

ISSN: 2584-0142

PSYCHOPEDIA
JOURNALSInternational Journal of
Interdisciplinary Approaches
in Psychology (IJIAP)

Gender Differences in the Impact of Impulse Control on Risk-Taking Behaviour: A Comparative Study

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Abstract: This research investigates the relationship between impulse control and risk-taking behaviour, specifically examining how this relationship differs between genders. Impulse control, the ability to regulate urges and delay gratification, is hypothesized to be a significant predictor of risk-taking tendencies. The study aimed to explore the potential moderating role of gender in this relationship. Utilizing quantitative methods, data was collected through standardized questionnaires measuring impulse control and risk-taking propensity. The findings shed light on whether the inhibitory effect of impulse control on risk-taking varies across genders, potentially uncovering nuanced mechanisms underlying risky decision-making. The results contributed to a more comprehensive understanding of individual differences in risk-taking and inform targeted interventions aimed at promoting responsible decision-making across different demographic groups. Ultimately, the research seeks to illuminate the complex interplay between impulse control, gender, and risk-taking behaviour, offering valuable insights for both theoretical frameworks and practical applications.

Keywords: *Impulse Control, Risk-Taking Behaviour, Gender Differences, Impulsivity, Sensation Seeking, Decision Making.*

1. Introduction

Risk-taking is an inherent aspect of human behaviour, encompassing activities ranging from financial investments to health-related choices. While some level of risk-taking is often necessary for personal growth and societal progress, excessive or poorly considered risk-taking can lead to

detrimental outcomes. Understanding the psychological mechanisms underlying risk-taking is thus crucial for developing effective strategies to promote responsible decision-making.

One key factor implicated in risk-taking is impulse control, defined “as the ability to regulate one's urges, delay immediate gratification, and thoughtfully consider the consequences of one's actions” (e.g., Logan, Schachar, & Tannock, 1997). Individuals with higher levels of impulse control are generally better equipped to resist the allure of immediate rewards associated with risky behaviours and are more likely to engage in deliberate, reasoned decision-making processes. Conversely, deficits in impulse control have been consistently associated with increased risk-taking across various domains, including substance abuse, gambling, and reckless driving (Dawe, Gullo, & Loxton, 2004).

However, the relationship between impulse control and risk-taking is unlikely to be straightforward and may be influenced by various individual and contextual factors. One potentially important moderating variable is gender. Existing research suggests that males and females often exhibit different patterns of risk-taking behaviour, with males generally reporting higher levels of risk-taking propensity across a range of domains (Byrnes, Miller, & Schafer, 1999). These gender differences may be attributable, at least in part, to differences in underlying psychological mechanisms, including impulse control. Furthermore, societal expectations and gender roles may also play a role in shaping both impulse control and risk-taking behaviour.

Therefore, the present research aims to investigate the potential moderating role of gender in the relationship between impulse control and risk-taking behaviour. Specifically, this study will examine whether the inhibitory effect of impulse control on risk-taking differs between males and females. By exploring this potential interaction, we can gain a better understanding of the complex interplay between these variables and identify potential targets for interventions aimed at promoting responsible decision-making across different demographic groups. Examining this relationship can help in addressing and providing a clearer understanding of the gender-based differences in impulse control and risk-taking behaviour.

The rationale for this study stems from the need for a more comprehensive understanding of the factors that contribute to individual differences in risk-taking behaviour. While previous research has established a link between impulse control and risk-taking, the potential moderating role of gender remains relatively unexplored. This study aims to fill this gap in the literature by providing empirical evidence on whether the relationship between impulse control and risk-taking behaviour varies across genders. Moreover, by identifying potential gender differences in the underlying mechanisms of risk-taking, this research can inform the development of more tailored and effective interventions to promote responsible decision-making.

The significance of this study lies in its potential to advance both theoretical understanding and practical applications in the field of risk-taking research. From a theoretical perspective, this research can contribute to a more nuanced understanding of the complex interplay between impulse control, gender, and risk-taking behaviour. By exploring the potential moderating role of gender, this study can shed light on the underlying mechanisms that contribute to individual differences in risk-taking. From a practical perspective, this research can inform the development of more tailored and effective interventions to promote responsible decision-making across different demographic groups. By identifying potential gender differences in the underlying mechanisms of risk-taking, interventions can be designed to target specific needs and challenges faced by males and females in different contexts. By providing a comprehensive understanding of the factors that contribute to individual differences in risk-taking behaviour, this research can contribute to the development of more effective strategies to promote responsible decision-making and mitigate the negative consequences of excessive or poorly considered risk-taking.

