

**Sensitivity to Punishment and Reward, Tolerance for Ambiguity and Peer Influences on
Positive Risk-Taking**

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BAHPSYCHNCI3: Final Year Project

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Submission of Thesis and Dissertation

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Abstract

Background: Taking risks is a decision we make as a part of everyday life. Most of the research perceives risks as negative but it's important to acknowledge that risks can be positive too.

Aim: The purpose of this research is to investigate the extent to which positive risk-taking is predicted by sensitivity to reward and punishment, tolerance for ambiguity and peer influences, while also exploring associations of gender and age on positive risk-taking.

Methodology: A cross-sectional convenient sample design was utilised via survey to measure the Positive Risk-Taking Scale (PRT), Sensitivity to Punishment and Sensitivity to Reward Questionnaire (SPSRQ), Tolerance for Ambiguity Scale (TAS) and the Positive Peer Questionnaire (PPQ) among 153 adult participants across countries.

Results: The standard multiple regression analyses revealed that tolerance to ambiguity was the most significant predictor of positive risk taking. The independent t-test analysis found non-significant findings between men and women. The Spearman's rank-order correlation analysis found non-significant findings between age and positive risk taking.

Conclusion: Broader implications include providing structured opportunities for positive risk taking in academic environments as it would allow growth of soft skills that can be applied in both academic and real-world settings.

Keywords: Positive Risk-Taking, Sensitivity to Punishment and Sensitivity to Reward, Tolerance for Ambiguity, Positive Peer Influences

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Introduction

Positive Risk-Taking

Taking risks is a decision we make and is part of everyday life (Fryt et al., 2024). It is a complex phenomenon (Ayton et al., 2020) that is widely accepted as engaging in behaviours that lead to negative outcomes or positive outcomes. Examples of negative outcomes are considered antisocial and dangerous, while positive outcomes are socially acceptable and beneficial to well-being (Figner & Weber, 2011; Fryt et al., 2024). Despite risk taking resulting in both positive and negative outcomes, most research focuses on the negative manifestations during adolescence (Fryt & Szczygiel, 2021) by addressing interventions to manage or prevent the negative consequences of such risks including substance use (Blondel et al., 2007), risky driving (Zhang et al., 2019), stealing (Duell & Steinberg, 2019) and gambling (Mishra et al., 2010).

Although many risks are constructive for development (Chassin et al., 1988), the characteristics that make positive risks different are their legality, as well as social acceptability (Duell & Steinberg, 2019), while their riskiness is due to the potential outcome being uncertain and variable (Figueredo & Jacobs, 2011), as a severity of their potential risk costs, rather than consequence (Duell & Steinberg, 2019). Risk behaviours are organised along a spectrum of desirability with positive risks at one end, and negative risks being at the other end (Duell & Steinberg, 2019). In some circumstances, it is more appropriate to place risks in the middle of the spectrum as there is ambiguity in their social acceptability, for example driving through a red light to take an injured individual to the emergency room. The perception of positive and negative risk behaviours along this spectrum may vary across cultures, but authors Duell and Steinberg (2021) assume that in most societies, negative risks include behaviours such as getting in a car with an intoxicated driver, fighting, and substance

use, whereas positive risks include behaviours such as enrolling in a challenging course, or standing up for one's beliefs in the face of pressure to do otherwise.

Describing risk taking as positive in the literature emphasises that not all risks are naturally problematic (Fryt et al., 2022). Instead of eliminating all risk behaviours, promoting positive risks should be emphasised in effort to minimise negative risks (Fryt et al., 2022). In relation to gender, men are perceived as inclined to take more risks than women (Byrnes & Miller, 1999; Duell et al., 2018). This may be due to women perceiving danger as higher in all domains except social ones, whereas men perceive social situations as riskier (Figner & Weber, 2011). However, a recent study by Joanna and colleagues (2022) reveal that there is a very small difference in positive risk-taking and gender. This implies that although men are generally more susceptible to risk-taking than women, women may be more inclined to take positive risks for their developmental benefits. Hence, additional research is required to investigate gender differences specific to positive risk-taking.

In theory, positive risks help individuals achieve their goals in a developmentally appropriate and socially acceptable manner, consisting of self-challenging tasks, standing up for what you think is right (Duell & Steinberg, 2019), applying for a promotion, or maintaining independence as an older adult (Fryt et al., 2022). Most empirical research on positive risk-taking has been conducted with a focus on adolescents. However, in a recent study, age was not shown to be associated with positive risk-taking across adolescents and adults (Joanna et al., 2022). This is in contrast with a newer study by Fryt and colleagues (2024), which found that positive risk-taking was greatest in middle adulthood. Further research is required to provide a better understanding of the influences of positive risk-taking across ages.

Sensitivity to Punishment and Sensitivity to Reward

Taking positive risks can lead to potential rewards and punishments (Fryt et al., 2024). For example, starting a new friendship has the reward of building a new relationship, or the risk punishment of being rejected and feeling embarrassment (Fryt et al., 2024). In line with Gray's Behavioural Activation and Behavioural Inhibition System, both rewards and punishments are motivating (Cooper & Gomez, 2008) and can be internal such as "feeling good" when turning a sharp corner at high speed (Greening & Stoppelbein, 2000; Smerdon & Francis, 2011) or external such as gaining "cool" status in the friend-group (Scott-Parker et al., 2009). Punishment causes the behaviour to be less likely repeated (Shao et al., 2025; Torrubia et al., 2001; Zhao et al., 2024), while rewards causes the risky behaviour to be more likely repeated (Shao et al., 2025).

Despite previous studies associating prosocial behaviour with sensitivity to reward (Duell et al., 2016; Wood et al., 2013), a study among gamblers (Wardell et al., 2015) and a longitudinal study among Australian adolescent students (Wood et al., 2013) both demonstrated that sensitivity to reward was predictive of prosocial behaviour and substance use motives. Alternatively, Murray and Mullan's (2019) study with Australian adult university students found that sensitivity to reward did not account for any significant association in binge drinking behaviours. This indicates that risk-taking could start in early years and alternate through adulthood, and age may be a major factor in sensitivity to reward motivations towards positive risks. Sensitivity to punishment was associated with motives to win and do better especially when gambling (Wardell et al., 2015). Since risky behaviour during adolescence is the result of their reward system being easily aroused, and immature self-control (Duell et al., 2016), this may indicate why adolescents and gamblers have significant sensitivity to reward towards substance use. This is further supported by a recent large American adolescent longitudinal study by Shao and colleagues (2025), suggesting an

increased likelihood of substance use initiation in adolescents is associated with fun seeking desires. As most of the literature has focused on adolescents, and we see similar behaviours in the risky behaviours of substance use across these social contexts, it is vital to investigate how to alternate this sensitivity to reward associated with negative risk taking behaviour towards positive risks in adults and to wider social contexts as the ways in which reward seeking are linked to risk taking vary across cultures (Duell et al., 2016). Furthermore, research on sensitivity to punishment in adults would bring insight into a different perspective of positive risk-taking.

