

Values, Drugs & Rock 'n' Roll: the relationship between music preference, values, and attitudes to drugs.

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Declaration

Declaration

‘I declare that this thesis that I have submitted to Dublin Business School for the award of H.Dip Psychology is the result of my own investigations, except where otherwise stated, where it is clearly acknowledged by references. Furthermore, this work has not been submitted for any other degree.’

Word count: 7,303

Signed: Clodagh Finnerty

Date: 20/03/20

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Abstract

The study aimed to explore the relationship between an individual's music preference, how they value Stimulation and Conformity, and how this relates to their attitudes towards recreational drug use. Participants (N=791) completed an online questionnaire which included questions from the STOMP, SVSS, and Generalized Attitudes Measure. Analysis showed that a preference for Upbeat and Conventional music styles was the strongest predictor for less favourable attitudes to drugs and this music preference had a weak positive significant relationship with valuing Conformity more. Energetic and Rhythmic & Intense and Rebellious music preferences had a weak positive significant relationship with more favourable attitudes to recreational drug use. Energetic and Rhythmic music preference also had a weak positive significant relationship with valuing Simulation more. This study identifies a relationship between certain music genres, one's values and their attitudes towards recreational drug use, which highlights potential interventions surrounding drug-related incidents at music events.

1. Introduction

1.1 Overview

Music is a ubiquitous part of everyday life and serves numerous functions, from mood management and enhancing concentration to social bonding (Rentfrow, Goldberg, & Levitin, 2011). There has been a long-standing relationship between music and favourable attitudes towards recreational drug use. Lewis (1980) notes that from the 1940's to early 1960's there was a link between music and alcohol use, and in years after this there was a stronger link between music and drug use in the form of marijuana or LSD. According to Singer and Mirhej (2006), both heroin and marijuana played a strong role in the development of Jazz music. Heavy drug use can be seen amongst many famous musicians, often with fatal results as can be seen from the deaths of Kurt Cobain, Janis Joplin, and Jim Morrison (Shapiro, 2003).

The music one chooses to listen to can reveal a lot about their personality and identity. According to North and Hargreaves (1999) music preference can be seen as a badge which people use to communicate their values, attitudes, and opinions about various matters. Little and Zuckerman (1986) found associations between those who were sensation seekers with a high optimal level for stimulation and a preference for rock and heavy metal music. Rentfrow and Gosling (2003) conducted further research in which they found possible links between music preference and personality which is still used today.

As music preference can be a way for people to convey their personality and values, it is also possible that it may influence their attitudes and behaviour. Values help explain the motivational basis of both attitudes and behaviour (Schwartz, 2012). A study by Young and West (2010) found that the values held by participants affected their attitudes to substance use. In particular, they found that anti-authority values were a strong predictor in substance

use. Recent research by Pimentel, Milfont, Gouveia, Vione, and Monteiro (2018) found evidence of a link between alternative genres of music and drugs and noted that participants who placed less of an emphasis on normative values such as tradition showed more favourable attitudes towards alcohol and drug use. This research suggests that there is a relationship between the music people listen to, what they value, and their viewpoint on recreational drug use. From this, it is feasible to deduct that if fans of a particular genre of music have more favourable attitudes to drug use and strongly value stimulation, they may be more likely to use drugs. It could then be suggested that a possible intervention for music event organisers would be to adopt a harm-reduction approach to recreational drug use at events such as live performances and festivals.

This current study will build on previous research around the relationship between music preference, attitudes to recreational drug use, and the role of conformity and stimulation as values and will provide further understanding and insights into the subject area as well as support for introducing a harm-reduction, health-led approach to recreational drug use at music events.

1.2 Music Genres, Culture, Portrayals, and Recreational Drug Use

Not all genres of music have the same relationship with attitudes to, and actual recreational drug use. A study by Mulder et al. (2009) shows there is a strong link between Urban music such as rap/hip-hop, soul/R&B, and Hard music such as punk/hardcore, techno/hard house and recreational drug use. MDMA, LSD, Cocaine, and Ketamine are associated with clubbing and dance music which has resulted in them being known as “club drugs” (Wu, Schlenger, & Galvin, 2006). It has been suggested that those with a preference for non-mainstream music, that is, music that is not in the pop charts, would be more prone to using substances such as recreational drugs (Mulder et al., 2009).

Identification in a particular culture is important when looking at music and recreational drug use. Forsyth, Barnard, and McKeganey (1997) highlight the links of certain subcultures with particular drugs and music and note the punk movement favoured glue and heroin while the acid-house movement preferred LSD and MDMA. Radenkova-Saeva (2008) notes that LSD was popular with the hippie movement and psychedelic rock music while cannabis is often associated with reggae music. Calafat, Gómez, Juan, and Becoña (2007) found that in a sample of participants who used illegal drugs, house and techno was the preferred musical genre for 48% while 52% of the participants identified as being part of the rave and house recreational culture.

The link between music and drugs can be seen and heard through lyrics and music videos. A study by Gruber, Thau, Hill, Fisher, and Grube (2005) examined the prevalence of illicit drugs in music videos by genre and found that illicit substances were shown in 31% of rap/hip hop videos, 9% of rock videos, 4% of rhythm & blues videos and had no presence in pop music videos. Although there was not any presence of drugs in pop music videos, the references to substance use is still evident through music lyrics. Pettigrew, Henriques, and Farrier (2018) found that 21% of songs broadcast from 2003-2015 in the Australian top 20 songs category had references to alcohol, tobacco and/or illicit drugs, however, 19% of these references were for alcohol alone with less specific references to illicit drugs. It would appear that explicit references to drug use do vary by genre. Primack et al. (2008) analysed 279 popular songs to examine portrayals of alcohol and drugs within specific genres. They found that rap songs contained the highest level of drug and alcohol references compared to other genres such as pop, country, or rock with 53% of rap songs referencing marijuana use and a further 37% referenced using other illicit drugs such as cocaine or amphetamines. This suggests that those who favour certain genres of music may have more favourable attitudes

towards drugs, possibly as a result of being more exposed to references of them. However, the exact reasons are not yet known.

