

College students' music preference and its relationship to perceived stress levels, extraversion levels and to gender

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Abstract

The aim of this study is to investigate any possible relationships between college students' music preference and their perceived stress levels, gender and extraversion levels. The sample consisted of 101 college students (Male=51, Female=50) between the ages of 18-25 years old. The college students completed an online survey through Google forms which were comprised of three questionnaires: Short Test Of Music Preference, Perceived Stress Scale and the Ten Item Personality Inventory. The students' age and gender were also identified through demographic questions in the survey. Pearson correlation coefficient and T-tests were run to identify any correlations or associations between the variables. Results indicated that there were no significant relationships between the variables, although women college students were seen to have higher levels of perceived stress than men.

1.0 Introduction

The effects of one's music preference, in terms of its influence towards the listener, have been a topic of interest in the research world for many years. However, there is still much research to be done throughout this area. Specifically, how an individual's music preference could influence their perceived stress levels as well having a relationship to other differentials, such as their gender and also their introversion/extraversion levels. This study aims to discover specifically how college students' music preferences relate to these variables. The rationale for the focus of this study on college students is due to previous research, stating that there is an increase in negative emotions upon students entering into third level education. Therefore, it seems there is a gap in research in terms of discovering if these college students and their music preference may have correlations with the variables mentioned. Thus this study will aim to explore the music preference of college students and its' relationship to their perceived stress levels. Furthermore, this research will investigate their music preferences and its' relationship to the personality parameter, extraversion levels. Finally, the study will examine if the music preferences have any relationship to their gender.

1.1 College students

In recent times, there has been a mounting body of research surrounding how college students' mental health is affected negatively upon moving into their third level education. According to one study by Andrews & Wilding (2004), which sampled college students in the United Kingdom upon entering their college degree, investigated if the transition into adulthood had any negative effects on their life and mental health. The results showed that 20% of students who had been previously symptom free and mentally stable, had now developed intense anxiety and their stress levels were at an all-time high. Furthermore, a similar study (Hudd *et al.*, 2000) was carried out in the United

States, which revealed that upon entering into college around 52% of sampled students had reported they had high levels of stress during their college year. It is however, important to note the limitations of these studies as the samples were taken from college students enrolled at university in a different country, hence, the levels of stress experienced by the students may differ to college students in Ireland. However, as stated previously, the similar literature does seem to indicate that upon entering into college students have an increase in their stress levels and also experience a range of negative emotions. Interestingly, a study (*Ross, Niebling, & Heckert, 1999*) revealed the source of the stress college students seemed to experience was due to an increase in workload, and their sleeping habits. However, what is most relevant is that the students noted they had little to no coping or management programs to combat stress. Thus this study offers no solutions to what stress management programs could be used to help the students. Hence, there appears to be a gap in research in terms of discovering if music preference could play a role in the college students' ability to cope with their stress levels, whilst also identifying if certain genres of music could possibly be increasing the student's stress levels.

1.2 Effects of music

There has been a substantial amount of evidence that music has been used throughout history as a therapeutic tool (*Horden, 2017*). In those periods of history, little was known to why music evoked such a therapeutic effect but people have still used music for its ability to reduce stress and other negative emotions. Therefore, it wasn't until recent times that research began to look more specifically at music and how it can reduce these negative emotions. A mounting body of evidence suggests now that music does in fact have an impact on the listeners emotions as well as the listeners levels of stress. This study (*Trainor & Schmidt, 2003*) for example looked at how music has the ability to alter ones emotions. Using cognitive neuroscience the study attempts to highlight that music does alter the listener's emotional reaction to music. This can be seen through a range of physiological responses that the listener can have to a certain piece of music. This study has its

limitations however, as although it does suggest that listening to music can illicit positive/negative emotions, it does not take into account one's musical preferences and how this could have an effect on the listener. Building upon the research relating to music's ability to alter and effect one's emotions, there has been some useful research done on how music preference could have relationship with one's mood. According to a recent research paper (*Friedman, Gordis, & Förster, 2012*), the music preference of the sample had a direct relationship with their mood. This study assessed a sample group on the mood they were currently in and then they were to assess how they would feel if they were to listen to a certain genre of music. The results showed that those in a sad mood would not want to listen to any music that was characterized as happy and upbeat, as it would feel inappropriate. Therefore, it seems that an individual's mood could be linked to their choice in music preference.

1.3 Music preference

Although the effects of music on the listener have been explored deeply in past research, music preference has not been looked at in as much depth. There had been previous studies which looked at music preferences but nothing could properly distinguish what music preference had to relate to an individual's personality, stress levels and gender.

A major leap in this field of research occurred from a specific study by Rentfrow and Gosling (2003) in America. Rentfrow and Gosling felt that there was significance between the music preference of an individual and their entire being. They developed a music preference test called STOMP. This test attempted to take an individual's music preferences into account and then further put the person into dimensions of preference following their choices in the test. These dimensions are as follows,

1: Reflective and Complex - This is defined by jazz, classical etc.

2: Intense and Rebellious - This is defined by rock, heavy metal etc.

3: Upbeat and Conventional - This is defined by pop, soundtracks etc.

4: Energetic and Rhythmic - This is defined by hip-hop, dance etc.

These four dimensions are highly useful when attempting to see any relationships between musical preference and an individual's overall stress for example.