2. Review of Literature

Recent research has increasingly highlighted the role of gender in moderating the relationship between impulse control and risk-taking behaviour. Maxwell et al. (2023) conducted a systematic review of 45 neuroimaging and behavioural studies to examine gender differences in the neurobiological mechanisms of impulsivity and risk-taking, particularly in the context of addiction. Their findings revealed that males typically show heightened impulsivity and increased activation in dopamine-related brain regions like the prefrontal cortex and striatum, which are associated with reward-seeking behaviour. In contrast, females exhibited greater activation in the amygdala and anterior cingulate cortex, indicating stronger sensitivity to negative consequences. These neurobiological distinctions were influenced by sex hormones, with testosterone promoting impulsivity and risk-taking in males, and estrogen contributing to better emotional regulation in females. These findings underscore the biological underpinnings of gender differences in impulse control and support the need for gender-specific strategies in behavioural intervention.

Supporting this biological perspective, Jones et al. (2023) investigated how adverse childhood experiences (ACEs) affect self-control and delinquency across genders. Using data from 1,200 adolescents in the United States, the study found that males exposed to high levels of ACEs exhibited significantly lower self-control, which in turn led to greater involvement in delinquent behaviours such as theft and vandalism. Females, although equally exposed to

adversity, demonstrated stronger impulse control and lower delinquency rates. This disparity was attributed to gender-specific socialization patterns, where females are more likely to internalize stress, fostering self-regulation, while males tend to externalize, increasing impulsive behaviour. These findings point to the importance of incorporating gender-sensitive components in interventions aimed at mitigating the long-term effects of childhood trauma on behaviour.

Zhang et al. (2022) explored the impact of behavioural activation/inhibition systems and self-control on internet addiction among Chinese college students, further emphasizing gender differences in digital risk-taking. The study found that males exhibited stronger behavioural activation (BAS), higher impulsivity, and lower self-control, all of which predicted higher levels of internet addiction. Conversely, females showed stronger behavioural inhibition (BIS) and greater self-control, resulting in lower risk of addiction. A key mediator in this process was intolerance of uncertainty, which was more pronounced in males, leading to impulsive digital behaviour. This study reinforces the relevance of impulse control in moderating risk-taking and highlights gender as a significant variable in the digital behavioural domain.

Tian et al. (2022) provided further evidence of gendered impulse control by focusing on male adolescents and the contextual influence of peer presence. In an experimental setting using the Stoplight Task, they observed that adolescent boys with low self-control engaged in significantly riskier behaviour when observed by same-sex peers, driven by social reward-seeking and reduced inhibitory control. When observed by opposite-sex adults, however, risk-taking declined, suggesting that the social context moderates the expression of impulsivity. High self-control males demonstrated consistent behavioural restraint across all conditions. Although the study focused solely on males, it implicitly underscores broader gender differences in how social context interacts with impulse control and risk-taking tendencies.

Adding a developmental perspective, Chapple et al. (2021) analysed longitudinal data from 800 American youth to examine how ACEs affect self-control and delinquency over time. They found that males with higher ACEs displayed reduced self-control and a higher propensity for risk-related behaviours, such as substance use and vandalism, while females maintained better self-regulation and engaged less frequently in delinquent acts. The findings suggested that males are more prone to sensation-seeking and externalizing behaviours due to diminished impulse control, whereas females benefit from heightened sensitivity to punishment, which serves as a behavioural deterrent. This study reinforces the need to develop gender-specific frameworks in addressing early behavioural interventions, especially for adolescents exposed to trauma.

2.1 Research Objectives

- a) To investigate the relationship between impulse control and risk-taking behaviour.

- b) To examine gender differences in impulse control and risk-taking behaviour.
- c) To determine whether gender moderates the relationship between impulse control and risk-taking behaviour.