1.3 Why is Music Associated with Drugs?

The precise explanation for the link between music and drugs is a matter of debate and numerous explanations have been proposed. The difference in prevalence between genres suggest that some genres may have a stronger link with more favourable attitudes towards recreational drug use than others which is perpetuated by the images shown in music videos. The presence of these images could possibly influence the behavioural norm and expectations of those viewing them and normalize recreational drug use which in turn results in more favourable attitudes towards the drugs (Christenson, Roberts, & Bjork, 2012).

According to social-cognitive theory (Bandura, 1986) people learn and gain knowledge from observing, modelling and imitating others in a social context. Using this theory, the drugs and music link could be explained by people seeing their favourite musicians engaging in perceived or actual drug use, and referencing drug use in song lyrics or videos which could result in a favourable impression of drug use as it has positive outcomes for the musicians they admire (Gruber, Thau, Hill, Fisher, & Grube, 2005). This alone would not encourage viewers to explicitly emulate the behaviour they see and use drugs, but it could contribute towards favourable attitudes to drug use as they see their idols referencing the behaviour in a positive manner.

It is important to note that favourable attitudes to a behaviour alone do not always translate into actual behaviour. The Theory of Planned Behaviour (Ajzen, 1985) accounts for the process that leads to a person consciously engaging in a behaviour. According to Ajzen (1985) in order for a behaviour to occur, attitudes towards that behaviour are firstly taken into consideration. Secondly, how others perceive the behaviour is also important and this is

known as the subjective norm. Thirdly, how much control the person perceives they have over the behaviour is also accounted for in this process. These three factors interact with each other to determine the behavioural intention which in turn may determine the behaviour occurring. Using this theory to frame recreational drug use, favourable attitudes to recreational drug use alone would not always translate into intending to, or actually taking drugs. However, if a person has favourable attitudes towards drug use, is surrounded by those who also have favourable attitudes towards drug use, believes that it will be easy for them to obtain and use drugs, then this could potentially result in an intent to use drugs. Yet this intention does not always result in actual behaviour either. For example, if a person has intentions to use drugs, but they anticipate that they might regret it, they could be unlikely to perform the behaviour (Wang, 2011). Therefore, while a person may have favourable attitudes to drug use, this does not imply that they would engage in actual drug use behaviours.

Another explanation for the relationship between music and drugs may be the effect that drug use has on a person's subjective experience of music. Drugs may be taken by some to enhance their experience of listening to music. People who take MDMA usually experience psychoactive effects, including mood elevation, altered sensory perception, and feeling emotionally close to others (Baumann, Clark, & Rothman, 2008). A study by Kaelen et. al (2015) found that participants who took LSD while listening to music experienced feelings of wonder, transcendence, tenderness, and power and the use of the drug enhanced participants' emotional response to music. Gerra et. al (1998) found that those who attend raves with techno music may use drugs in order to reduce the perception of fatigue and encourage endurance. They also note that non-drug using participants who listened to techno music during a trial experienced a neuroendocrine pattern that was induced by the fast, intense music and claim it was not unlike the biological reaction to psychological stress. They

found that participants who had a novelty-seeking temperament and a positive relationship with sensation-seeking had a less stressful experience than others of different temperaments when listening to the intense music suggesting that our temperament has an effect on our response to the music we listen to.

These findings suggest that certain music genres may be associated with drug use and that those who prefer intense and rebellious or energetic and rhythmic music may have more lenient attitudes towards the behaviour as these types of music have a faster rhythm and tend to be louder and more intense for the listener. One's temperament or personality may also be linked to this, as this research aims to explore.

1.4 Music Preference, Personality, and Values

There are many different types of music in the world but much of the research in the area suggests music preference can be grouped under four to five different styles of music. Rentfrow and Gosling (2003) distinguished between 4 different styles: Upbeat and Conventional style which includes chart pop music, country, soundtrack, religious music; an Intense and Rebellious style, encompassing rock, alternative, and heavy metal music; Energetic and Rhythmic style, including rap/hip-hop, soul/funk, and electronic dance music; and Reflective and Complex style, defined by classic music, jazz, blues, and folk music. They devised the STOMP scale in order to measure music preference.

Rentfrow and Gosling (2003) suggest that music preference is related to personality and from that, a person's values and goals. They used the Big Five Inventory personality traits – Openness to Experience, Agreeableness, Neuroticism, Extraversion, and Conscientiousness which act as the building blocks which combine to create a person's personality (John, Naumann, and Soto, 2008). They claim those who preferred Energetic & Rhythmic music such as rap/hip-hop and dance music, tended to positively relate to

Extraversion, Agreeableness, liberalism, self-perceived attractiveness, and athleticism and negatively related to social dominance orientation and conservatism. On the other hand, they found that those who favoured Upbeat & Conventional music such as chart pop music had positive correlations with Extraversion, Agreeableness, Conscientiousness, conservatism, self-perceived physical attractiveness, and athleticism and negative correlations with Openness to New Experiences, social dominance orientation, liberalism, and verbal ability.

A criticism of Rentfrow and Gosling (2003) and the STOMP scale was it involved a sample of only university students in Texas, a place where country and religious music is very popular. This raises questions about whether the research is generalisable across different age groups and geographic areas.

George, Stickle and Rachid (2007), conducted research that was consistent with the findings of Rentfrow and Gosling (2003). This study attempted to replicate parts of Rentfrow and Gosling's study (2003) but with a community as opposed to an undergraduate sample. This study found that those who preferred Upbeat & Conventional music were positively correlated to Extraversion and higher levels of Conscientiousness, while those who preferred Reflective & Complex music tended to be more intelligent and Open to Experience, and those who preferred Intense & Rebellious music also were more Open to Experience. They also discovered that men had a higher preference than women for Intense & Rebellious music, while women had more of a preference for Upbeat & Conventional music, and younger participants tended to prefer Energetic & Rhythmic music. While this study replicated some of the findings of Rentfrow and Gosling (2003), it also has some weaknesses. Even though this study was to use a community sample as opposed to an undergraduate sample, there was a disproportionately large number of University students (33.4%), which may not be a proper representation of the general population. Furthermore, the sample was from a liberal arts Christian school, which may have skewed the results as they may have had

a higher preference for religious music than the general population as the level of spirituality could be considered higher in this environment.