1.4 Stress levels

One previous study (*Burns, 2002*) looked directly at music preference and its relationship to stress. This paper highlighted clearly that depending on the music preference the sample listened to, they felt higher or lower in levels of perceived stressed afterwards. Rock music for example was seen to provoke a stress response from the listener. Thus, it was seen from this study that music has the ability to provoke a stress response in a listener whilst also reducing levels of stress within the listener. The results of these studies show that music can have an impact on both the psychological and physiological states of the listener, depending on the genre of music the listener chooses to listen to which is highly important in regards to this study. Conflicting evidence is apparent, such as in this German study (*Linnemann, Strahler & Nater, 2017*) which examined music's ability to effect stress levels on a daily basis. This study reinforced previous research that suggested music could be responsible for reducing the listeners stress levels but not for the reasons other literature has cited. In contrast this study stated that the reduction of stress levels is from the characteristics of the music, such as being in the presence of others while listening to it, as well as a multitude of factors to do with the individual listening to this music. Furthermore, this study did not take into account the genres of music which is a major limitation of this study. This provides insight that the genre of music could be directly linked to one's stress levels. Therefore this could be highly relevant when applied to a college student cohort. Further research in the area of stress and music preference highlight that music preference is crucial in regards to how the listener responds to a musical piece in terms of stress reduction for example. According to recent research (*Jiang, Zhou,*

Rickson & Jiang, 2013), for music to have a direct impact on the listeners stress levels music preference must be taken into account. In this study, sedative music reduced stress levels in the sample when listened to and stimulative music increased stress levels when it was played for the sample. Therefore this study provides insight into the importance of music preference when researching an individual's stress levels. Similarly, a recent study (*Thoma, et al, 2013*) sampled 60 female participants, and psychologically stress-tested them after listening to three different preferences of music, ranging from relaxing to no stimuli from music at all. The results showed a significant difference in the participants' cortisol levels, depending on the musical stimuli they were exposed to before the stress test. This study would again indicate music can directly affect one's stress levels. This study however only looked at an entirely female sample, so it was not an evenly distributed sample.

1.5 Gender

Building upon previous research, there has been a focus as well to discover if musical preferences have any relationship with gender. According to one study (*Martin, Clarke & Pearce, 1993*), men had a bias towards rock music with 70.4% of the boys in the study listening to rock music in contrast to 74% of the girls preferring to listen to pop music. This study highlights the difference in the preferred genre of music for each gender. The study however had major limitations such as being much older and outdated in comparison to today's music, as well as focusing on teenagers as opposed to adults. However, it does highlight that gender may be a factor in one's music preference. For example, a recent study (*Kim, Han, Trksak & Lee, 2014*) sampled a group of Korean adolescents aged 12-19 around depression and coping methods. The results showed the females recorded that they were more likely to listen to music as a coping tool as opposed to men. The study does have its limitations as it does not state what music the girls chose to listen to as a coping tool. To build upon this, more similar research was done in this area (*Brougham, Zail, Mendoza & Miller, 2009*) and it showed that women in college have higher levels of stress and negative

emotion than men. This could be related to women using music more as a coping tool. Women have also been seen in many studies (*Matud, 2004*) to have higher levels of stress than men. This study highlights that this is a result between the two genders approach in their coping styles. But this still shows that women seem to experience stress on a higher level than men.

Further research needs to be carried out to discover the effect of music on stress levels in accordance to one's gender, and to determine if any correlations are present.

1.6 Extraversion levels

Based on previous research, introversion and extraversion is tied into one's positive emotions. One group (*Watson & Clark, 1997*) tried to validate previous theories, which had hypothesized that high levels of extraversion are linked to more of a reaction to positive emotions and moods.

Therefore, besides stress levels and gender seeming to have a correlation with the listeners' music preference, one's introversion/extraversion levels seems to play a role as well. According to a study (*Namdar, Taban Sadeghi, Sabourimoghaddam, Sadeghi & Ezzati, 2014,*) introversion and extraversion levels have a significant role in the listener's response to music. This study recorded their samples personality, then subjected them to listen to slow paced music followed by fast paced music. The results were significant, as it showed the extraverted listeners had a reduced heart rate in response to the slow paced music as well as a reduction in systolic blood pressure. Thus, the extraversion responded more to the music they were played; where the introverted listeners had a minimal response. However, this study is not without its limitations, for example the study only sampled men which gives an unfair balance when taking gender into account. In addition to this, according to a research paper (*Pearson & Dollinger, 2004*) there seems to be a correlation between one's personality parameters and music preference. Interestingly, extraversion levels were correlated to an overall interest in music and particularly, an interest in popular/rock music. This study provides good background, as the listener's music preference can have a relationship to their

extraversion/introversion levels. Thus, these personality parameters seem to play a role in one's music preference which could be researched further in relation to college students.

Based on the previous literature there seems to be a gap in research, in terms of studying specifically how music preference may play a vital role in terms of perceived stress levels, gender and introversion/extraversion levels for college students. Previous studies provided a thorough amount of background information for this study, but how these variables could all be linked together in terms of the rise in stress levels that college students feel and how it relates music preference remains elusive. Finally the majority of these studies used the Myers-Briggs measure to record their introversion/extroversion levels.

This study aims to explore the following hypotheses:

Hypothesis 1: High levels of stress in the college students will have a significant association with the Intense & Rebellious music preference

Hypothesis 2: Low levels of stress in the college students will have a significant association with the Reflective & Complex music preference.

Hypothesis 3: Women will have higher levels of stress, and if so, they will be more associated with the Intense & Rebellious music preference

Hypothesis 4: High levels of extraversion will have a significant association with the Intense & Rebellious music preference

2.0 Methodology

2.1 Participants

The participants in the sample used for this study were above the age of 18 and were currently studying in a college degree. There was a total of 101 college students who participated in the study by means of a questionnaire they filled out online. Purposive sampling was also used within the study. The only qualifications to partake in the study were to be in college and to be above the age of 18.