A recent 2-year longitudinal study by Gao and colleagues (2025) among young Chinese adolescents, suggested sensitivity to reward, quality of friendships, attentional control, and planning was positively related to positive risk-taking. As planning is done during positive risk-taking, this suggests it is intentional, emphasising that positive risks are adaptive, strategic behaviours that are thought-out processes and are not usually done on impulse. Although planning seems to be a part of positive risk-taking, interestingly, research suggests that tolerance for ambiguity is a motivating factor for people to take positive risks (Fryt & Szczygiel, 2021).

Tolerance for Ambiguity

Tolerance for ambiguity was initially identified as a personality trait in the psychological field (Chen Liu, 2015). Ambiguity in risk-taking is from lack of information (Elembilassery et al., 2024; Yu et al., 2022) and the uncertainty of its outcome (Deng et al., 2023; Einhorn & Hogarth, 1985; Trimpop, 1994; Vogel et al., 2024; Yu et al., 2022).

Tolerance for ambiguity is when an individual embraces new circumstances without feeling uncomfortable (Yu et al., 2022). Interestingly, individuals spontaneously used their previous experiences to guide their ambiguity (Galvan & Sanfey, 2024). Although we don't approach certain risks because of their ambiguity (Elembilassery et al., 2024), by using our previous

experiences we are able to derive relative information from them making them less ambiguous and more approachable. Further research on whether individuals are likely to take positive risks even in ambiguous situations would be insightful.

Exploring tolerance for ambiguity from an academic perspective, medical students who tended to choose unstructured fields such as psychiatry were more tolerant of ambiguity than those who chose relatively structured fields of study such as surgery (Budner, 1962). A recent study among Polish medical students by Leite-Mendes and colleagues (2024), revealed that an intermediate level of ambiguity aversion in medicine was associated with a significant increase in the number of correct answers, and decrease in the number of blank answers in their exams. A decrease in the number of wrong answers were associated with high levels of ambiguity aversion. Those who tolerate ambiguity have resilience in trying new and unpredictable phenomena and are led by curiosity as an opportunity, rather than an obstacle (Fam et al., 2016).

As positive risks are risks that are socially acceptable, tolerance for ambiguity from a social perspective reveals that there is a significant relationship between social comparison and tolerance for ambiguity (Elembilassery et al., 2024). Social comparisons in relation to ability and skill had a negative relation to an individual's tolerance for ambiguity (Elembilassery et al., 2024). In contrast, social comparison in relation to opinions had no relation with an individual's tolerance for ambiguity (Elembilassery et al., 2024). Low tolerance for ambiguity is seen when an individual perceives themselves as less capable, or less knowledgeable than others (Heath & Tversky, 1991). This phenomenon is termed the comparative ignorance hypothesis, grounded in comparisons under ambiguous situations (Fox & Tversky, 1995). This reveals that individuals have an aversive reaction towards phenomena that are new to them. Additionally, recent qualitative and quantitative research by Dan and colleagues (2025) shows that individuals are generally risk and ambiguity averse in

decision making that involves money, and aim to maximise their outcomes. Although this study is investigating risk taking with the involvement of money, the researcher gave an incentive of \$4 to participants. This could indicate that those who needed money were more likely to take part in this study as they may have seen this as an ambiguity aversive way to gain money. As this study looks at risk taking that involves money, more research is needed exploring positive risk-taking from a day-to-day perspective to obtain greater generalisable results across populations and social contexts.

Peer Influences

In the past, research on peer influence has focused on maladaptive behaviours (Laursen & Veenstra, 2021) such as peer substance use, tobacco use (Mason et al., 2017), and risky driving (Scott-Parker & Weston, 2017). When risky driving, imitation of peers and anticipated rewards and punishments were significant predictors (Scott-Parker et al., 2009). Additionally, in the presence of peers, sensitivity to rewards is increased dramatically in adolescents and young adults (Scott-Parker & Weston, 2017). This shows that the approval of the peer group is usually highly desirable when partaking in these maladaptive risks. Peer influence is a prevalent force during adolescence, as it can influence both adaptive and maladaptive attitudes and behaviours (Laursen & Veenstra, 2021). This tendency of focusing on issues has influenced the views of peers as being negative (Buckley et al., 2021; Laursen & Veenstra, 2021). Although peer influence is a strong predictor of adolescents' risk-taking behaviours, not all adolescents are vulnerable to their peer influences (Telzer et al., 2021). There are individuals who seek rewards socially, and in a socially accepted way, hence they take positive risks for exploration and growth (Fryt & Szczygieł, 2021). As most of the literature focuses on risks in adolescents, there is a lack of research on positive peer influences on adult samples.

A recent Chinese adolescent study displayed that as students progressed through their years in school, peer influence grows significantly more in predicting positive risk-taking (Liu et al., 2024). This could indicate that the older an individual grows, the more peer influence they may have, hence positive risk taking is necessary in adults to be role models for those who look up to them. Additionally, it may imply that the longer an individual is in a particular group, the more peers are socially accepting. Alternatively, a recent 2-year longitudinal study with a Chinese adolescent sample, indicated that positive risk-taking was associated with higher negative peer norm. This is an interesting finding as it contradicts most previous findings indicating negative peer norms were associated with positive risk behaviours rather than maladaptive risks. Additionally, positive risk-taking was associated with higher planning, and the interaction between sensation-seeking and friendship quality (Gao et al., 2025). This demonstrates that positive risk-taking is an intentional behaviour, hence the individual is expecting a certain outcome. Additionally, it may indicate that the quality of peer friendships matters more than the number of peers in the friend group.

The Current Study

Therefore, the research aim is to investigate the extent to which positive risk-taking is predicted by sensitivity to reward and punishment, tolerance for ambiguity, and peer influences, while also investigating the significant difference in positive risk-taking levels in males and females, as well as the association in positive risk-taking scores in ages. Theoretically, Positive risks allow people a relatively safe and culturally acceptable way to accomplish their objectives and meet their developmental needs (Duell & Steinberg, 2021). However, despite the benefits of positive risk-taking, most of the literature focuses on negative risk-taking and empirical work on positive risk taking has been overlooked (Duell & Steinberg, 2021).

Taking risks requires a tolerance of risk (Duell & Steinberg, 2021). Individuals with low tolerance of ambiguity experience stress, behave rashly, and avoid ambiguous stimuli (Frenkel-Brunswik, 1949; Furnham & Ribchester, 1995). Conversely, individuals with high tolerance of ambiguity perceive ambiguous situations/stimuli as desirable, challenging, and interesting and neither deny nor distort their complexity of incongruity (Furnham & Ribchester, 1995). However, tolerance to ambiguity in relation to positive risk taking is unexplored in an adult sample (Fyrt & Szczygiel, 2021).