While the research in this area is not without limitations, it suggests that music preference is linked to our values and personality, and suggests that those who value Stimulation and are sensation-seeking may prefer more Intense & Rebellious or Energetic & Rhythmic styles of music while those who value Conformity may prefer Upbeat & Conventional styles of music.

1.5 Values and Attitudes to Drugs

Previous research has shown that greater drug use or more favourable attitudes toward drug use is observed in individuals who give priority to values related to Openness to Experience such as Stimulation compared to those who give priority to values related to Conservation such as tradition or Conformity (Ludwig & Pittman, 1999). The research findings by Gerra et. al (1998) support the idea that music preference is linked to a person's identity and values and in turn their attitudes, with some traits such as rebelliousness or sensation-seeking associated with a preference for louder, rhythmic music styles and risk-taking such as drug use (Mudler et al., 2010).

While Rentfrow and Gosling (2003) used the Big Five Inventory as the personality basis for their research, the components are similar to the values from the Theory of Basic Human Values (Schwartz, 2012) which this current study will use. This theory identifies values as beliefs that act as standards and criteria (Schwartz, 2012). According to the theory there are 10 broad values that are defined by the motivation that lies beneath them. They are organised into four higher-order groups as seen in Table 1., along with the defining goal of each as per Schwartz (2012).

Table 1. showing The Theory of Basic Human Values (Schwartz, 2012).

Group	Defining Goal
Openness to change	<p><i>Self-Direction</i> - Defining goal: independent thought and action--choosing, creating, exploring.</p> <p><i>Stimulation</i> - Defining goal: excitement, novelty, and challenge in life.</p>
Self-enhancement	<p><i>Hedonism</i> - Defining goal: pleasure or sensuous gratification for oneself.</p> <p><i>Achievement</i> - Defining goal: personal success through demonstrating competence according to social standards.</p> <p><i>Power</i> - Defining goal: social status and prestige, control or dominance over people and resources.</p>
Conservation	<p><i>Security</i> - Defining goal: safety, harmony, and stability of society, of relationships, and of self.</p> <p><i>Conformity</i> - Defining goal: restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms.</p> <p><i>Tradition</i> - Defining goal: respect, commitment, and acceptance of the customs and ideas that one's culture or religion provides.</p>
Self-transcendence	<p><i>Benevolence</i> - Defining goal: preserving and enhancing the welfare of those with whom one is in frequent personal contact (the 'in-group').</p> <p><i>Universalism</i> - Defining goal: understanding, appreciation, tolerance, and</p>

	protection for the welfare of all people and for nature.
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Some of these values can be congruent or conflict with each other, for example, the value of Benevolence may conflict with Power as one who is seeking success for themselves via dominance over others may have trouble helping others who are in need (Schwartz, 2012). These values are related to our attitudes as they are the basis on which they are formed. According to Schwartz (2012) attitudes are evaluations of objects, people, behaviours and events on a negative to positive scale. One's attitude towards a various range of matters can be measured by the use of the Generalized Attitude Measure (McCroskey, 1966).

Pimentel et al. (2018) found that more favourable attitudes toward use of alcohol, marijuana and other drugs were observed among individuals who endorsed excitement values such as pleasure as guiding principles in their lives, while more unfavourable attitudes to drug use was found among those who placed more of an emphasis on normative values such as tradition.

This research highlights a link between the importance of certain values to a person and how this influences their attitudes towards drug use and suggests people who place more value on excitement values such as Stimulation would have more favourable attitudes to drugs and those who value Conformity may have less favourable attitudes to drugs, as this research aims to establish.

1.6 The Dangers of the Relationship Between Music Preference, Values and Drugs

There appears to be a link between certain types of music, what people value and how these influence their attitudes to drugs, which may or may not result in them actually using drugs. This is echoed by Van Havere, Vanderplasschen, Lammertyn, Broekaert, and Bellis

(2011) who note that those who attend clubs, music festivals and dance events are more experienced in illegal drug use than other young people who “go out” to pubs, for example. Lim, Hellard, Hocking, and Aitken (2008) conducted a cross-sectional study of music-festival attendees and found that 46% had recently used illicit drugs. Furthermore, a report investigating 22 patients who attended an electronic music festival in New York in 2013 found that 95% of them had taken drugs or alcohol and 2 of these patients died (Ridpath et al., 2014).

These findings indicate that certain music events may include a high prevalence of illicit drug use which may result in devastating consequences. It suggests that certain music events would be appropriate places for interventions to promote safer drug use using a health-led, harm reduction model.

1.7 This Present Study

While previous research in this area suggests a link between music preference and personality/values, music preference and drug use, and values and drug use, there has not been a large amount of research examining the relationship between all three variables together, which this current study aims to do. Pimentel et. al (2018) did similar research however, they used an undergraduate sample in Brazil which makes it hard to generalise the findings to the general population. This was a similar weakness with much of the research in the above areas. Pimentel and colleagues also examined the mediating role of the variables of excitement and normative values which are umbrella terms which encompass a number of specific values. This study specifically focuses on the values of Conformity and Stimulation in order to get a more in-depth view of whether these are related to music preferences and how these relate to one’s attitude towards recreational drug use.

This study aims to examine the correlations between music preference, attitudes to recreational drug use and the importance of Conformity and Stimulation to the individual using a bigger sample, not just those in college or under 30 years old, in order to give further insights into the relationship between variables and make the findings more generalisable. The underlying rationale of this study is to identify associations (if any) between particular music genres, values, and attitudes to drug use, thus identifying potential avenues for targeted interventions to reduce drug-related harm at music events.

This study aims to explore the following hypotheses:

Hypothesis 1: There will be a positive correlation between people who favour Intense & Rebellious music and those with more favourable attitudes to recreational drug use.

Hypothesis 2: There will be a positive correlation between people who favour Energetic & Rhythmic music and those with more favourable attitudes to recreational drug use.

Hypothesis 3: There will be a negative correlation between those who favour Upbeat & Conventional music and those with less favourable attitudes towards recreational drug use.

Hypothesis 4: There will be a negative correlation between those who have favourable attitudes towards recreational drug use and those who place more value on Conformity.

Hypothesis 5: There will be a positive correlation between those with favourable attitudes towards recreational drug use and those who value Stimulation more.

Hypothesis 6: There will be a positive correlation between those who place higher value on Stimulation and those who prefer Energetic & Rhythmic music.