Through the use of social media the questionnaire could be shared via a Facebook status and via Google Docs with college students which provided a larger sample size. The questionnaire was also privately messaged, asking friends who were in college to take part in the questionnaire and also to share the questionnaire with their college friends. Due to the questionnaire being taken online, there was no control of the environment. Participants could take part in the questionnaire through their laptops or phones at home or wherever they could access the survey. Participation was completely voluntary and there was no incentives offered to take part in the study. Since the questionnaire was also anonymous, there were no geographical locations that were taken into account. Both sex and age were accounted for. The gender was split 50.5% Male to 49.5% Female.

Table 1: Summary of cohort's age

	N	Minimum	Maximum	Mean	SD
Age	101	18	25	20.72	1.35

2.2 Design

The project used quantitative correlational study design. Purposive sampling was also used as the sample needed to be specifically college students. Snowball sampling was used to get a larger

sample size also. The variables in the study were as follows: the predictor variable (PV) being measured in this study is music preference, while the criterion variables (CV) being measured are gender, perceived stress levels and extraversion levels.

2.3 Materials

Materials used were a password protected laptop (MacBook Air). The software used was IBM SPSS 24 and Microsoft Excel. All participants in the study completed a short online survey through Google Docs, containing the following questionnaires. These questionnaires were chosen as they have been proved of their validity through their use in peer reviewed research in the past:

The Short Test of Music Preference (STOMP) (*Rentfrow & Gosling, 2003*), the Ten Item Personality Measure (TIPI) (*Gosling, Rentfrow & Swann, 2003*) and the Perceived Stress Scale (PSS) (*Cohen & Janicki-Deverts, 2012*). There were also two demographic questions specifying gender and age the beginning of the questionnaire.

2.3.1 Short Test of Music Preference (STOMP)

The college students' music preference was assessed using the Short Test of Music Preference (STOMP). The STOMP is a 14 item questionnaire which assesses the participants' music preferences. Each of these 14 items stated a music genre. The genres are varied ranging from electronic and pop music to heavy metal and folk music. The scale is scored using a 7-point Likert scale format (1= Strongly Dislike, 7= Strongly Like), this determines how the participants feel towards the genre that is listed to them. The higher the number on the scale is, the more the participants enjoy the genre presented. The STOMP (*Rentfrow & Gosling, 2003*) can be further broken in to different sub-scales depending on the questions answered. These sub-scales are as follows: Reflective & Complex (e.g. Folk), Intense & Rebellious (e.g. Rock), Upbeat & Conventional (e.g. Pop) or Energetic & Rhythmic (e.g. Rap/hip-hop).

STOMP has been proved of its validity through previous research (*Langmeyer et al, 2012*). The researchers used audio samples to test the validity of the STOMP dimensions. The results highlighted that the STOMP dimensions showed significant positive correlations to the audio samples played.

2.3.2 Ten Item Personality Inventory Measure (TIPI)

The college students personality was measured using the Ten Item Personality Inventory Measure (TIPI), with the main focus of its' use being to examine the students extraversion levels. This ten item questionnaire is used by researchers who don't have the time to use the full scale. The scale as a result, is not as in depth as the full scale but still provides reliable results and provide the information needed for this research. The TIPI is a 10 item scale which assesses ones personality. The participant is first provided the statement at the beginning: "I see myself as..". Then, the participants are presented a number of self-descriptive terms such as "Extraverted, enthusiastic" or "Anxious, easily upset". The participant then has to rate themselves in accordance to how they feel they are represented by these descriptive terms. The scale that this is scored on is a 7-point Likert scale (1= Disagree Strongly, 7= Agree Strongly). The results are then calculated from this scale in the following sequence, recode questions 2, 4, 6, 8, 10 then you must add the corresponding personality trait and then finally you must find the average.

The study (*Gosling, Rentfrow & Swann, 2003*) stated there were low internal consistencies. The Cronbach Alpha for example was: .68, .40, .50, .73, and .45 for the Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness to Experience scales respectively. For this study we are only looking to extraversion levels, so this is a reliable result.

2.3.3 Perceived Stress Scale (PSS)

Finally, the college students' stress levels were measured using the Perceived Stress Scale (PSS). The PSS is a 10 item questionnaire which measures the levels of stress the participants may be feeling. The participant is provided with statements such as "In the last month, how often have you been upset because of something that happened unexpectedly?". The participant can then rate their response to these questions in terms of a 4-point Likert scale (0=Never, 4=Very Often). The results from this are then calculated as follows. The scores are achieved by firstly reversing the scores on positively stated items (Q 4,5,7,& 8) and then by summing the scores all across the 10 items in the questionnaire with a possible total score of 0-40.

The perceived stress scale has been proved to have a high reliability. An extremely recent paper (Homan, 2017) for example, tested the validity of the PSS through means of testing the stress levels of patients with chronic headaches in Iran. Through the means of testing, the researchers achieved a Cronbach's Alpha coefficient of 0.72. This as stated in the paper confirmed the reliability and validity of the scale through repeated measures.

2.4 Procedure

Each participant was informed via Facebook that this study was exclusively for college students. There was also a link to Google Docs where the questionnaire was made. The participants who clicked the link were presented with an information sheet (Appendix A) on Google Docs. The information sheet informed the participants that this study was looking at music preference and its relationship to aspects of the college students life. It notified the participants that by completing the

questionnaire they were providing consent for their data to be used for research purposes for a final year students research project who was undertaking their BA (Hons) Psychology in Dublin Business School. The participants were also informed that their participation would be completely confidential and anonymity was important to this study. The students were informed that it was completely voluntary to take part in this study but it was impossible to withdraw from the study once their data had been submitted since the study is anonymous. The researchers email was given in case any participants had any follow up questions about the survey as was supervisor's email. If the participants had read the information sheet and they wished to continue on and participate in the study they had to click that they were above the age of 18.