There are strong indications that sensitivity to reward are among the factors that predict both types negative and positive risk-taking (Fyrt & Szczygiel, 2021). Engaging in activities such as trying new things and meeting new people may evoke perceptions of potential rejection or evaluation that result in perceived risk due to the sensitivity to social threats and rewards, (Patterson et al., 2023). Simultaneously, engaging in these behaviours may be especially rewarding as there is a potential of achieving social status, inclusion, or positive peer perceptions (Patterson et al., 2023). Some studies consider activity of reward system benefits experience-based learning in young individuals crucial for adaptive and exploratory risk-taking (Romer, Reyna, & Satterthwaite, 2017). Furthermore, factors that predict only positive or negative risk-taking, or have contrary associations with them, are less recognized. Sensitivity to punishment could be a greater regulator of risk-taking with negative outcomes rather than positive outcomes (Fyrt & Szczygiel, 2021). Therefore, it will be insightful to see whether sensitivity to punishment and reward influences an individuals positive risk-taking. Research in this area consistently shows peers influence in an individuals decision-making, however fewer studies have examined the influence of peers on positive risk taking (Duell & Steinberg, 2021).

This study is important as it will provide more understanding of risks that enhances an individuals growth and development as well as attempt identify predictors of positive risk-

taking. Specifically, the research questions are (1) to what extent will positive risk-taking be predicted by sensitivity to reward and punishment, tolerance for ambiguity, and peer influence? (2) Is there a significant difference in positive risk-taking scores between males and females? And lastly, (3) Is there a correlation between positive risk-taking and age?

Based on previous literature, we first hypothesise that there will be a relationship between the predictor variables sensitivity to reward and punishment, tolerance to ambiguity and peer influence, and the criterion variable positive risk-taking. In our second hypothesis, we predict that there is a significant difference in positive risk-taking scores between males and females. For our final hypothesis, we predict a correlation between positive risk-taking and age.

Method

Participants

A non-probability convenient sample of 153 non-identifiable individuals (41 men; 109 women; 3 non-binary; 0 other) (described in Table 1) with ages ranging from 18 to 56 ($M = 26.78$, $SD = 7.4$) (described in Table 2) were collected. In line with ethical considerations, participants who were under 18 years of age and did not have the capacity to provide informed consent were excluded. All participants provided informed consent by ticking the consent box on the consent form (see Appendix C).

According to G*Power Statistical Power Analyses software version 3.1.9.7 (Faul et al., 2009), for a linear multiple regression test to obtain a medium Cohen's f -squared effect size of 0.15 and power of 0.8, a sample size of 77 would be required. For a difference between two independent means (two groups) to obtain a medium 0.5 Cohen's d effect size and 0.8 power analysis, a sample size of 128 would be required. For a correlation analysis to obtain a power of 0.8, a sample size of 82 would be required. No incentives were used in recruiting participants. Based on these analyses, I aimed to collect a minimum of 128 participants.

1 participant was excluded from the analyses as they were under 18, hence not eligible for this study's participation. Furthermore, one of my hypothesis restricted to analysing participants who identified as either man or woman, therefore 3 non-binary participants were excluded for that hypothesis, but their data was included for the rest of the hypothesis analyses.

Design

The present study used a quantitative approach with a cross-sectional research design, hence data was collected by research survey. A within-group design was used to investigate all three hypotheses. The strength of the association between positive risk-taking, sensitivity

to reward and punishment, tolerance for ambiguity, and peer influence was measured. Positive risk-taking was the dependent variable, while the independent variables were sensitivity to reward and punishment, tolerance for ambiguity, peer influence, age, and gender. The cross-sectional design allows us to observe positive risk-taking in its habitual form while analysing it in relation to sensitivity to reward and punishment, tolerance to ambiguity, and peer influence.

Materials

The demographic information, age and gender (see Appendix D) were collected in the Microsoft Forms survey. Gender was a categorical nominal variable (see Table 1) and was identified by participants selecting the option most relevant to themselves with options “man”, “woman”, “non-binary” and “other”. The continuous ratio variable age and nationality (see Table 2) was collected by participants inserting their own age and nationality in the space provided in the survey.

The first psychometric to be employed was the Positive Risk-Taking Scale (PRTS), which measures positive risk-taking (E). It consists of 14-items. Question items “Have you ever...” having the response options “(0) No” and “(1) Yes” and question items “... How many times have you engaged in this activity *during the last six months?*” scored on a 5-point Likert scale, with the following choices: “(1) Never”, “(2) Rarely”, “(3) Sometimes”, “(4) Often”, and “(5) Very Often” (Fryt, Szczygieł, & Duell, 2022). As the original scale was designed for adolescents (Duell and Steinberg, 2020), the scale was slightly modified 2 years later for adult participants (Fryt, Szczygieł, & Duell, 2022). For example, the item “Tried out for a team or auditioned for a play when you were not sure you would be picked” was modified to “Applied for a job, project or participated in a competition when you were not sure you would be selected”. The full list of modified items for adults is presented in Appendix F. The sum of points to all items is a frequency score of positive risk-taking

(PRTS). High scores on this scale indicates more frequent positive risk-taking and low scores on the scale indicates low frequency of positive risk-taking. The variety score was 0.71 (Fryt & Szczygiel, 2021), and Cronbach's α for reliability showed 0.83.

The second psychometric to be employed was the Sensitivity to Punishment and Sensitivity to Reward Questionnaire-20 Item Version (SPSRQ-20), which measures the behavioural inhibition and activation system in Gray's reinforcement sensitivity theory, which assumes individual variances in the sensitivity of basic brain systems that respond to punishing and reinforcing stimuli (see Appendix G). The scale consists of 20-items (e.g. "Are you easily discouraged in difficult situations?") with dichotomous "(1) Yes" or "(0) No" options instead of the original 48-items proposed by Torrubia, Avila, Moltó, and Caseras (2001). Half the items measured sensitivity to punishment, while the other half of items measured sensitivity to reward. These questions were in mixed order, hence, participants were unaware of measurements of each item. For reliability, Cronbach's α of the sensitivity to reward subscale showed 0.56, and alpha levels for the sensitivity to punishment subscale showed 0.78. Convergent and discriminant validity was evaluated and established with various other instruments measuring similar variables: Zuckerman-Kuhlman Personality Questionnaire (Zuckerman et al, 1993), the Impulsiveness, Venturesomeness and Empathy Inventory (Eysenck et al, 1985).

The third psychometric to be employed was the Tolerance for Ambiguity Scale (TAS), which is an improved measure of the tendency to see ambiguous circumstances favourably (see Appendix H). It consists of 12-items (e.g. "I can be comfortable with nearly all kinds of people.") scored on a 5-point Likert scale, with the following choices: "(1) Strongly Disagree", "(2) Disagree", "(3) Neither Agree nor Disagree", "(4) Agree" and "(5) Strongly Agree". Items 1, 4, 5, 9, 10, 11 and 12 are reverse coded (Herman et al., 2010). High scores indicate high tolerance for ambiguity, and low scores indicate a low tolerance for

ambiguity. The scale shows a good construct of validity (Lietz, 2023) and a Cronbach's Alpha of 0.62.