Hypothesis 7: There will be a positive correlation between those who place higher value on Stimulation and those who prefer Intense & Rebellious music.

Hypothesis 8: There will be a positive correlation between those who place higher value on Conformity and those who prefer Upbeat & Conventional music.

2. Methodology

2.1 Participants

A convenience and snowball sample consisting of the general public was used to recruit participants. Participants were invited to complete an online questionnaire which was posted and shared on the social networking sites Facebook, Instagram and the messaging app, Whatsapp. An information sheet at the beginning of the questionnaire outlined that participants were required to be over 18 years of age and consent to take part in the study. This was the only inclusion factor. The information sheet explained that participation was entirely voluntary and anonymous. No incentive was provided to participate. The sample consists of 791 participants. The gender breakdown of participants was: Male: 32.8%, N=250; Female: 66.8%, N=509; Non-Binary: 0.4%, N=3. All participants fell into the age range of 18 years to 50+ years old.

2.2 Design

This study implemented a quantitative approach using a non-experimental correlational design. Students were asked to complete a number of quantitative self-report measures which were designed to measure the variables of music preference (grouped into Reflective and Complex, Intense and Rebellious, Upbeat and Conventional, and Energetic and Rhythmic music), attitude to recreational drug use, and the level of value for Stimulation and Conformity. Correlational designs search for relationships between variables as opposed to causation or differences. The predictor variables were preference for Reflective and Complex, Intense and Rebellious, Upbeat and Conventional, and Energetic and Rhythmic music, and Stimulation and Conformity as values. The criterion variable was Attitude to

Recreational Drug Use. A Pearson correlation coefficient was used to test all hypotheses and further analysis was done by running a multiple regression in order to test the strength of the predictor variables on the outcome.

2.3 Materials

The questionnaire was made and circulated using Microsoft Forms and the data from the questionnaire was downloaded to Microsoft Excel 2016 and imported into SPSS 25 to conduct appropriate statistical analysis. The information sheet was shown at the beginning of the questionnaire (See Appendix A). The information sheet detailed the purpose of the study, the procedure involved and appropriate participation requirements. Participants were asked to tick a box to confirm they were over 18 years of age and that they consented to take part in the study. Participants were then asked to answer demographic questions relating to gender, and age (See Appendix B). Following these demographic questions, participants completed self-report questionnaires designed to provide a measure of music preference via the Short Test of Musical Preferences (STOMP) scale (Rentfrow and Gosling, 2003), attitude to recreational drug use via the Generalized Attitude Measure (McCroskey, 1966) and value of conformity and stimulation via the Schwarz Short Value Survey (Lindeman and Verkasalo, 2005). A debrief page was included at the end of the survey, which gave the contact details of various support services should the survey have led to any negative feelings for participants (See Appendix F).

Short Test of Musical Preferences (STOMP) Scale

The STOMP Scale (see Appendix D) was developed by Rentfrow & Gosling (2003) in order to categorise and measure music preferences by genre. Participants were asked to rate their preference for 14 different genres using a 7-point rating scale which ranged from 1=

“strongly dislike”, to 7= “strongly like”. Using factor analysis, Rentfrow & Gosling (2003) organised these genres into four dimensions: Reflective & Complex, Intense & Rebellious, Upbeat & Conventional, and Energetic & Rhythmic. Rentfrow and Gosling (2003) have tested the STOMP scale extensively and it has been used by other researchers in measuring music preference and it has been found to be both valid and reliable.

Generalized Attitude Measure

The Generalized Attitude Measure (see Appendix C) was designed by McCroskey (1966) in order to measure a wide array of target attitudes as opposed to one single attitude. This study asked participants to indicate their feelings towards recreational drug use using a Likert scale with six opposing pairs of words such as good or bad, wrong or right and beneficial or unbeneficial. The participants were asked to select a number along a scale between 1 and 7 that indicated their feelings. Scoring included reversed coding of items 1, 4, & 5 and for the purpose of this study total scores were used for analysis. McCroskey (1966) has found that the Generalised Attitude measure has a Cronbach's alpha estimates above .90 and has strong validity and reliability over time making it a suitable measure to evaluate participants attitudes.

Schwartz Short Value Survey

The Short Schwartz's Value Survey (SSVS), see Appendix E, was developed by Lindeman and Verkasalo (2005) as a short version of Schwartz's Value Survey (Schwartz, 1992), which is based on Schwartz's value theory. The original survey comprises of 57 value items which can be time-consuming to fill out so the SVSS involves the ranking of 10 values. This study is examining only the values Stimulation and Conformity, so these were the only values measured in the questionnaire. Participants were asked to rate how important each value was to them on a scale of 0=opposed to my principles to 8=of supreme

importance. Lindeman and Verkasalo (2005) tested the SSVS and found it had good reliability and validity.

2.4 Procedure

The online questionnaire was designed using Microsoft Forms. A link to the online questionnaire was uploaded to Facebook, Instagram, and Whatsapp with a public invitation to complete the questionnaire assuming they were at least 18 years old. An invitation was also extended to all participants to share the survey link across social media platforms and personal networks to ensure snowball sampling. All participants were initially met with an information sheet when clicking the link to the online questionnaire. This explained the objective of the study and that participation would include answering a series of short questions on music preference, attitudes to recreational drug use and how they value Stimulation and Conformity. Participants were notified that if negative feelings arose due to the questions surrounding recreational drug use, contact information for support services would be provided on the final page. Participants were reminded participation was completely voluntary and all responses were anonymous and untraceable to the individual, see Appendix A. After reviewing the information sheet, all individuals were asked to confirm they were 18 years old or above and that they consented to participate in the study. They were then asked to complete a number of demographic questions (see Appendix B) followed by the relevant psychometric questionnaires. Once the questionnaire had been submitted, participants were taken to a debrief sheet. Participants were thanked for their participation and contact details for support services were listed (see Appendix F). The data from the online survey was downloaded to Microsoft Excel and then coded into SPSS 25 for statistical analysis. The online survey remained open to data collection for 3 weeks and upon collecting

the data there were 791 responses in total, not all of which could be used. The average time to complete the questionnaire was 4 minutes and 1 second.