Clicking onto the next page brought the participants to two demographic questions to fill out. These were both age and gender. All questions in the survey were mandatory and had to be answered to continue to ensure all data was collected. Then the three questionnaires within the survey could be answered. Upon completion of all of the questions, a debrief sheet to thank the participants for their completion and answers in the study, was provided. Then there were some numbers to support lines offered in case any questions had a negative emotional impact on the participants. The questionnaire had electronically saved on Google Docs until the researcher felt they had enough data to conclude any further participation in the study. The data was then exported to SPSS to be further analysed.

2.5 Ethical Considerations

This study was firstly approved by the Dublin Business School Ethics Committee. This study also involved college students over the age of 18 so no statutory declaration was necessary. All participants were informed of their anonymity and privacy within this study, although they were notified they were unable to withdraw from this study once they had submitted their answers since it was anonymous. The responses were also stored on a password protected Google account and the

researcher was the only person with access to this data. There was no deception used within the study and the participants were informed of the purpose of this research in the information sheet at the beginning of the questionnaire. Helplines were also given at the end of the questionnaire to AWARE and Samaritans in case the study elicited any feelings that the participants found distressing.

3.0 Results

3.1 Descriptive statistics

The data was first entered into the software IBM SPSS Statistics 24 and statistically analysed.

There was a total number of 101 participants in this study who completed the online survey. From these participants 50.5% were male (N=51) and 49.5% were females (N=50). The students ranged in ages from 18-25 with the average age being 21. Histograms were also created in SPSS to verify all of my collected data were evenly distributed.

3.1.2 STOMP

The frequency of the student's interest in each of the STOMP's four sub dimensions were analysed and displayed in table 2. Energetic & Rhythmic receiving the highest preference (M= 4.76, SD=1.09) and Upbeat & Conventional receiving the lowest preference (M=4.01, SD=0.84).

Table 2: Summary of students' music preference in relation to STOMP sub-dimensions.

	N	Minimum	Maximum	Mean	Std. Deviation
Intense & Rebellious	101	1.33	7.00	4.1749	1.42095
Reflective & Complex	101	1.25	6.75	4.0173	1.16150
Upbeat & Conventional	101	1.5	6.00	4.0124	.84067
Energetic & Rhythmic	101	20	7.00	4.7657	1.09802

3.1.3 Extraversion levels

The average student's extraversion levels were also measured and the results can be seen in table 3.

The average extraversion levels being 4.31 (SD=1.30)

Table 3: Summary of students' extraversion levels.

	N	Minimum	Maximum	Mean	Std. Deviation
Total Extraversion	101	1.00	7.00	4.3168	1.30905

3.1.4 Perceived stress levels

The students perceived stress levels were run through descriptive frequencies on SPSS. The results showed that the average perceived stress levels were 22.10 (SD=4.49). This is important to note when scoring the students on the perceived stress scale. The perceived stress scale scoring is as follows:

- Scores ranging from 0-13 would be considered low stress
- Scores ranging from 14-26 would be considered moderate stress
- Scores ranging from 27-40 would be considered high stress

The students perceived stress scores are displayed in figure 1.

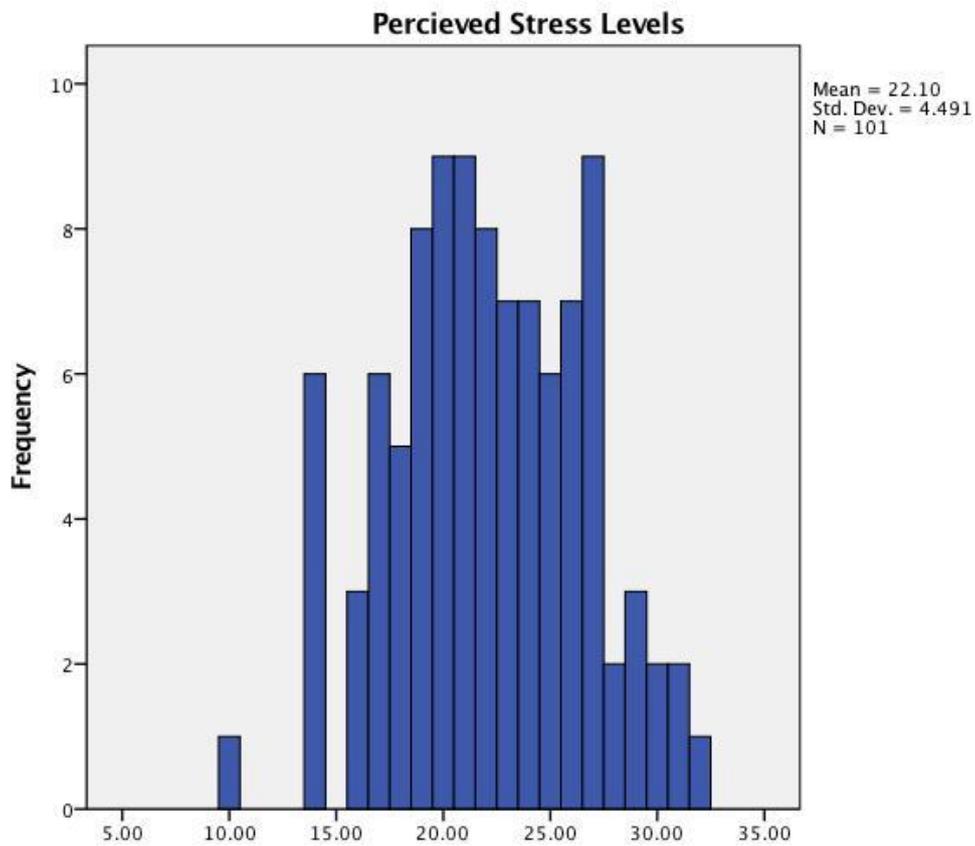


Figure 1: Histogram illustrating the frequency of students' perceived stress across the cohort.