The fourth psychometric to be employed was the Positive Peers Questionnaire (PPQ), which measures the degree of positive peer influence each participant received from various sources such as a best friend, group of friends, and wider peers in their community, and young people in the popular culture and media (see Appendix I). It consists of 20-items measured across 4 subscales (e.g. Thinking about your best friend: "If I was drinking or taking drugs he/she would isolate me or stop being friends with me.") scored on a 5-point Likert scale, with the following choices: "(1) Not true", "(2) Mostly not true", "(3) Neither true or untrue", "(4) True" and "(5) Very true". Items consist of major themes such as peer selection, peer socialisation, and peer intervention processes. High scores on the scale indicate high degree of positive peer influence, and low scores indicate low degree of positive peer influence. The scale showed validation (Coyle et al, 2016) and Cronbach's α for subscales were .65, .73, .82 and .8, with the overall scale Cronbach's α was .88.

Procedure

First, this survey was piloted by two individuals as a newer version of the scale was used in order to determine the length of the survey, ensuring no issues were encountered. The average time to complete the survey was 11 minutes and no issues found. Data of the pilot individuals were excluded from the analysis. The participation sheet was then updated to include that the approximate length of time to complete the survey was 10 to 15 minutes.

Participation involved completing an anonymous online survey on Microsoft Forms, accessed through a QR code or link found on a graphic on social media platforms SurveyCircle, LinkedIn or WhatsApp (see Appendix A). Once participants click the survey link, they were brought to a separate browser and first saw the Participant Information Sheet which entails the nature and purpose of the study, the researcher, organisation, the supervisor

to which they may pose questions to prior or after the survey, the eligibility requirements, possible risks and benefits for taking part, as well as what would happen to participants data (Appendix B).

Before beginning the psychometrics section of the survey, participants were asked to read the information sheet and to provide consent by ticking the consent boxes (Appendix C). Participants were informed that their participation was voluntary, and if they chose to take part in the study, they could withdraw consent at any time without penalty. However, after the survey was submitted, it was not possible to withdraw participants information as all data was anonymous and unidentifiable. Once the consent form has been ticked, participants were able to click “Next” to access the survey.

Data was collected for demographic information of age and gender (see Appendix D), Positive Risk-Taking Scale (PRTS) items measuring positive risk-taking (see Appendix E), Sensitivity to Punishment and Sensitivity to Reward Questionnaire-20 Item Version (SPSRQ-20) measuring the sensitivity of basic brain systems that respond to punishing and reinforcing stimuli (see Appendix G), Tolerance for Ambiguity scale (TAS) to measure ambiguous circumstances favourably (see Appendix H), Positive Peers Questionnaire (PPQ) measuring the degree of positive peer influence each participant received from various sources such as a best friend, group of friends, and wider peers in their community, and young people in the popular culture and media (see Appendix I). There is no time limit on completion of the survey, so participants are free to take breaks as they please. At the end of the study, participants received a written Debriefing Form again detailing the nature of the study, thanking individuals for their participation and contact details of the research and supervisor (see Appendix J). Various helpline numbers were also provided in the event that some survey items causing psychological distress to participants. Participants were not rewarded for their participation and involvement of the study will be complete once the survey is submitted.

Ethical considerations

This research study was approved by the National College of Ireland's Ethics Committee and is in line with the Code of Professional Ethics of the Psychological Society of Ireland (2019) and the National College of Ireland Ethical Guidelines and Procedures for Research involving Human Participants (2023). The risks and benefits of partaking in the study were clearly outlined and there was no incentive to take part, and all participants provided informed consent. This was communicated to all participants by explicitly stating this on the information sheet and debriefing form. Though no obvious harm was expected to be encountered from this study, the debriefing form included helpline numbers in the event that any participant felt psychologically triggered by the material presented (see Appendices J).

Data Analysis

Descriptive statistics were run for the dependent variable positive risk-taking and independent variables sensitivity to reward and punishment, tolerance for ambiguity, and peer influence. After that, categorical descriptive statistics were run for the independent variables, gender and age groups. Both descriptive statistics were demonstrated on descriptive tables. A standard multiple regression was used to investigate the extent to which the criterion variable positive risk-taking, was predicted by the predictor variables namely sensitivity to reward and punishment, tolerance for ambiguity, and peer influence. An independent samples t-test was employed to compare the positive risk-taking difference between men and women. A Spearman's rank-order correlation analysis was conducted to explore the correlation between positive risk-taking and age. IBM SPSS Statistics version 28.0.1.1 (15) or newer was utilised to perform all statistical analyses at a significant level of less than 0.05 and 95% confidence interval.

Results

Descriptive Statistics

Descriptive Statistics for the study variables are provided in Table 1 and 2.

Table 1

Descriptive Frequencies of Gender and Nationality

Variable	Frequency	Valid %
Gender		
Man	41	26.8
Woman	109	71.2
Non-binary	3	2
Other	0	0
Nationality		
British	24	15.7
Indian	19	12.4
American	13	8.5
Irish	13	8.5
Malaysian	9	5.9
Pakistani	7	4.6
Chinese	6	3.9
Canadian	6	3.9
Greek	5	3.2
Italian	4	2.6
Taiwan	4	2.6
German	3	1.9
Turkish	3	1.9

South African	3	1.9
Filipino	2	1.3
Polish	2	1.3
Australian	2	1.3
Egyptian	2	1.3
Swiss	2	1.3
Zimbabwean	2	1.3
Portuguese	2	1.3

Note: There was 1 participant for each of the following nationalities: Serbian, Croatian, Bulgarian, Spanish, Czech, Kenyan, Austrian, Moroccan, Nigerian, Hungarian, Ghanaian, Azerbaijani, Mexican, Singaporean, Belarusian, French, Ukrainian, Sri Lankan, Caucasian, prefer not to say.

Table 2

Descriptive Statistics for Age, Positive Risk-Taking Scale, Sensitivity to Punishment, Sensitivity to Reward, Tolerance for Ambiguity and Peers Influence

Variable	<i>M</i> [95% CI]	<i>SD</i>	Range
Age	26.78 [25.60, 27.95]	7.4	18 – 56
Positive Risk-Taking	45.51 [43.84, 47.18]	10.5	18 – 78
Sensitivity to Punishment	5.81 [5.36, 6.26]	2.8	0 – 10
Sensitivity to Reward	4.56 [4.22, 4.90]	2.1	0 – 9
Tolerance for Ambiguity	36.19 [35.3, 37.1]	5.6	19 – 48
Peers Influence			
Thinking about your			
Best Friend	16.91 [16.28, 17.54]	3.94	5 – 25

Thinking about Friends			
I Hang out with	15.76 [15.12, 16.41]	4.0	5 – 25
Thinking about Other			
Young People in my			
School or in my Area	13.07 [12.34, 13.79]	4.5	5 – 25
Thinking about Young			
People I see on			
TV/Films	14.02 [13.34, 14.70]	4.28	5 – 25

Inferential Statistics

Hypothesis 1

Multiple regression analysis was performed to investigate whether positive risk taking scores were predicted by seven variables: sensitivity to punishment, sensitivity to reward, tolerance for ambiguity, thinking about your best friend, thinking about my friends I hang out with, thinking about other young people in my school or in my area, and thinking about young people I see on TV/films. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. The correlations between the predictor variables and criterion variable are presented in Table 3. The correlations between the predictor variables were assessed and r values ranged from $<-.37$ to $.75$. Tests for multicollinearity also indicated that all Tolerance and VIF values were in an acceptable range.