2.5 Ethics

Ethical approval for this study was sought from Dublin Business School Department of Psychology Ethics Committee. The Code of Professional Ethics of the Psychological Society of Ireland (Psychological Society of Ireland, 2011) was adhered to throughout the study. The target sample population was a general, non-vulnerable population. The information sheet detailed the purpose of the study, the procedure involved and appropriate participation requirements. The information sheet also explained that completing the survey may cause some minor negative feelings. Participants were advised that should minor negative feelings occur, there would be contact information for support services on the final page.

Participants were required to complete a mandatory age and consent question prior to commencing the study, thereby ensuring informed consent. The information sheet outlined that participation in the study was entirely voluntary, anonymous and that participants had the right to withdraw at any time prior to submitting the questionnaire. Due to the anonymous nature of responses, participants were informed that it would not be possible to withdraw data once it had been submitted. Data from the study was stored on a password protected computer and will be destroyed one year after submission of research.

3. Results

3.1 Overview

This results section will focus on descriptive statistics and inferential statistics. Descriptive statistics will include tables, charts and descriptions of variables including mean, standard deviation, maximums and minimums. Inferential statistics will include parametric tests such as a Pearson's correlation, and a multiple regression. These tests will determine correlations and differences between the variables in question.

3.2 Descriptive Statistics

The sample consists of 791 participants. All participants fell into the age range of 18 years to 50+ years old. Figure 1 shows the breakdown of the age group of participants with the majority of participants in the 18-25 age group.

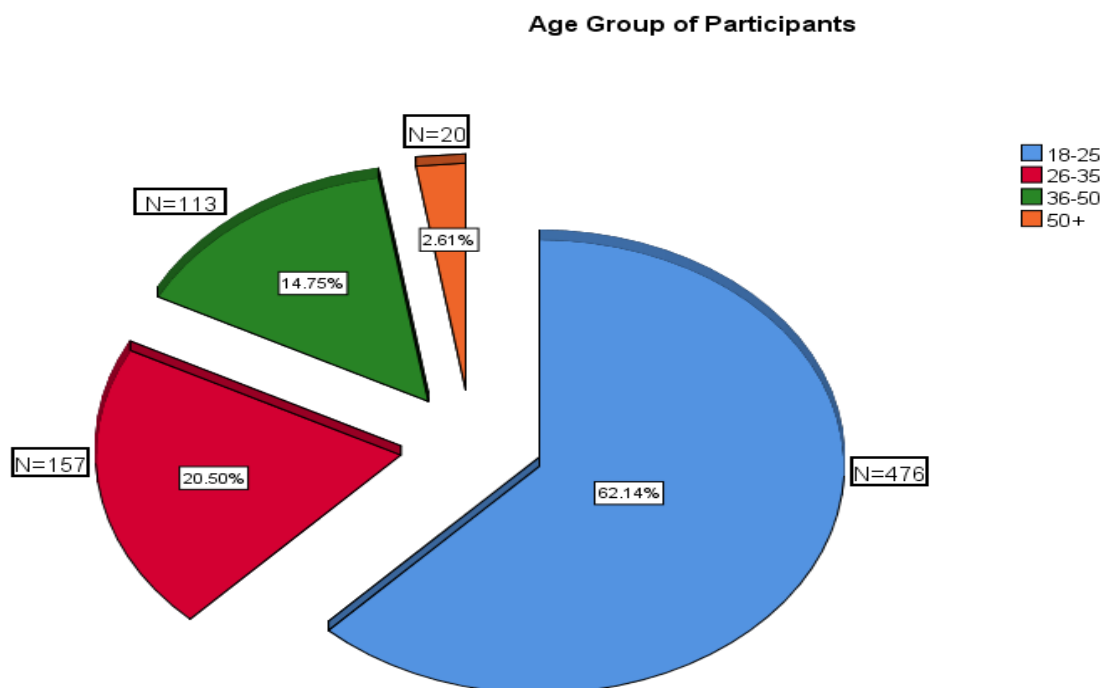


Figure 1: Pie Chart Showing Age Group of Participants.

The reliability of measures was calculated using Cronbach's Alpha as shown in Table 2.

Table 2: Reliability of Measures

	Generalised Attitudes Measure	Reflective & Complex Music Preference from STOMP Scale	Intense & Rebellious Music Preference from STOMP Scale	Upbeat & Conventional Music Preference from STOMP Scale	Energetic & Rhythmic Music Preference from STOMP Scale
N	6	4	3	4	3
Cronbach's Alpha	.869	.746	.720	.515	.364

The number of questions in each measure is represented by N. The measure is reliable at a Cronbach's Alpha score above .7. All measures were found to be reliable except the Upbeat and Conventional Music Preference from STOMP Scale and the Energetic and Rhythmic Music Preference from STOMP Scale.

Table 3 shows the mean and standard deviation of participant's score on Attitude to Recreational Drug Use, Reflective and Complex Music Preference, Intense and Rebellious Music Preference, Upbeat and Conventional Music Preference, Energetic and Rhythmic Music Preference, Stimulation as a value and Conformity as a value.

Table 3: Descriptive Statistics of Psychological Measures

Variable	Mean	Standard Deviation
Attitude to Recreational Drug Use	19.41	8.20
Reflective and Complex Music Preference	14.53	4.96
Intense and Rebellious Music Preference	12.01	4.33
Upbeat and Conventional Music Preference	16.07	3.88
Energetic and Rhythmic Music Preference	15.43	3.04
Value Stimulation	5.36	1.81

Value Conformity

5.37

2.10

The Attitude to Recreational Drug Use score was calculated on a scale of 6-42 with a higher score indicating a more favourable attitude towards Recreational Drug Use. The mean score was 19.41 meaning the average attitude was slightly less favourable overall. Both the Stimulation and Conformity scores were calculated on a scale of 0-8 with a higher score indicating the value was more important to the participant. The mean score for each was 5.36 and 5.37 respectively, which indicates that both values were quite important to the participants. Both the Reflective and Complex and Upbeat and Conventional music preferences were scored on a scale of 4-28 with a higher score indicating more of a preference. The mean scores for each were 14.53 and 16.07 respectively, which means Upbeat and Conventional music was more popular on average. Both the Intense and Rebellious and Energetic and Rhythmic music preferences were scored on a scale of 3-21 with a higher score indicating more of a preference. The mean scores for each were 12.01 and 15.43 which suggests that on average, Intense and Rebellious music was the least popular music preference in the sample.