2.2 Hypotheses

1. **H₀₁:** There is no significant difference between males and females in risk-taking behaviour.
2. **H₀₂:** There is no significant relationship between impulse control and risk-taking behaviour.
3. **H₀₃:** There is no significant difference in UPPS-P impulsivity scores between males and females.
4. **H₀₄:** There is no significant difference in DOSPRT risk-taking scores between males and females.
5. **H₀₅:** The correlation between impulsivity (UPPS-P) and risk-taking (DOSPRT) does not differ between males and females.
6. **H₀₆:** The effect of low impulse control on risk-taking is not significantly stronger males than in females.

3. Methodology

The methodology employed in the study, including the research design, participants, measures, and data analysis procedures is as discussed as below.

3.1 Research Design

This study employed a quantitative, cross-sectional design to examine the relationship between impulse control, risk-taking behaviour, among genders. A correlational approach was used to assess the strength and direction of the association between impulse control and risk-taking behaviour.

3.2 Participants

Sample Size: A sample of 294 participants (139 males and 155 females) was recruited.

Recruitment: Participants were recruited through online platforms (e.g., social media, Job Profile Sites) and offline data was collected by physically reaching out to participants to fill the forms.

Inclusion Criteria: Participants must be between the ages of 18 and 30 years old. This age range was chosen to focus on emerging adults, a developmental stage characterized by significant changes in decision-making, impulse control, and risk-taking behaviour, which are

central to the objectives of this study. Participants will need to fluently understand English, and provide consent to participate in the study.

Exclusion Criteria: Individuals with a history of neurological disorders, severe mental illness, or current substance abuse problems will be excluded from the study.

3.3 Sampling Technique

A convenience sampling technique was used to recruit participants from the university campus. This method involved selecting participants who are readily available and willing to participate in the study. While convenience sampling may limit the generalizability of the findings, it is a practical and cost-effective approach for collecting data in a timely manner.

3.4 Measures

Demographic Questionnaire: Participants will complete a brief demographic questionnaire to collect information on their age, gender, ethnicity, and academic major.

UPPS-P Impulsive Behaviour Scale: The UPPS-P (Lynam, Smith, Whiteside, & Cyders, 2006), a widely used self-report questionnaire that evaluates five distinct facets of impulsivity: Negative Urgency, Lack of Premeditation, Lack of Perseverance, Sensation Seeking, and Positive Urgency. The scale consists of 59 items rated on a [Likert-type scale, e.g., 1 (strongly disagree) to 4 (strongly agree)], with higher scores indicating greater levels of impulsivity. The UPPS-P has demonstrated strong **psychometric properties**, including good internal consistency and construct validity across diverse populations.

Domain-Specific Risk-Taking Scale (DOSPERT): The DOSPERT (Weber et al., 2002) is a self-report questionnaire that assesses risk-taking propensity across five domains: ethical, financial, health/safety, recreational, and social. Participants rate the perceived risks and benefits of engaging in various activities within each domain on a 7-point Likert scale. The DOSPERT has been shown to have good construct validity and test-retest reliability.

3.5 Procedure

Participants were recruited through online either online form link invitations or physical copies provided to them. Those who express interest in participating will be provided with detailed information about the study and asked to provide informed consent. Upon providing consent, participants will complete a form consisting of demographic questions, UPPS-P and DOSPERT online via a secure survey platform. Participants will be informed that their responses will be kept confidential and used for research purposes only.

Informed Consent: Participants will be provided with a detailed explanation of the study's purpose, procedures, risks, and benefits. They will be required to sign an informed consent form before participating in the study.

Online Survey: Participants will complete the demographic questionnaire, UPPS-P, and DOSPERT online using a secure platform (e.g., Google Forms).

Offline Survey: Participants will complete the demographic questionnaire, UPPS-P, and DOSPERT through the forms distributed to them physically.

Data Collection Timeframe: Data collection will occur over a period of four months.

3.6 Data Analysis

Descriptive statistics, including means, standard deviations, and frequencies, will be calculated to summarize the characteristics of the sample and provide an overview of the data distribution. To examine the relationships between the key variables, Pearson correlation coefficients will be computed, specifically to assess the association between impulse control and risk-taking behaviour. Additionally, independent samples t-tests will be conducted to investigate gender differences in both impulse control and risk-taking, allowing for comparisons between male and female participants on these psychological constructs.

4. Results

The findings of the data analysis, including descriptive statistics, correlation analyses and t-tests.

Descriptive Statistics

Table 1: Represents the descriptive statistics for impulse control and risk-taking behaviour.