Table 3*Inter-Correlations (Pearson's r) between Model Variables*

Variable	1.	2.	3.	4.	5.	6.	7.
1. Positive Risk-Taking	-						
2. Sensitivity to Punishment	-.28***	-					
3. Sensitivity to Reward	.18*	.11	-				
4. Tolerance for Ambiguity	.31***	-.37***	-.12	-			
5. Thinking about your Best Friend	-.05	.08	-.08	-.15*	-		
6. Thinking about my Friends I hang out with	.03	-.03	.01	-.13	.75***	-	
7. Thinking about other Young People in my School or in my Area	.002	-.07	.02	.002	.45***	.54***	-
8. Thinking about Young People I see on TV/Films	-.054	-.01	.08	-.23**	.32***	.33***	.42***

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Since no a priori hypotheses had been made to determine the order of entry of the variables, a direct method was used for the analysis. The eight predictors explained 19.2% of variance in positive risk taking scores ($F(7, 149) = 4.93, p < .001$). Three variables included in the model were found to uniquely predict positive risk-taking levels to a statistically significant degree. Tolerance for ambiguity was the strongest predictor in the model and had a positive relationship with daytime sleepiness ($\beta = .27, p < .001$). Sensitivity to punishment, thinking about your best friend, thinking about other young people in my school or in my area, and thinking about young people I see on TV/films were negative predictors of positive risk-taking scores (see Table 4 for full details).

Table 4

Standard Multiple Regression Model Predicting Positive Risk-Taking Scores

Variable	R^2	B	SE	β	t	P
Model	.19***					
Sensitivity to Punishment		-.78	.31	-.21	-2.54	.012
Sensitivity to Reward		1.15	.38	.23	3.04	.03
Tolerance for Ambiguity		.51	.16	.27	3.25	.001
Thinking about your Best Friend		-.09	.31	-.03	-.28	.782
Thinking about my Friends I hang out with		.31	.31	.12	1.00	.318
Thinking about other Young People in my School or in my Area		-.14	.22	-.06	-.65	.518
Thinking about Young People I see on TV/Films		-.04	.21	-.02	-.19	.850

Note: *** $p < .001$

Hypothesis 2

An independent samples t-test was conducted to compare levels of positive risk-taking between men and women. There was no significant difference in scores ($p = .846$), with men ($M = 45.15$, $SD = 11.43$) scoring lower than women ($M = 45.52$, $SD = 10.20$).

Hypothesis 3

The relationship between age and levels of positive risk taking was investigated using a Spearman's rank-order correlations. There was a small positive correlation between variables ($r = .36$, $n = 153$, $p < .437$). This indicates that the two variables shared .36% of variance in common. Results indicate that high levels of age are associated with high levels of positive risk taking.

Table 5

Spearman Rank-Order Correlations between Positive Risk Taking and Age

Variable	1.	2.
1. Positive Risk Taking	-	
2. Age	.63	-

Note: Table 5 results are for Spearman Correlation analysis.

Discussion

The current study aimed to investigate the extent to which positive risk-taking is predicted by sensitivity to reward and punishment, tolerance for ambiguity, and peer influences. It also aimed to explore the significant difference in positive risk-taking levels in men and women, and the association in positive risk-taking scores in age was analysed.

Through this research, three hypotheses were formulated to the aims of this study.

(Hypothesis 1) Results revealed that sensitivity to punishment, sensitivity to reward, and tolerance for ambiguity were significant predictors of positive risk-taking, with tolerance for ambiguity being the strongest predictor, and peer influences being a non-significant predictor of positive risk-taking. (Hypothesis 2) Results did not support the hypothesis that there is a significant difference in positive risk-taking scores between men and women. (Hypothesis 3) Finally, results revealed that there was a non-significant correlation between age and positive risk-taking.

Previous literature indicates that tolerance for ambiguity (Fryt & Szczygiel, 2021), sensitivity to punishments, and sensitivity to rewards are motivators of positive risk-taking (Cooper & Gomez, 2008; Fryt et al., 2024). This is consistent with the current study, as tolerance for ambiguity, sensitivity to punishment, and sensitivity to reward were significant predictors of positive risk-taking. Additionally, it was found that tolerance for ambiguity was the strongest predictor of positive risk-taking. Implications of the current research suggests emphasis in applying reward-based systems in classroom and educational settings such as “Class Dojo” which are available in application formats to educators online. It consists of rewarding points to individuals who behaves well while potentially deducting points from those engaging in negative behaviour, resulting in the educator providing a reward or prize to the individual with the highest points. Points may be earned from rules set by the educator, which teaches that following social norms is rewarding, or by exceptional behaviour which is

not outlined by the educator but will be recognised and given rewarded points. This ambiguity may lead to individuals engaging in positive risks in effort to achieve more points in competition with their classmates, and avoiding negative behaviours to avoid losing points. In this way, positive risk-taking can be employed in an educational setting to enhance growth and independence of individuals.

Recent research is investigating the impacts of peer influences on adaptive behaviours (Laursen & Veenstra, 2021). Telzer and colleagues (2021) indicated that not all adolescents are susceptible to the influences of peer groups. There are individuals who take positive risks for exploration, growth and seek rewards socially and in a socially accepted way, hence they take positive risks for exploration and growth (Fryt et al., 2021). Additionally, positive risk-taking was associated with higher friendship quality (Gao et al., 2025). Notably, this is in contrast with the current study's findings as peer influences was found to be a non-significant predictor of positive risk-taking. This non-significance could be due to friendship closeness moderating the influence of perceptions of peer risk behaviours (Mason et al., 2017).

However, not all friends have the same influential impact (Hiatt et al., 2017). Those who have a more positive perception of the friendship and better socialising abilities are hence more influential in both positive and negative risk-taking contexts (Hiatt et al., 2017). According to Duell and Steinberg (2019), families' values may internalise positive risks and have strong bonds to society. Past research has revealed that adolescents' content on social media frequently include risky health behaviours, such as high-risk sexual behaviours, substance use, and harmful behaviours, such as self-injury and disordered eating (Moreno et al., 2016). Consequently, engaging in this content influences an individual to perceive these negative risks as a norm and desirable (Litt & Stock, 2011). In this way, social media (Reid et al., 2016) has evoked issues in creating and validating norms of negative risk behaviours (Craig et al., 2020). This implies emphasis on parents and families in teaching socially accepted

values to their children as this could lead to individuals avoiding negative risks as they grow older. Additionally, further social media use policies are required in avoiding normalising negative behaviours to be associated with “cool” behaviour amongst peer groups.

Unfortunately, these negative behaviours are also currently driven heavily by artists and music videos portraying a “cool” perception with delinquent behaviours among peers. To combat this, campaigns should be led by celebrities and social influencers on avoiding risk behaviours such as substance use and intoxicated driving among individuals, in effort to shift the social norm to more positive behaviours.