Figure 2 shows the mean breakdown of the participant's music preference by the age groups. The 50+ age group was not included as there were only 20 participants in this group.

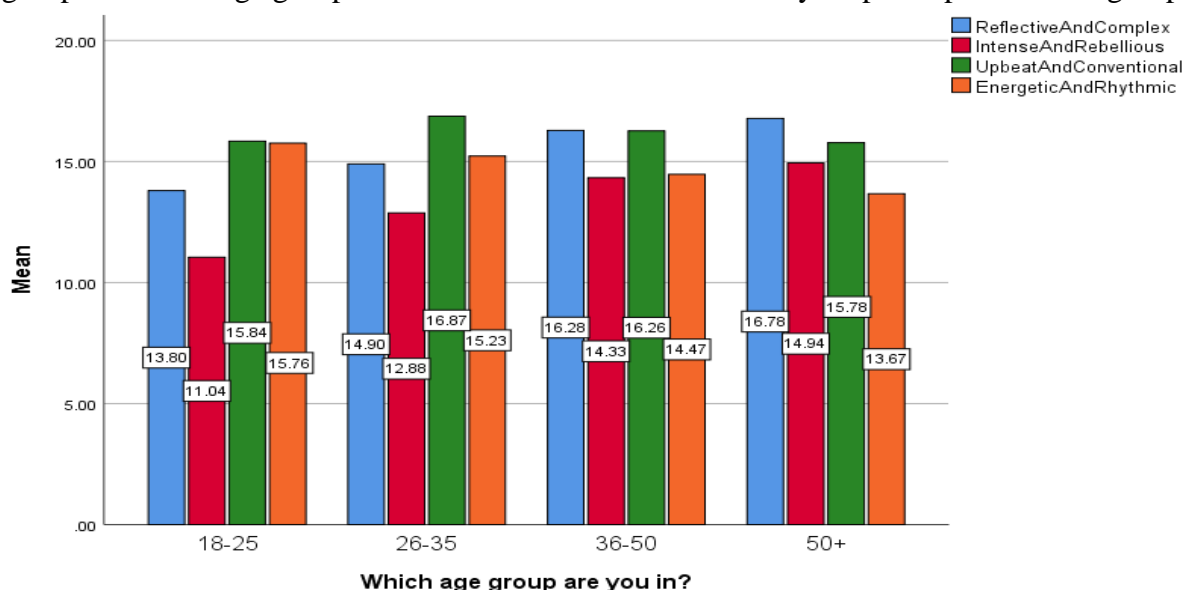


Figure 2: Bar chart showing the mean music preference between age groups.

The 18-25 age group favoured Upbeat & Conventional and Energetic & Rhythmic music the most while the 26-35 age group mostly favoured Upbeat & Conventional music. Those in the 36-50 age group favoured Reflective & Complex and Upbeat & Conventional music. The mean preference of Intense & Rebellious music rose in popularity in each age group from a mean of 11.04 in the 18-25 age group, to 12.88 in the 26-35 age group, up to 14.33 in the 36-50 age group.

3.3 Inferential Statistics

Pearson's correlation coefficients were ran in order to examine the relationship between music preference, values, and attitudes to recreational drug use. This section will describe the results of these parametric tests and provide further analysis with regard to whether hypotheses can be rejected or accepted.

Hypothesis 1:

A Pearson Correlation coefficient found that there was a weak positive significant relationship between Intense & Rebellious music preference (M= 12.02, SD= 4.33) and favourable attitudes to recreational drug use (M= 19.46, SD=8.17) ($r(726) = 0.14, p < .001$). Therefore, the null is rejected.

Hypothesis 2:

A Pearson Correlation coefficient found that there was a weak positive significant relationship between Energetic & Rhythmic music preference (M= 15.40, SD= 3.06) and favourable attitudes to recreational drug use (M= 19.46, SD=8.17) ($r(726) = 0.20, p < .001$). Therefore, the null is rejected.

Hypothesis 3:

A Pearson Correlation coefficient found that there was a moderately strong negative significant relationship between a preference for Upbeat & Conventional music ($M= 16.08$, $SD= 3.78$) and less favourable attitudes to recreational drug use ($M= 19.46$, $SD=8.17$) ($r(726) = -0.30$, $p<.001$). Therefore, the null is rejected.

Hypotheses 4 & 5:

Table 4 shows the correlation between Stimulation and Conformity and Attitudes to Recreational Drug use.

Table 4: Correlation Table.

		Attitude to Recreational Drug Use
Stimulation	Pearson Correlation	0.162**
	Sig. (1-tailed)	.000
	N	756
Conformity	Pearson Correlation	-.241**
	Sig. (1-tailed)	.000
	N	761

*. Correlation is significant at the 0.05 level (1-tailed).

**. Correlation is significant at the 0.01 level (1-tailed).

Table 3 shows there is a negative relationship between those who have favourable attitudes towards recreational drug use and those who value Conformity more ($r(754) = -.24$, $p<.001$) and there is a positive relationship between those with favourable attitudes towards recreational drug use and those who value Stimulation more ($r(759) = .16$, $p<.001$).

Therefore, the null is rejected.

Hypotheses 6, 7 & 8:

A Pearson Correlation coefficient found that there was a weak positive significant relationship between placing more value on Stimulation and a preference for Energetic & Rhythmic music ($r(747) = 0.15, p < .001$). Therefore, the null is rejected.

A Pearson Correlation coefficient found that there was no significant relationship between valuing Stimulation and a preference Intense & Rebellious music ($r(754) = 0.03, p = .151$). Therefore, the null hypothesis cannot be rejected.

A Pearson Correlation coefficient found that there was a weak positive significant relationship between valuing Conformity more and a preference for Upbeat & Conventional music ($r(747) = 0.18, p < .001$). Therefore, the null is rejected.