3.2 Inferential statistics

To identify any relationships between the student's music preference with their extraversion levels, gender and perceived stress levels, Pearson correlations coefficient tests were ran. These correlational tests took the participants STOMP sub dimensions then compared them to the

variables looked at in this study. Two independent sample t-tests were also ran to calculate the mean of certain variables.

H1: High levels of stress in the college students will have a significant association with the Intense & Rebellious music preference

Descriptive frequencies revealed the mean scores for college students stress were 22.10 (SD=4.49) and the Intense & Rebellious music preference were 4.17 (SD=1.42). A Pearson correlation coefficient found there was not an significant relationship between the college students stress levels and the Intense & Rebellious music preference.

(R= 0.19, $p < .05$).

Therefore the null hypothesis can be accepted.

H2: Low levels of stress in the college students will have a significant association with the Reflective & Complex music preference

Descriptive frequencies revealed the mean scores for college students stress were 22.10 (SD=4.49) and the Reflective & Complex music preference were 4.12 (SD=1.16). A Pearson correlation coefficient found that there was no significant relationship between low levels of stress in the college students and the Reflective & Complex music preference

(R=.039, $p > 0.05$)

Therefore the null hypothesis can be accepted.

H3: Women will have higher levels of stress and if so they will be more associated with the Intense & Rebellious music preference

First an independent samples t-test was run to identify the stress level differences between men (M=20.70, SD=4.71) and women (M=23.52, SD=3.79). The independent samples t-test found that there was a statistically significant difference between stress level of males (M = 20.70, SD = 4.71) and females (M = 23.52, SD = 3.79) ($t(99) = -3.30, p = .001, CI (95\%) -4.50 \rightarrow -1.12$), women having higher levels of stress than men. This is demonstrated in figure 2.

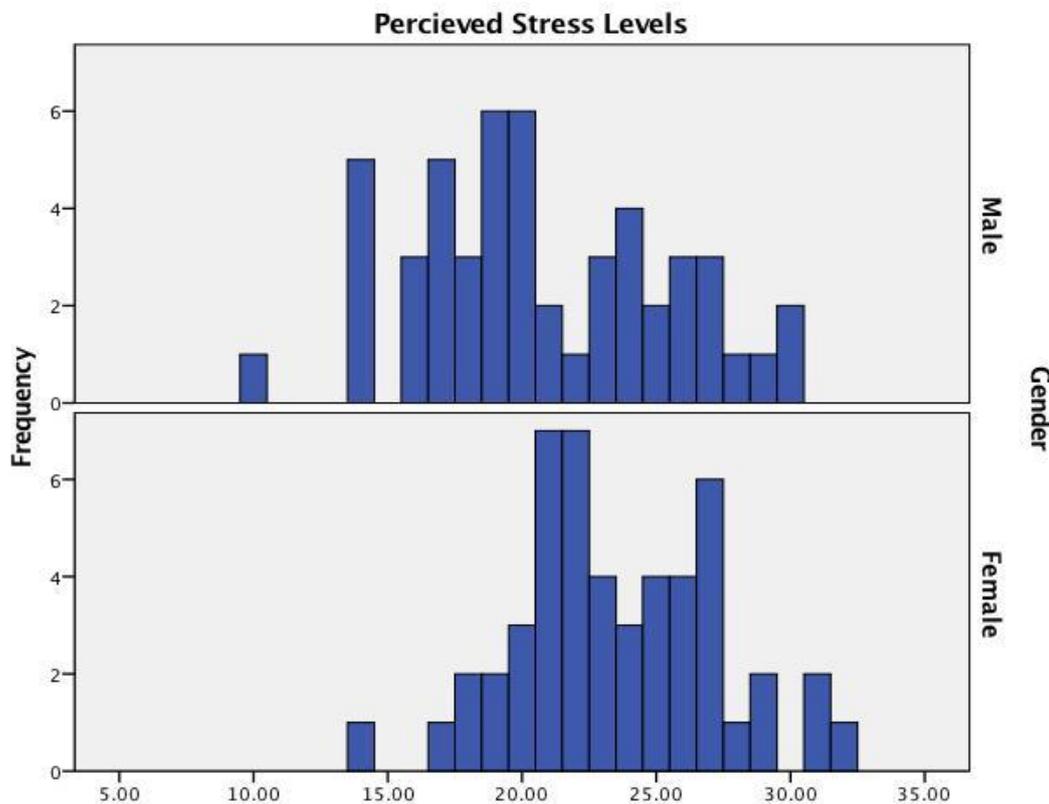


Figure 2: Histograms illustrating the frequency of students' perceived stress between genders.

Therefore the null hypothesis can be rejected.

Therefore, another independent samples t-test was run to identify if women listen to the Intense & Rebellious music preference. The independent samples t-test found that there was a statistically significant difference between preference towards the Intense & Rebellious preference of males ($M = 4.46$, $SD = 1.32$) and females ($M = 3.88$, $SD = 1.46$) ($t(99) = 2.10$, $p = .038$, $CI (95\%) -0.032 \rightarrow -1.13$), men having more a preference for Intense & Rebellious.

Therefore the null hypothesis can be accepted.