Previous studies show that men are perceived as inclined to take more risks than women (Byrnes & Miller, 1999; Duell et al., 2018). Click or tap here to enter text. However, the current study reveals no association between gender and positive risk-taking. This in line with recent research by Joanna and colleagues (2022), which revealed positive risk-taking having a very small association between men and women. Research to account for this non-association in our findings could be that risk-taking behaviours are less impacted by an individual’s risk attitudes (Figner & Weber, 2011), but rather influenced by perceptions of risk, and benefits according to their gender culture (Weber, 2010). Researchers Figner and Weber (2011) observed that women perceive higher risks in financial decisions, while they perceive social decision making as a lower risk compared to males. This implies positive risk-taking should be applied in community based, educational, and workplace settings in effort to close the cultural gender differences gap in positive risk-taking amongst individuals. Educators should provide the same opportunities to girls and boys and allow both genders to participate in the same activities. Currently the secondary school education in Ireland has certain subjects associated for boys, such as woodwork and particular subjects for girls, such as Home Economics. Unfortunately, these subjects are not even available in schools of the opposite gender which is depriving individuals from learning to their fullest potential.

Furthermore, these gender cultures are then influencers of an individual's future job interests as they grow older. This shortcoming of the education system needs to change to promote positive risk-taking in both genders across domains.

A prior study by Fryt and colleagues (2024), found that positive risk-taking was greatest in middle adulthood. In contrast, the current study reveals that there is no association between age and positive risk-taking. This in line with recent research by Joanna and colleagues (2022), which revealed positive risk-taking having a very small association between men and women. This non-association between age and positive risk-taking may be due to risk preferences being variant across ages (Mata et al., 2011) and may decrease as we get older (Duell et al., 2016). As we age, there are developmental changes in risk-taking motivations and goals (Ayton et al., 2020). Furthermore, decision making literature reveals, that although people of all ages desire to acquire gains and avoid losses (Ebner et al., 2006), risk-taking prevalence and motivations may differ across the lifespan according to available opportunities, economic status, and education levels (Frey et al., 2021). Further implications include providing clinical interventions and opportunities of positive risk-taking to individuals with learning disabilities of all ages. This could be implemented by slowly and gradually introducing positive risks in accordance to the individual specific needs or goals. This will further aid in their developmental growth and exploration of the environment in a positive way.

Strengths and Limitations

There were several strengths to the current study. One of the major strengths of this study was that it considered peer influences of positive risk-taking in a variety of social contexts including when with close friends, in their community, at school, and when seeing celebrity peers on social media. This allowed to assess a wider perspective of social influences on individuals, which is an area which lacks research. An additional strength of the

current study is that there was a large international sample of individuals ranging in cultures collected through anonymous online surveys. In this way, results were more generalisable across cultures and ethnicities in relation with positive risk-taking. Another strength includes the adult age sample, as this is an area where there was a lack of literature on positive risk-taking, as most previous research on risk-taking investigated on adolescent samples.

However, the findings of this study must be seen in light of some limitations. There were at least three limitations concerning the results of the study. The first limitation concerned the significant imbalance between men and women among participants. This may have lead to gender bias and the results being skewed. Further research should emphasise equal number of gender participants. Additionally, further research should investigate positive risk-taking in non-binary and other genders as it is an area that lacks research. The second potential limitation is that data on participants profession, such as details on whether they are a student and their course of study, or particular job as if they work in fields such as business or trading that may influence their risk-taking behaviours should be recorded in future studies. This would provide a more granular insight to the research. The third potential limitation is due to the self-reported nature of the questionnaire, participants may judge themselves incorrectly in the hypothetical scenarios. It would be interesting for perceptions of behaviours in an experimental study which would generate new complimentary insights. Future research could focus on developing an experimental measure of positive risk-taking.

Implications

In addition to the implications already discussed, our study strongly suggests tolerance for ambiguity, sensitivity to punishment and reward as significant factors impacting an individuals positive risk-taking behaviours. Hence, implications of this study are that individuals should be provided with structured opportunities for positive risk-taking. This will allow individuals to take positive risks in situations that are ambiguous and sensitive to

punishment and reward, while also directly individuals towards developmentally adaptive risks, rather than harmful risks. This will further aid individuals in developing important skills including independence, acquisition skills, and goal-setting (Duell & Steinberg, 2020). In an academic setting, tolerance for ambiguity should be embedded as soft skills in the educational curriculum as it plays an important role in learners being more confident in their decisions, improve performance, and focus on advantageous results (Yu et al., 2022), which are also beneficial skills that can be applied in everyday situations. Perceiving ambiguous situations as interesting and challenging, increases tolerance, hence, opening more opportunities to positive risk-taking in the learning environment. This would be beneficial and in the best interest of those working in the education sector, the Department of Social Protection, and the general public, as negative risks such as substance use and dangerous driving are associated with hazards and unsafety. The implementation of these recommendations could decrease negative risk-taking behaviours and increase feelings of safety.

Conclusion

While past research exploring the impact of risk-taking and delinquent behaviours among adolescents is prominent, the literature has often not considered the impacts of positive risks in an adult sample, which is necessary to achieve goals in developmentally appropriate and socially acceptable manner. The current study investigates the impacts of age, gender, sensitivity to punishment and reward, tolerance for ambiguity, and peer influence on positive risk-taking. The results highlights that tolerance for ambiguity, sensitivity to punishment and reward are significantly associated with positive risk-taking behaviours in adults. Additionally, peer influences, age, and gender were not associated with positive risk-taking. Major strengths of the current study is that the sample consisted of a large international sample, and unlike previous studies, a variety of social contexts were

considered. A constraint of the current study includes that it was of cross-sectional survey design and didn't collect data on specific professions such as specific jobs or enrolled courses. Future research could focus on creating an experimental measure of positive risk-taking and analysing data on specific professions as this will give a more nuanced insight. Furthermore, future research could explore positive risk-taking in non-binary and other genders as it is an area that lacks research. Broader implications of this study include providing structured opportunities for positive risk-taking in academic environments as it would allow growth of soft skills that can be applied in both academic and real-world settings.

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Appendices

Appendix A: Survey Graphic

PARTICIPANTS NEEDED!

What Influences *Positive Risk-Taking*? 🔍

If you're...

- 18+ years old
- Any gender

You can partake in the study !

Participation Involves

- A 10-15 mins survey about influences of positive risk-taking.
- All response are anonymous and confidential.

ACCESS SURVEY!

QR Code: SCAN ME

Appendix B: Information Sheet

Sensitivity to Punishment and Reward, Tolerance to Ambiguity and Peer Influences on Positive Risk-Taking

Introduction

You are being invited to take part in a research study. Before deciding whether to take part, please take the time to read this document, which explains why the research is being done and what it would involve for you. If you have any questions about the information provided, please do not hesitate to contact me using the details at the end of this sheet.

What is this study about?

I am a third-year student in the BA in Psychology programme at National College of Ireland. As part of our degree, we must carry out an independent research project. For my project, I aim to investigate whether sensitivity to reward and punishment, tolerance to ambiguity and peer influence is associated with positive risk-taking.

This study will be supervised by Dr Michelle Kelly.

What will taking part in the study involve?

If you decide to take part in this research, you will be asked to complete this online questionnaire involving topics such as positive risk-taking, sensitivity to reward and punishment, tolerance to ambiguity and peer influence.

The questionnaire should take approximately 15 minutes to complete.