Variable	Total No.	Minimum	Maximum	Mean	SD
Impulse Control	294	82	200	148.41	19.289
Risk-Taking	294	30	174	135.50	31.848

Table 1 presents the descriptive statistics for impulse control and risk-taking behaviour among a total of 294 participants. The mean score for impulse control, measured using the UPPS-P scale, was 148.41 with a standard deviation of 19.29, suggesting a moderate level of variability in impulsivity across participants. Scores ranged from 82 to 200, indicating that while some individuals demonstrated low impulse control, others reported considerably higher levels. In contrast, the average score for risk-taking behaviour was 135.50 with a larger standard deviation of 31.85, pointing to greater variability in participants' propensity for risk-taking. The risk-taking scores ranged from 30 to 174, demonstrating a wide spectrum of behavioural tendencies in decision-making under risk.

Table 2: Represents the descriptive statistics for impulse control and risk-taking behaviour among males and females.

Variable	Gender	Total No.	Mean	SD
Impulse Control	Male	139	150.19	16.381
	Female	155	146.81	21.495
Risk-Taking	Male	139	139.43	29.106
	Female	155	131.97	33.826

Table 2 presents gender-specific descriptive statistics for impulse control and risk-taking behaviour. Males (N = 139) reported a slightly higher mean score (M = 150.19, SD = 16.38) on impulse control compared to females (N = 155, M = 146.81, SD = 21.50), indicating that men in the sample exhibited marginally lesser self-regulation. In terms of risk-taking behaviour, males again scored higher (M = 139.43, SD = 29.11) than females (M = 131.97, SD = 33.83), consistent with existing literature that suggests men are generally more inclined to engage in risky behaviours. These findings indicate that both impulse control and risk-taking tendencies differ by gender, with males showing higher average scores in both domains. The standard deviations further suggest that females exhibited more variability in both traits, especially in risk-taking, which may reflect a broader range of behavioural responses among women in the sample. These gender-based insights lay the groundwork for deeper inferential analysis examining the role of impulse control in moderating risk-taking behaviours across genders.

Correlation Analysis

Table 3: Pearson correlation coefficients were computed to examine the relationship between impulse control and risk-taking behaviour.

Variable	Risk-Taking (DOSPRT)
Impulse Control (UPPS-P)	
Pearson Correlation	.706**
Sig. (2-Tailed)	.000
N	294

** Correlation is significant at the 0.01 level (2-tailed).

Table 3 presents the relationship between impulse control (measured by the UPPS-P scale) and risk-taking behaviour (measured by the DOSPERT scale) across the entire sample (N = 294). A significant positive correlation was found between the two variables, ($r = .706$, $p < .001$), indicating a strong association between higher impulsivity and increased risk-taking behaviour. This result suggests that individuals with lower impulse control tend to engage in

more risk-taking activities. These findings support the broader hypothesis that impulse control plays a significant role in influencing risk-taking behaviour, and may manifest differently between male and female participants.

Table 4: *Pearson correlation coefficients were computed to examine the relationship between impulse control and risk-taking behaviour between male and female*

Variable			Impulse Control UPPS-P	Risk-Taking (DOSPERT)
Female	UPPS	Pearson Correlation	1	.777**
		Sig. (2-Tailed)		.000
		N	155	155
	DOSPERT	Pearson Correlation	.777**	1
		Sig. (2-Tailed)	.000	
Male	UPPS	N	155	155
		Pearson Correlation	1	.582
		Sig. (2-Tailed)		.000
	DOSPERT	N	139	139
		Pearson Correlation	.582	1
		Sig. (2-Tailed)	.000	
		N	139	139

The correlation analysis separated by gender reveals notable differences in the strength of the relationship between impulse control (UPPS-P) and risk-taking behavior (DOSPERT). Among female participants ($N = 155$), a strong positive correlation was observed between impulsivity and risk-taking, ($r = .777$, $p < .001$), indicating that lower impulse control is closely associated with higher engagement in risk-taking behaviors. In contrast, male participants ($N = 139$) demonstrated a moderate positive correlation, ($r = .582$, $p < .001$), between the same variables. Although both correlations are statistically significant at the 0.01 level, the stronger correlation in females suggests that impulsivity may be a more salient predictor of risk-taking behaviour for women than for men in this sample.