H4: High levels of extraversion will have a significant association with the Intense & Rebellious music preference

Descriptive frequencies revealed the mean scores for college students extraversion levels were 4.31 ($SD=1.30$) and the Intense & Rebellious music preference were 4.17 ($SD=1.42$). A Pearson correlation coefficient found that there was a weak positive correlation between the college students' stress levels and the Intense & Rebellious music preference.

($R = -0.18$, $p > .05$).

Therefore the null hypothesis can be accepted.

4.0 Discussion

4.1 Summary of results

The aim of this study was to determine if there was a relationship between college students' music preference and their perceived stress levels, gender and extraversion levels. To measure and explore these variables there were three different scales used. First was the Short Test of Music Preference (STOMP) (*Rentfrow & Gosling, 2003*), that was used to assess the students music preference. The second scale used was the Perceived Stress Scale (PSS) (*Cohen & Janicki-Deverts, 2012*) to identify the students stress levels. Lastly the Ten Item Personality Measure (TIPI) (*Gosling, Rentfrow & Swann, 2003*) was used to identify the students' levels of extraversion. The results from these studies provided insight into various dimensions of the college student's life.

There were four hypotheses tested in congruence with these variables:

The first being, that there would be a significant association between college students' perceived stress levels and the Rebellious & Upbeat music dimension. This hypothesis had a weak positive correlation but was not significant hence the null hypothesis was accepted.

The second hypothesis was that there would be a significant association between college students' low levels of stress and the Reflective & Complex music dimension. This hypothesis had no significant associations and therefore the null hypothesis was accepted.

The third hypothesis was that women would have higher levels of stress than men, if proved to be true there would be a significant association between women and the Intense & Rebellious music dimension. Women did have higher mean scores in their perceived stress levels but were not

associated more with the Intense & Rebellious music dimension. Therefore, the null hypothesis was accepted.

The last hypothesis being that there would be a significant association between college students' high levels extraversion and the Intense & Rebellious music dimension. This hypothesis had no significant associations; therefore the null hypothesis was accepted.

However, in contrast to much of the previous literature and research surrounding this area, there seems to not be a significant association between the college students' music preference and other dimensions of their life. This study did indicate, however, that college students are experiencing moderate levels of stress and this may be due to a number of stressors that college can bring them. It is also supported by this research that women experience more levels of perceived stress than men. As well as this, there is a weak but positive correlation between the college students stress levels and their affinity toward the Intense & Rebellious music preference.

H1: High levels of stress in the college students will have a significant association with the Intense & Rebellious music preference

It was hypothesised that students who had a higher preference for the Intense & Rebellious music preference would have higher levels of perceived stress levels. The rationale behind this was that music that was shown in previous research indicated clearly that music has the ability to affect our stress response. The study (*Thoma, et al, 2013*) mentioned previously showed that there was a measurable change in the participants stress response. This study however looked at music's ability to reduce the participants stress response as opposed to what we are looking at in this study, the increase of participants stress response depending on their music preference. However, a more relevant study (*Burns, 2002*) showed that stress levels could be directly influenced to rise depending on the genre of music that is played for them. These studies offer a good basis to predict that music preference could influence your perceived stress levels. Intense & Rebellious music has not been linked to higher stress levels previously but it would be expected to increase stress levels. For example, this study (*Knight & Rickard, 2001*) showed that slow tempo music provoked a stress reduction in the participants. Hence, Intense & Rebellious music would have an higher tempo while also being filled with more aggressive lyrics as opposed to the other genres. The study (*Burns et al, 2002*) highlighted as well the stress response that rock music can provoke in the listener.

This study however has found that there was a weak but ultimately positive correlation with the preference towards the Intense & Rebellious music and stress levels. The relationship however was not significant enough to support previous research and the hypothesis. It is currently not known why there was not a stronger association between these two variables as previous research indicated the relationship would be substantial. The association that is present, even if it is a weak correlation, is still positive. This can be explained through other findings that were discovered within this study.

For example, the results from the STOMP showed that Religious music was one of the most disliked genres within the study. Religious music had an average response on the Likert scale presented of 1.95 (SD=1.17), where Rock music for example had an average response of 4.99 (SD=1.64). This could potentially highlight the idea that since college students make a move away from religious music and the positive messages it could provide, they are moving more towards Rock music which has been proven to rise one's stress levels. An interesting study (*Rayburn, Richmond & Rogers, 1986*) looked at leaders and their stress levels, looking at those who are not religious in comparison to those who are religious. The results showed that the religious leader had lower overall occupational stress and personal strain. This can be seen to be a result of religion being used as a coping system for these leaders. Ireland however is seen to be moving away from religious groundings which can be seen in the Irish Census (2016). The census showed that the number of religious people has declined by 5.9% in the last 5 years. Hence, as religious systems seem to be shrinking in Ireland there is a definitive reason why stress levels are relatively high for a younger generation. Since our sample looks at college students the results reflect the idea that religious music is not something that is sought after in terms of music preference for these stressed college students. Instead loud, aggressive music such as heavy metal and rock music are what the college students orient themselves towards. Further research could be done in this area.

H2: Low levels of stress in the college students will have a significant association with the Reflective & Complex music preference

It was hypothesised that low levels of stress in college students would have a significant association with the Reflective & Complex music preference. The rationale being that unlike the Intense & Rebellious music increasing the stress response in the college students, these more relaxing and peaceful genres of music would decrease the students stress levels. The Reflective & Complex sub dimension is comprised of classical music and jazz. These can be seen to be extremely relaxing genres and have been tested in previous studies to see their effect on individual's stress response. The study here (*Scheufele, 2000*) shows that by listening to classical music one's stress response can be lowered. Again, this previous literature provides insight into what having an orientation towards the Reflective & Complex dimension could possibly illicit in terms of the college students' stress responses.