Multiple Regression:

Multiple regression was used to test whether music preference and Stimulation and Conformity as values were predictors of attitudes to recreational drug use. The results of the regression indicated that six predictors significantly explained 19% of the variance ($R^2 = .19, F(6, 721) = 29.01, p < .001$). It was found that a music preference for Upbeat and Conventional music was the strongest significant predictor (borderline moderately strong) for less favourable attitudes to recreational drug use ($\beta = -.29, p < .001, 95\% \text{ CI} = -.78, -.47$). Placing value on Conformity was also a significant weak predictor for less favourable attitudes to recreational drug use ($\beta = -.16, p < .001, 95\% \text{ CI} = -.89, -.35$). A preference for Energetic and Rhythmic music then was a weak significant predictor for more favourable attitudes to recreational drug use ($\beta = .16, p < .001, 95\% \text{ CI} = .25, .60$). Table 5 outlines each variables relationship in predicting attitudes to recreational drug use.

Table 5: Multiple Regression Table.

	Beta	Sig.	95.0% Confidence Interval for B	
			Lower Bound	Upper Bound

Reflective and Complex	.01	.757	-.11	.15
Intense and Rebellious	.12	.001	.10	.37
Upbeat and Conventional	-.29	.000	-.78	-.47
Energetic and Rhythmic	.16	.000	.25	.60
Stimulation	.14	.000	.33	.94
Conformity	-.16	.000	-.89	-.35

4. Discussion

4.1 Overview of Findings

The objective of this study was to investigate the relationship between music preference, values, and attitudes to recreational drug use. Included under values were the variables of Stimulation and Conformity, measured using the Schwarz Short Value Survey (Lindeman and Verkasalo, 2005). The participant's music preference was described using the STOMP scale (Rentfrow & Gosling, 2003) while their attitudes to recreational drug use was measured using The Generalized Attitude Measure (McCroskey, 1966).

The first hypothesis proposed that there would be a positive relationship between people who favour Intense & Rebellious music and those with more favourable attitudes to recreational drug use. The second hypothesis was similar in that it proposed that there would be a positive correlation between those who favour Energetic & Rhythmic music and those with more favourable attitudes to recreational drug use. The participants who preferred these two genres of music did have more favourable attitudes and so, the results showed that the hypotheses were supported. The third hypothesis proposed there would be a negative correlation between those who favour Upbeat and Conventional and those with less favourable attitudes to recreational drug use and the results showed that those who prefer this style of music do have less favourable attitudes to recreational drug use and so, this hypothesis was also supported. The results showed that preferring Upbeat & Conventional music was the strongest predictor for less favourable attitudes towards recreational drug use. These findings were consistent with the findings of previous research by Pimentel, Milfont, Gouveia, Vione, and Monteiro (2018) in that those who prefer alternative genres of music are linked to more favourable attitudes to drugs. This study looked to expand on this previous

research and highlighted which genres, as encompassed by the 4 different style groups in the STOMP scale (Rentfrow & Gosling, 2003), have a relationship with more or less favourable attitudes to recreational drug use. The findings also support other research (Calafat, Gómez, Juan, & Becoña, 2007; Wu, Schlenger, & Galvin, 2006; Mudler et al. 2009) in that some genres with music are more closely associated with drugs than others, for example, Energetic & Rhythmic music.

Hypothesis 4 predicted that there would be a negative correlation between people with favourable attitudes towards recreational drug use and those who value Conformity. The results showed that those who place a higher value on Conformity do not have more favourable attitudes to recreational drug use and so, the hypothesis was supported. Similarly, hypothesis 5 predicted a positive correlation between those who value Stimulation with favourable attitudes towards recreational drug use and this was also found to be true. These findings support previous research (Mudler et al. 2010, Ludwig & Pittman, 1999) in that individuals who give priority to values related to Openness to Experience such as Stimulation may be more likely to engage in risk-taking activities like recreational drug use or just have more favourable attitudes towards it. This study aimed to expand on this research by seeking out the relationship between Conformity and Stimulation with attitudes to recreational drug use specifically.

Hypothesis 6 proposed that there would be a positive relationship between a preference for Energetic & Rhythmic music with Stimulation while hypothesis 8 proposed a positive correlation between Conformity and a preference for Upbeat & Conventional music. Hypothesis 7 assumed there would be a positive correlation between a preference for Intense & Rebellious music and Stimulation. The results showed that those who value Stimulation did have a preference for Energetic & Rhythmic music so hypothesis 6 was supported. Similarly, people who valued Conformity also preferred Upbeat & Conventional music and

so, hypothesis 8 was supported. However, the results showed no significant relationship between Stimulation and Intense & Rebellious music and so, hypothesis 8 was not supported. This went against the findings of Rentfrow & Gosling (2003) who proposed that those who prefer Intense & Rebellious music also valued Stimulation.

The findings of this study do suggest that one's music preference and personal values may influence whether they have more of less favourable attitudes to recreational drug use. Those that value Stimulation are positively correlated to a preference for Energetic & Rhythmic music which has a positive relationship to favourable attitudes to recreational drug use, and the three variables are linked. Similarly, a preference for Upbeat & Conventional music is negatively correlated to favourable attitudes to recreational drug use and this has a negative relationship with those who value Conformity. This research supports the findings of previous research as it suggests that our music preference is linked to our personality and values, which in turn influence our attitudes towards a variety of matters including what we think and feel regarding recreational drug use.

4.2 Limitations and Strengths

A potential problem in this study was the STOMP scale reliability. The Cronbach's Alpha score was below 7 for Upbeat & Conventional, and Energetic & Rhythmic music. Weaknesses in previous research (George, Stickle and Rachid, 2007; Rentfrow and Gosling, 2003) found that the scale may not be globally generalisable as the sample was used in areas where religious and country music was particularly popular. This may be a problem as religious and country music in Ireland and Europe has different connotations to that of religious and country music in the USA. Since this scale grouped religious music along with pop music under the Upbeat & Conventional style this may have been problematic due to

their perceived differences and suggests the scale is more suited to an American sample. Similarly, soul/funk music was included with rap/hip-hop and electronic dance music under the Energetic & Rhythmic style group. Soul/funk music may also be viewed as very different to dance or rap music and this may have resulted in a poor internal consistency within this grouping. Another weakness in this study was 62.14% of participants were in the 18-25-year-old age group and so, this may have affected the results as this younger age group were over-represented.