Independent Samples t-tests

Table 5: *Independent samples t-tests were conducted to examine gender differences in impulse control and risk-taking behaviour.*

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-Tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper

UPPS-P	10.040	.002	1.504	292	.134	3.381	2.248	-1.044	7.807
			1.526	284.772	.128	3.381	2.216	-.981	7.743
DOSPRT	9.579	.002	2.017	292	.045	7.464	3.701	.180	14.748
			2.033	291.515	.043	7.464	3.671	.239	14.689

For the UPPS impulse control scores, the t-test result ($t = 1.526$, $df = 284.772$, $p = .128$) indicates that there was no statistically significant difference in impulse control between males and females. The mean difference was 3.381, suggesting that males had slightly higher UPPS scores than females, but this difference was not significant, as the p-value exceeded the conventional alpha level of .05. The 95% confidence interval for the mean difference ranged from -0.981 to 7.743, further confirming the lack of a reliable gender difference in impulse control, since the interval includes zero.

However, for the DOSPERT risk-taking scores, the t-test yielded a statistically significant result ($t = 2.033$, $df = 291.515$, $p = .043$), suggesting that males and females significantly differed in their reported risk-taking behaviour. The mean difference was 7.464, indicating that males exhibited higher risk-taking tendencies compared to females. This is supported by the 95% confidence interval for the mean difference, which ranged from 0.239 to 14.689, a range that does not include zero, thus confirming the significance of the result.

5. Discussion

The present study sought to investigate the relationship between impulse control and risk-taking behaviour, examining the moderating role of gender. The findings provide support for the hypotheses and offer insights into the complex interplay between these variables as measured by the UPPS-P Impulsive Behavior Scale (Lynam, Smith, Whiteside, & Cyders, 2006), and DOSPERT scale (Weafer & de Wit, 2014).

The results confirmed a strong, positive correlation between impulsivity and risk-taking, $r(292) = .706$, $p < .001$, indicating that participants with poorer impulse control engaged in more risk-taking behaviour, a finding consistent with Dawe et al. (2004).

When broken down by gender, males ($M = 139.43$, $SD = 29.11$) reported significantly higher overall risk-taking than females ($M = 131.97$, $SD = 33.83$), $t(291.52) = 2.033$, $p = .043$. This finding is consistent with a large body of literature documenting gender differences in risk-taking propensity (Byrnes, Miller, & Schafer, 1999). No gender difference emerged for impulsivity: males ($M = 150.19$, $SD = 16.38$) and females ($M = 146.81$, $SD = 21.50$) did not differ significantly on UPPS-P scores, $t(284.77) = 1.526$, $p = .128$.

Importantly, the strength of the impulsivity–risk-taking link itself varied by gender. Among females, the correlation was $r(155) = .777$, $p < .001$, whereas among males it was $r(139) = .582$, $p < .001$. This pattern of impulse control exerting a stronger inhibitory effect on risk-taking in women mirrors findings from Cross, Copping, and Campbell's (2011) meta-analysis and suggests that gender moderates how self-regulation influences risky decisions.

5.1 Limitations and Suggestions for Future Research

This study has several limitations that should be acknowledged. First, the cross-sectional design limits causal inferences. Future research should employ longitudinal designs to examine the temporal relationship between impulse control and risk-taking behaviour. Second, the sample was limited to a certain age group, which may limit the generalizability of the findings. Future studies should include more diverse samples to enhance the external validity of the results. Third, the study relied on self-report measures, which may be subject to biases such as social desirability. Future research should incorporate behavioural measures of impulse control and risk-taking to complement self-report data.

Future research could also explore the potential mediating mechanisms that explain the moderating effect of gender on the relationship between impulse control and risk-taking behaviour. For example, future studies could examine the role of cognitive processes, such as risk perception and decision-making biases, in mediating this relationship. Additionally, future research could investigate the influence of social and cultural factors on gender differences in impulse control and risk-taking behaviour.

6. Conclusion

In conclusion, this study provides valuable insights into the relationship between impulse control, risk-taking behaviour, and gender. The findings confirm a positive correlation between impulse control and risk-taking behaviour. Specifically, the inhibitory effect of impulse control on risk-taking was found to be slightly stronger for males compared to females. These results highlight the importance of considering individual differences in the underlying mechanisms of risk-taking and inform the development of more tailored and effective interventions to promote responsible decision-making across different demographic groups.

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