This study however has found that there was no significant relationship between the college students' levels of perceived stress and their orientation towards the Reflective & Complex music preference. This contradicts much of the previous research surrounding the effects of classical music for example on a listener's stress levels. At this point in time it is unsure why there was no significant association. It could be, perhaps, said that due to the sample size being college students and being a younger demographic, their active listening tastes would be more orientated towards high tempo dance and pop music as opposed to more gentle, stress reducing genres such as classical and jazz music. A further note on this would be that the students ranked pop and dance music high on the STOMP while jazz and classical were ranked lower. This could explain the students' higher levels of stress and why the null hypothesis was accepted. College students are one of the highest rated demographics in terms of excessive alcohol abuse. This can be seen in a meta-review (*Karam, Kypri, & Salamoun, 2007*) which highlights the excessive alcohol abuse prevalent in Europe, North

America and South America. Alcohol also provokes anxiety (*Pohorecky, 1981*) when drunk in excess. This excessive drinking could be a major part of the stress that the students feel. Therefore, it could be safe to assume that as a result of binge drinking that college students take part in, they orient themselves towards more upbeat and party relevant music as opposed to stress reducing music such as the genres present in the Reflective & Complex music dimension. Further research could be done to test these assumptions.

H3: Women will have higher levels of stress and if so they will be more associated with the Intense & Rebellious music preference

It was hypothesised that in this sample of college students the women would have higher levels of stress than the men. Continuing on from this, the women were assumed to be most associated with the Intense & Rebellious music preference. It was first found that women did have higher levels of stress than men. This would make sense due to the previous literature (*Matud, 2004*) surrounding this area. Women in college have higher levels of stress as seen in a previous study (*Brougham, Zail, Mendoza & Miller, 2009*). There seemed to be merit in assuming that not only are women more stressed than men in college, but perhaps their music preference is a contributing factor to this. The women in this sample, however, were seen to not be associated with Intense & Rebellious music preference rather the men were more orientated towards this music dimension. The rationale was originally that the high levels of stress would be associated with the Intense & Rebellious music preference. As well as this, women were seen to use music more as a coping mechanism (*Kim, Han, Trksak & Lee, 2014*). The findings however in this study seem to contradict this as women do not have a higher association with the Intense & Rebellious music preference. The null hypothesis was ultimately accepted. Reasons for this are not clear at this time. This could be a sample size issue with not enough participants involved. Further research could be done to examine why men seem to

orient themselves towards this preference as opposed to women. Also to identify what factors are contributing to women experiencing these higher levels of stress in college, as well as the general population.

H4: High levels of extraversion will have a significant association with the Intense & Rebellious music preference

It was hypothesised that high levels of extraversion in the college students would have a significant association with the Intense & Rebellious music preference. The rationale being that previous literature (*Pearson & Dollinger, 2004*) identified that high levels of extraversion were significantly correlated with Rock music. The results, however, showed no significant association between the college students' extraversion levels and the Intense & Rebellious music preference. This was surprising, as previous literature would have suggested there was huge overlap between extraversion levels and this STOMP dimension. At this present time, it is currently unknown why this happened. It may be due to the sample consisting of a majority of Irish college students, as opposed to the countries previous literature, that has taken place in countries such as England and The United States. Further research could be done with an Irish sample to see if these results are accurate.

4.2 Limitations

The main limitation would be the sample size (N=101) gathered in this sample. The sample was not a full representation of the majority of college students within Ireland. This was due to mainly college students in Dublin being targeted and also data collection being done under a short time period. Hence, there may be a difference in the music preference of each college student around the country. This can be problematic when making generalisations surrounding all college students within Ireland. This issue could be addressed by targeting college students outside of Dublin in future research. As well as taking more time to collect data to get a better representation of the Irish college student population.

As well as this, individuals have been explained to have a bias when reporting on themselves in questionnaires. This can be seen in previous research (*Donaldson & Grant-Vallone, 2002*). This could be an issue with individuals reporting on what music genres they have an interest in, even if they do not listen to the genre regularly. This could ultimately affect the results with students ranking certain genres higher than others without truly believing what they are rating is good rather more socially accepted. This self-bias can be seen to occur even in anonymous questionnaires. Future research could possibly include questions to indicate how often they listen to each genre. This could give a more realistic view of what music the students actually listen to regularly, as opposed to what genres they have somewhat of an interest in.

Purely quantitative methods were used for the data collection. This could be restrictive especially when attempting to identify someone's music preference. Students may have preconceived ideas surrounding certain genres so perhaps qualitative methods would be useful to add to further dimensions to the research when looking at music preference.

4.3 Strengths

The main strength of this study is the use of an Irish sample for college students. There have been many studies done surrounding music preference but this is one of the few studies done in Ireland which aimed to discover what music preference has to play in influencing the high levels of stress college students face. The measures used in this study had also been previously verified by Cronbach Alpha tests of reliability, which showed us the measures being used in this study were of the highest reliability and validity.

The gender was evenly distributed as well in this study which provided very accurate results when identifying differences between the sexes.

Overall, this study has helped contribute a better understanding of Irish college music preferences and how this can relate to other aspects of their life. This study, from what the researcher could find, is one of the first studies to examine how music preference could be directly influencing the stress levels that college students experience. Although there were no significant results gathered from this study it still has offered insight into Irish college students and further research could be done to follow up on these hypotheses presented in this study. Perhaps in the future, the use of a larger sample size and demographic would aid drawing conclusions.

