' (23) genres from the STOMP-R.