Who can take part?

Inclusion criteria for this study include:

1. Individuals over 18 years of age
2. All genders

Exclusion criteria include:

1. Individuals under 18 years of age
2. Individuals who do not understand the research and consent process

Do I have to take part?

Participation in this research is voluntary; you are not obligated to take part in the study, and a decision not to take part will have no consequences for you. If you do decide to take part, you can withdraw from participation at any time by leaving the questionnaire browser immediately.

Please note that once you have submitted your questionnaire, it will not be possible to

withdraw your data from the study, because the questionnaire is anonymous and individual responses cannot be identified.

What are the possible risks and benefits of taking part?

There are no direct benefits to you for taking part in this research. However, the information gathered will contribute to research that helps us to understand the extent to which positive risk-taking is predicted by sensitivity to reward and punishment, tolerance to ambiguity and peer influence.

There is a low risk that some of the questions contained within this survey to cause distress for some participants. If you experience this, you are free to discontinue participation and exit the questionnaire. Contact information for relevant support services are provided at the end of the questionnaire.

Will taking part be confidential and what will happen to my data?

The questionnaire is anonymous, so it is not possible to identify a participant based on their responses to the questionnaire. All data collected for the study will be treated in the strictest confidence.

Responses to the questionnaire will be stored securely in a password protected/encrypted file on the researcher's computer. Only the researcher and their supervisor will have access to the data. Data will be retained for 5 years in accordance with the NCI data retention policy.

However, in the unlikely event that the researcher or academic supervisor believes that there is a significant risk of harm or danger to the participant or another individual, or a law has been broken, they would then be required to share this information with the relevant authorities. In this very unlikely event, the researcher would discuss this with you first, but they may be required to breach confidentiality with or without your permission.

What will happen to the results of the study?

The results of this study will be presented in my final year project, which will be submitted to National College of Ireland. It is possible for data to be used in the researchers dissertation, presentations and disseminations.

Who should you contact for further information?

For further information you can contact myself, Sadia Jabeen Ali, at x22438582@student.ncirl.ie.

Alternatively, you can contact my supervisor, Dr Michelle Kelly, at michelle.kelly@ncirl.ie.

Appendix C: Consent Form

In agreeing to participate in this research I understand the following:

- The method proposed for this research project has been approved in principle by the Departmental Ethics Committee, which means that the Committee does not have concerns about the procedure itself as detailed by the student. It is, however, the above-named student's responsibility to adhere to ethical guidelines in their dealings with participants and the collection and handling of data.
- If I have any concerns about participation, I understand that I may refuse to participate or withdraw at any stage by exiting my browser without any consequences of any kind.
- I understand that once my participation has ended, I cannot withdraw my data as it will be fully anonymised.
- I have been informed as to the general nature of the study and agree voluntarily to participate.
- All data from the study will be treated confidentially. The data from all participants will be compiled, analysed, and submitted in a report to the Psychology Department in the School of Business.
- I understand that my data will be retained and managed in accordance with the NCI data retention policy, and that my anonymized data may be archived on an online data repository and may be used for secondary data analysis. No participants data will be identifiable at any point.
- I understand that I am free to contact the researcher or supervisor to seek further clarification and information.
- At the conclusion of my participation, any questions or concerns I have will be fully addressed.

☐ Please tick this box if you have read, and agree with all of the above information.

☐ Please tick this box to indicate that you are providing informed consent to participate in this study.

Appendix D: Demographic Questions

1. Age

2. Sex

- ☐ Man
- ☐ Woman
- ☐ Non-binary
- ☐ Other: _____

3. Nationality: _____

Appendix E: Positive Risk-Taking Scale

The scale consists of 14-items statements with the following question items:

- “Have you ever...” having the response options “(0) No” and “(1) Yes”.
- “... How many times have you engaged in this activity *during the last six months?*” scored on a 5-point Likert scale with the answer options “(1) Never”, “(2) Rarely”, “(3) Sometimes”, “(4) Often” and “(5) Very Often”.

Positive Risk-Taking Scale (PRTS) items:

1. Applied for a job, project or participated in a competition when you were not sure you would be selected.
2. Joined a new club or activity when you were not sure you would like it.
3. Told someone the truth, even if they did not want to hear it.
4. Tried a new food you thought you might not like.
5. Run for a leadership role at work or in some other organization.
6. Asked someone new on a date when you thought the person may say no.
7. Started learning something that you knew nothing about or that seemed challenging.
8. Tried a new hairstyle or outfit that you were not sure others would like.
9. Gone to a party or social event where you did not know very many people and thought you might not have anyone to talk with.
10. Told a secret or shared something personal about yourself to someone.
11. Stood up for what you believe is right, even though you thought someone might disagree with you.
12. Started a friendship with someone new when you were not sure how your others would react.
13. Tried a new sport or played a sport you are not good at where you might have embarrassed yourself.
14. Spent time with a new group of people when you were not sure you would fit in.

Appendix F: Modifications in Positive Risk-Taking Scale for Adults**Positive risk-taking**

- 1 Tried out for a team or auditioned for a play when you were not sure you would be picked / *Applied for a job, project or participated in a competition when you were not sure you would be selected**
- 2 Joined a new club or activity when you were not sure you would like it
- 3 Told someone the truth, even if they did not want to hear it
- 4 Tried a new food you thought you might not like
- 5 **Run for a leadership role in school / at work* or in some other organization**
- 6 Asked someone new on a date when you thought the person may say no
- 7 Taken a class in a subject / ***Started learning something that* you knew nothing about*** or that seemed challenging
- 8 Tried a new hairstyle or outfit that you were not sure others would like
- 9 Gone to a party or social event where you did not know very many people and thought you might not have anyone to talk with
- 10 Told a secret or shared something personal about yourself to someone
- 11 Stood up for what you believe is right, even though you thought someone might disagree with you
- 12 Started a friendship with someone new when you were not sure how your other friends / ***others* would react***
- 13 Tried a new sport or played a sport you are not good at where you might have embarrassed yourself
- 14 Spent time with a new group of people when you were not sure you would fit in

Appendix G: Sensitivity to Punishment and Sensitivity to Reward Questionnaire

The scale consists of 20-items with dichotomous “(1) Yes” or “(0) No” options.

Sensitivity to Reward 10 = 4, 10, 12, 14, 18, 24, 38, 44, 46, 48 (yes).

Sensitivity to Punishment 10 = 5, 9, 15, 19, 21, 31, 35, 37, 39, 47 (yes).

Note: This is a 20-item version of the original 48-item Sensitivity to Punishment and Sensitivity to Reward Questionnaire (SPSRQ) proposed by Torrubia, Avila, Moltó, and Caseras (2001).

Sensitivity to Punishment and Sensitivity to Reward Questionnaire-20 Item Version (SPSRQ-20):

4. Are you frequently encouraged to act by the possibility of being valued in your work, in your studies, with your friends or with your family?
5. Are you often afraid of new or unexpected situations?
9. Do you often renounce your rights when you know you can avoid a quarrel with a person or an organisation?
10. Do you often do things to be praised?
12. Do you like being the centre of attention at a party or a social meeting?
14. Do you spend a lot of your time on obtaining a good image?
15. Are you easily discouraged in difficult situations?
18. When you are in a group, do you try to make your opinions the most intelligent or the funniest?
19. Whenever possible, do you avoid demonstrating your skills for fear of being embarrassed?
21. When you are with a group, do you have difficulties selecting a good topic to talk about?