5.0 Conclusion

In conclusion the main aim of this study was to determine how college students' music preference could have interactions with other dimensions of their lives such as perceived stress levels, gender and extraversion levels. Previous research highlighted the immense levels of stress that college students face as a result of moving into third level education. Little research has been done surrounding how one's music preference could be directly influencing the students stress levels, especially in an Irish setting. Also, how the students gender and extraversion levels may be other factors involved in the students orientation towards music preferences.

The results showed very weak positive correlations between our variables, therefore there were no significant associations as hypothesised previously. Post-hoc analysis could offer further insight into why these associations were not significant. At this time, the researcher speculates that the low sample size and use of an Irish sample may be responsible for these results. Music preference is still a highly underdeveloped research area, so further research needs to be done in this area to provide more expansive and clear results.

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7.0 Appendices

Online Questionnaire Debrief Sheet

Hello,

My name is Cian O'Regan, I am a final year psychology student in Dublin Business School. I am conducting a survey to examine how college students music has any connection to other aspects of their life. The results of this survey will be used in my final year Research Project and submitted for grading purposes.

This is an anonymous survey therefore no information that can identify you will be collected. Participation is voluntary and you can change your mind at any time. However, as all submissions are anonymous, please note that it is not possible to withdraw from the study after your answers have been submitted. The data collected from this study will be stored on a password protected google account.

If you have any questions to follow up on after this survey is finished please contact [REDACTED] or you can contact my supervisor [REDACTED]

Thank you greatly for your participation!

Cian

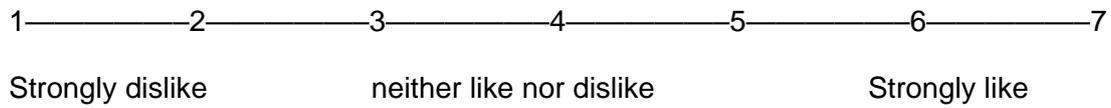
Q1. What is your gender?*Required

Male

Female

Q2. How old are you? *Required

Q.3 For the following items, please indicate your basic preference level for the genres listed using the scale provided.



1. _____ Classical
2. _____ Blues
3. _____ Country
4. _____ Dance/Electronica
5. _____ Folk
6. _____ Rap/hip-hop
7. _____ Soul/funk
8. _____ Religious
9. _____ Alternative
10. _____ Jazz
11. _____ Rock
12. _____ Pop
13. _____ Heavy Metal
14. _____ Soundtracks/theme songs

Scoring for the four music preference dimensions:

Reflective & Complex: 1, 2, 5, 10

Intense & Rebellious: 9, 11, 13

Upbeat & Conventional: 3, 8, 12, 14

Energetic & Rhythmic: 4, 6, 7

Q4. For the following you will be asked to rate your thoughts and feelings over the last month. You will be asked to indicate by circling how often you felt or thought a certain way.

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

1. In the last month, how often have you been upset because of something that happened unexpectedly? **0 1 2 3 4**
2. In the last month, how often have you felt that you were unable to control the important things in your life? **0 1 2 3 4**
3. In the last month, how often have you felt nervous and “stressed”? **0 1 2 3 4**
4. In the last month, how often have you felt confident about your ability to handle your personal problems? **0 1 2 3 4**
5. In the last month, how often have you felt that things were going your way? **0 1 2 3 4**
6. In the last month, how often have you found that you could not cope with all the things that you had to do? **0 1 2 3 4**
7. In the last month, how often have you been able to control irritations in your life? **0 1 2 3 4**
8. In the last month, how often have you felt that you were on top of things? **0 1 2 3 4**
9. In the last month, how often have you been angered because of things that were outside of your control? **0 1 2 3 4**
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? **0 1 2 3 4**

Q.5 Here are a number of personality traits that may or may not apply to you. Please tick the box that corresponds to the statement to indicate the extent to which you agree or disagree with that statement. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other.

I see myself as;

1 = Disagree strongly 2 = Disagree moderately 3 = Disagree a little 4 = Neither agree nor disagree 5 = Agree a little 6 = Agree moderately 7 = Agree strongly

I see myself as:

1. _____ Extraverted, enthusiastic.
2. _____ Critical, quarrelsome.
3. _____ Dependable, self-disciplined.
4. _____ Anxious, easily upset.
5. _____ Open to new experiences, complex.
6. _____ Reserved, quiet.
7. _____ Sympathetic, warm.
8. _____ Disorganized, careless.
9. _____ Calm, emotionally stable.
10. _____ Conventional, uncreative

Scoring the TIPI

1. Recode the reverse-scored items (i.e., recode a 7 with a 1, a 6 with a 2, a 5 with a 3, etc.). The reverse scored items are 2, 4, 6, 8, & 10.
2. Take the AVERAGE of the two items (the standard item and the recoded reverse-scored item) that make up each scale.

Example using the Extraversion scale: A participant has scores of 5 on item 1 (Extraverted, enthusiastic) and 2 on item 6 (Reserved, quiet). First, recode the reverse-scored item (i.e., item 6), replacing the 2 with a 6. Second, take the average of the score for item 1 and the (recoded) score for item 6. So the TIPI Extraversion scale score would be: $(5 + 6)/2 = 5.5$

Debrief Sheet

Thank you for taking the time to complete this questionnaire.

*The survey is now finished thank you for taking the time to complete this
In the event that answering some of these questions evoked strong or stressful
feelings.*

If you feel you wish to talk to someone there is a link provided below.

<http://www.aware.ie/>

<https://suicideprevention.ie/>

If you have any questions about this research, please feel free to contact me:

Cian O'Regan

Email: [REDACTED]