The strengths of this study included the reliability and validity of the Generalised Attitude Measure (McCroskey, 1966) and the Short Schwartz's Value Survey (Lindeman and Verkasalo, 2005). Another strength of this study was the large sample size which, unlike previous research in this area did not use a convenience sample but consisted of the general population. The questionnaire itself was short and concise meaning many people were willing to do it as it did not take up too much time and was straightforward. The general response to the study by participants was very positive and many showed huge interest in the concepts covered in the study, perhaps as music appears to be important to people along with the widespread usage of recreational drugs that is often reported in the media making it a topical matter.

4.3 Future Research and Applications

This study used The Generalized Attitude Measure (McCroskey, 1966) and this measured one's attitudes towards recreational drug use as a whole. However, people may have very different attitudes towards different drugs. People may have more lenient attitudes to drugs such as cannabis while they may view drugs such as cocaine or heroin in a much more serious and dangerous light as the risks associated with each of these drugs are very

different. Future research could potentially use a different scale in order to specify the drugs in question in order to have a more specific view of attitudes towards recreational drug use. Another possible direction for future research would be to explore gender differences in the research as well as a longitudinal study to examine whether musical preferences, values and attitudes to recreational drug use change as one gets older.

As previously discussed, the Theory of Planned Behaviour (Ajzen, 1985) proposed that attitudes do not directly translate into behaviour however, it does play a part in the decision process of enacting a behaviour. This study found that certain styles of music such as Intense & Rebellious and Energetic & Rhythmic are more positively correlated with favourable attitudes to recreational drug use and Stimulation – a value which is associated with risk-taking behaviours. From this, it can be suggested that music events with these styles of music being played may be a potential intervention opportunity to introduce a harm-reduction, health-led approach and reduce drug-related deaths.

4.4 Conclusion

From this research it is possible to pertain that a preference for Intense & Rebellious music is positively related to favourable attitudes to recreational drug use, as is a preference for Energetic & Rhythmic music. Those who value Stimulation are positively correlated to those who prefer Energetic & Rhythmic music while those who prefer Upbeat & Conventional music are positively correlated to those who value Conformity. Both Upbeat & Conventional music and Conformity are then negatively related to favourable attitudes to recreational drug use.

The results of the study are supported to an extent by current literature, however there is definitely a need for more research in this area. Drugs, excitement values, and music have a

long-standing relationship, often with devastating consequences and by using the findings of this study to support interventions at music events, it may make this relationship somewhat safer.

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Appendices

Appendix A

Information Sheet

Drugs, Values, and Rock 'n' Roll: the relationship between music preference, attitudes to drugs and values. My name is Clodagh Finnerty and I am conducting research in the Department of Psychology that explores the relationship between people's music preference and attitude to recreational drug use and how this relates to their values. This research is being conducted as part of my studies and will be submitted for examination. It will also be presented as part of the examination process. You are invited to take part in this study and participation involves completing the following anonymous questionnaire. The questionnaire asks some questions around attitudes to recreational drug use that might cause some minor negative feelings. If any of the questions do raise difficult feelings for you, contact information for support services are included on the final page. Participation is completely voluntary, and you are not obliged to take part. Participation is anonymous and confidential. Therefore, responses cannot be attributed to any one participant. For this reason, it will not be possible to withdraw from participation after the questionnaire has been collected. The questionnaires will be securely stored and data from the questionnaires will be stored on a password protected computer. Participants must be over 18 years of age. It is important that you understand that by completing and submitting the questionnaire that you are consenting to participate in the study. Should you require any further information about the study, please contact Clodagh Finnerty at xxxxxx@mydbs.ie. Thank you for taking the time to complete this survey.

1.Are you aged 18 or over?

- Yes
- No

2.Do you consent to participate in this study?

- Yes
- No

Appendix B

Demographic Questions

3. Which of the below do you identify as?

- Female
- Male
- Non-Binary
- Other

4. Which age group are you in?

- 18-25
- 26-35
- 36-50
- 50+

Appendix C

Generalized Attitude Measure

Directions: On the scales below, please indicate your feelings about Recreational Drug Use e.g. using drugs such as Ecstasy/MDMA, Cocaine, Ketamine, LSD, and Cannabis in a recreational manner. Numbers "1" and "7" indicate a very strong feeling. Numbers "2" and "6" indicate a strong feeling. Numbers "3" and "5" indicate a fairly weak feeling. Number "4" indicates you are undecided or do not understand the adjective pairs themselves. There are no right or wrong answers. Only choose one number per line.

5. Recreational Drug Use is:

- 1
- 2
- 3
- 4
- 5
- 6
- 7

Good

Bad

6. Recreational Drug Use is:

Wrong

- 1
- 2
- 3
- 4
- 5
- 6
- 7

Right

7.Recreational Drug Use is:

Harmful

- 1
- 2
- 3
- 4
- 5
- 6
- 7

Beneficial

8.Recreational Drug Use is:

Fair

- 1
- 2
- 3
- 4
- 5
- 6
- 7

Unfair

9.Recreational Drug Use is:

Wise

- 1
- 2
- 3

Appendix E

The Short Schwartz's Value Survey

Directions: Please, rate the importance of the following values as a life-guiding principle for you. Use the 8-point scale in which 0 indicates that the value is opposed to your principles, 1 indicates that the value is not important for you, 4 indicates that the value is important, and 8 indicates that the value is of supreme importance for you.

12. STIMULATION (daring, a varied and challenging life, an exciting life)

- 0-Opposed to my principles
- 1-Not important
- 2
- 3
- 4- Important
- 5
- 6
- 7
- 8 - Of supreme importance

13. CONFORMITY (obedience, honouring parents and elders, self-discipline, politeness)

- 0-Opposed to my principles
- 1-Not important
- 2
- 3
- 4- Important
- 5
- 6
- 7
- 8 - Of supreme importance

Appendix F

Please press Submit below to finish the survey.

Thank you for your answers and for your participation, it is greatly appreciated. Your response has been anonymously recorded.

If you feel that answering this survey has raised some issues for you, please consider contacting some of the support services listed below, or speak to a friend, family member or professional. Some available supports that you may find helpful include:

Samaritans:

Number: 116 123

Available 24 hours a day, 365 days a year. There is no charge to call.

HSE drugs and alcohol helpline:

This confidential service has both a freephone Helpline (1800 459 459) and an email support service (helpline@hse.ie).

Drug and alcohol information and support:

www.drugs.ie

Press submit below to finish the survey.