24. Does the possibility of social advancement move you to action, even if this involves not playing fair?
31. Are you often worried by things that you said or did?
35. Do you generally try to avoid speaking in public?
37. Do you, on a regular basis, think that you could do more things if it was not for your insecurity or fear?
38. Do you sometimes do things for quick gains?
39. Comparing yourself to people you know, are you afraid of many things?
44. Do you like to put competitive ingredients in all your activities?
46. Would you like to be a socially powerful person?
47. Do you often refrain from doing something because of your fear of being embarrassed?
48. Do you like displaying your physical abilities even though this may involve danger?

Appendix H: Tolerance for Ambiguity Scale

Items are scored on a 5-point Likert scale, with the following choices: “(1) Strongly Disagree”, “(2) Disagree”, “(3) Neither Agree nor Disagree”, “(4) Agree” and “(5) Strongly Agree”.

Tolerance for Ambiguity Scale (TAS) items:

1. I avoid settings where people don't share my values. [Reverse Coded]
2. I can enjoy being with people whose values are very different from mine.
3. I would like to live in a foreign country for a while.
4. I like to surround myself with things that are familiar to me. [Reverse Coded]
5. The sooner we all acquire similar values and ideals the better. [Reverse Coded]
6. I can be comfortable with nearly all kinds of people.
7. If given a choice, I will usually visit a foreign country rather than vacation at home.
8. A good teacher is one who makes you wonder about your way of looking at things.
9. A good job is one where what is to be done and how it is to be done are always clear.
[Reverse Coded]
10. A person who leads an even, regular life in which few surprises or unexpected happenings arise really has a lot to be grateful for. [Reverse Coded]
11. What we are used to is always preferable to what is unfamiliar. [Reverse Coded]
12. I like parties where I know most of the people more than ones where all or most of the people are complete strangers. [Reverse Coded]

Appendix I: Positive Peers Questionnaire

Items are scored on a 5-point Likert scale, with the following choices: “(1) Not True”, “(2) Mostly Not True”, “(3) Neither True or Untrue”, “(4) True” and “(5) Very True”.

Positive Peers Questionnaire (PPQ) items:

Thinking about your best friend:

1. If I was drinking or taking drugs he/she would isolate me or stop being friends with me.
2. If I was drinking or taking drugs my best friend would try to help me and give me advice.
3. I choose my best friends because of the positive things they do or say.
4. My best friend would stick up for me if someone offered me drugs.
5. If I started drinking or taking drugs, my best friend would try to forcefully stop me.

Thinking about my friends who I hang out with:

6. If I was drinking or taking drugs they would isolate me or stop being friends with me.
7. If I was drinking or taking drugs they would try to help me and give me advice.
8. I choose them because of the positive things they do or say.
9. They would stick up for me if someone offered me drugs.
10. If I started drinking or taking drugs my mates would try to forcefully stop me.

Thinking about other young people in my school or in my area:

11. If I was drinking or taking drugs other young people in my area would isolate me or stop being friends with me.
12. If I was drinking or taking drugs other young people would try to help me and give me advice.

13. I would like to be friends with some young people in my area because of the positive things they do or say.

14. Young people in my area would stick up for me if someone offered me drugs.

15. If I started drinking or taking drugs young people in my area would try to forcefully stop me.

Thinking about young people I see on TV/films:

16. I think the people on TV/films I admire would isolate their friends if these friends were drinking or taking drugs.

17. If I was drinking or taking drugs I would think of what young people on TV/films might advise me.

18. I would like to be friends with some young people on TV/film because of the positive things they do or say.

19. The positive things they do or say would support me in staying away from drinking and drug-taking.

20. If I started drinking or taking drugs I would think about what these people might do if they were friends of mine.

Appendix J: Debrief Sheet

Thank you for participating in this study.

The purpose of this study is to analyse the extent to which positive risk-taking is predicted by sensitivity to reward and punishment, tolerance to ambiguity and peer influence, which will be determined using the data collected through statistical analyses.

As previously assured, your information is not linked to your responses, and no identifiable information has been collected. The data collected will be retained for 5 years in accordance with the NCI data retention policy.

If you have any questions or concerns about this study, please feel free to contact the researcher, Sadia Jabeen Ali (x22438582@student.ncirl.ie) or the project supervisor, Dr Michelle Kelly (michelle.kelly@ncirl.ie).

If any participant feels distressed either from participation in the current study or otherwise, please see the following available services:

- Aware - Mental health and mood support
Tel: [1800 804 848](tel:1800804848)
www.aware.ie
- Grow - Mental Health support and Recovery Organisation.
Tel: [0818 474474](tel:0818474474)
Email: info@grow.ie
www.grow.ie
- Samaritans - If you are struggling to cope:
116 123 or text: [087 260 9090](tel:0872609090)
- Text Support - 24 Hour free text support:
50808
- Turn2me - Self-help, peer support and professional support through an online platform for those who are experiencing poor mental health.
www.turn2me.ie

Thank you once again for your participation!

Appendix K: National College of Ireland Ethics Approval

National College of Ireland
Mayor Street, IFSC, Dublin 1, Ireland
Coláiste Náisiúnta na hÉireann
Sráid an tHídeara, IFSC
Baile Átha Cliath 1, Éire

Tel: +353 1 449 8500
Fax: +353 1 497 2200
email: info@ncirl.ie
Website: www.ncirl.ie

Date: 26th November 2024

Ref: Ethics Approval Number: 2611202422438582

Proposal Title: *Sensitivity to Punishment and Reward, Tolerance for Ambiguity and Peer Influences on Positive Risk-Taking.*

Applicant: Sadia Jabeen Ali

Dear Sadia,

Thank you for your application to the NCI Psychology Ethics Filter Committee, and for responding to clarification requests related to the application. I am pleased to inform you that the ethics committee has approved your application for your research project. Ethical approval will remain in place until the completion of your dissertation in part fulfilment of your BA Honours Degree in Psychology at NCI.

Please note that:

- Students are responsible for ensuring that their research is carried out in accordance with the information provided in their application.
- Students must abide by PSI ethics guidelines in completing their research.
- All procedures and materials should be approved by the supervisor prior to recruitment.
- Should substantial modifications to the research protocol be required at a later stage, a further amendment submission should be made.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert Fox".

Dr Robert Fox
Chairperson, Psychology Ethics Filter Committee

Ethics Committee members: *Dr Robert Fox (representative on the NCI Research Ethics Subcommittee), Dr Michelle Kelly, Dr Amanda Kracen, Dr Conor Nolan, Dr Lynn Farrell, Dr Fearghal O'Brien, Dr David Mothersill, Dr Michele Kehoe, Dr Barry Coughlan, Dr Conor Thornberry, Dr Brendan Cullen, Cassandra Murphy, Eden Bryan.*