

# **The Interaction Effect of Personality Traits and Gender Differences on Risky Behaviours among First-Year University Students in South Africa**

*Journal of Asian  
Social Science Research*  
2022, Vol. 4, No. 2: 105-122  
<https://cassr.net/jasr/>  
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## **Abstract**

This article investigates the effect of personality traits and gender differences on risky behaviours among first-year students of a South African university. A sample of three hundred and twelve (312) first-year students comprising 59.6 per cent females was selected as participants. Data were collected with a questionnaire to measure risky behaviours, personality traits, and demographic information. Collected data were subjected to statistical analysis using the statistical package for social sciences v23. Descriptive and inferential statistics were conducted. Results showed that the use of alcohol to the extent of being drunk, staying out late at night without parents' knowledge, taking chances while doing hobbies, reckless driving, and unsafe sexual practices are prominent among the students. Agreeableness ( $F(1, 308) = 9.863, p < .005$ ), and conscientiousness ( $F(1, 307) = 20.445, p < .001$ ) personality traits significantly influenced risky behaviours, while there was a significant gender difference ( $t(310) = 6.13, p < .01$ ) in the rate of risky behaviours among the participants. It is concluded that personality traits significantly contribute to risky behaviours. In addition, males are generally more inclined to engage in risky behaviours than females. Intervention-based research and activities to address the issue of risky behaviours among students are recommended. This study contributes

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to the study of risky behaviour among young persons with a reference to the context of university life in South Africa by considering gender as an important factor that contributes to risky behaviours among first-year university students.

### **Key Words**

Risky behaviours, personality traits, gender, first-year students, South African University

### **Introduction**

Globally, including in South Africa, the transition from high school to university is seen as one of the most important stages in the life of adolescents because, during this period, they may experience adjustment stress, peer pressure and other negative social influences, including participation in risky behaviours (Kipping et al. 2012; Salameh et al. 2014). Life of undergraduate students entails certain levels of psychological, academic and social adjustment challenges for many individuals as the experience tends to overlap with the transition from adolescence to adulthood. As noted by Papier et al. (2015) and Salam et al. (2015), leaving significant others and old friends behind, forming new friendships and adjusting to a new but higher academic expectation may combine to make the transition to university particularly stressful for freshmen.

Although engaging in risks can, and is regarded as, be an essential part of living, irreparable damage may result when a person engages in risky activities that are not associated with any foreseeable long-term benefits to the risk-taker. However, in the context of the present study, risky behaviours are those associated with greater danger and are defined as acts that can lead to adverse outcomes on the overall development and well-being of young people (de Guzman and Bosch 2007). Ilo et al. (2015) consider risky behaviours as acts that potentially threaten the integrity and morality of young people and interfere with their route to becoming responsible adults. Similarly, risky behaviours relate to behaviours that a person intentionally performs, which may lead to or harm one's mind and/or body, which does not include the completion of suicide (Sadeh and Baskin-Sommers 2017).

Cross-national studies that included samples selected among South Africans have shown significant increases in the prevalence of risky behaviours among university students, which is suggested to be one of the current social problems among younger persons (Ngidi et al. 2016;

Raghibi 2012; Utpala-Kumar and Deane 2010; Wordofa and Shiferaw 2015). Because unhealthy risky behaviours can result in long-term negative consequences, researchers have attempted to identify factors that influence risky behaviours. One stream of research explored whether psychological factors are related to risky behaviour. This may have been influenced by psychological theories which postulate that sensation seeking, which reflects the desire for diverse, new, and complex experiences, may encourage an active willingness to undertake social and physical risks (Zuckerman 1979).

Along this line, previous studies that focused on the relationship suggest that personality traits may strongly exert an influence on risky behaviour (Reid et al. 2012). Vermetten et al. (2001) had earlier argued that an individual's personality traits influence the development of certain intentional states such as desires, goals and beliefs. Several models of personality have been used to predict and understand why behaviour varies among individuals. However, the Big-Five Personality traits, comprising conscientiousness, agreeableness, extraversion, neuroticism and openness to experience (Costa and McCrae, 1992) constitute one of the most influential models for assessing personality influence on behaviour, including risky behaviours.

Openness to experience is associated with the need for a novel experience and a tolerance for unknown and novel things. More open individuals are curious, non-traditional, and unconventional, and tend to seek out novel experiences and rethinking authorities, although they do not necessarily lack value systems (Jovanović et al. 2012). Conscientiousness, as a personality trait, is defined as the extent of organisation, persistence and motivation of goal-directed behaviour. Individuals who score high on this trait scale are found to be precise, punctual, diligent, reliable, and thoughtful and possess strong feelings of order, duty and self-discipline (Jovanović et al. 2012). Conscientious individuals also can exercise self-discipline so that they are much more able to control their behaviour (Costa and McCrae 1992). Extraversion reflects social relations, the need for stimulation and the capacity for a positive emotional experience. Extraverts have a high need to socialise and are successful in nurturing social relationships. They also tend to score high on related traits such as talkativeness, cheerfulness, optimism, enjoying excitement and stimulation and being full of energy (Jovanović et al. 2012). Agreeableness is the personality trait that reflects a person's relationship with and attitudes toward other people. Those with high scores on agreeableness are described as altruistic, empathetic and willing to assist others, and believe that others will reciprocate the

same behaviour and treatment in return in an interpersonal relationship (Fiddick et al. 2016). Finally, neuroticism relates to an inclination to experience negative emotions and difficulty in dealing with problems. Neurotic individuals are less efficient in their attempt to overcome stress and are prone to irrational thinking (Jovanović et al. 2012). They also have problems with emotional regulation, which tends to diminish their ability to think clearly and logically, make decisions and cope effectively with stress.

Besides personality traits as likely predictors of risky behaviour among university students, gender is another individual factor that may influence risky behaviour. Gender is a social construct used to describe normative behaviours appropriate for males and females. Gendered behavioural pattern is linked to socialisation differences for both sexes with agentic traits, including competitiveness, aggressiveness and assertiveness modelled for boys, whereas girls are socialised to internalise communal traits, including altruism, cooperation and consideration. Literature suggests that the differential socialisation of boys and girls results in gendered differences in risk-taking propensity. For instance, research suggests that boys have higher activity levels (Edwardson et al. 2013) compared to girls, and are likely to behave more impulsively (Reid et al. 2012). Also, the socialisation process is such that boys are allowed to play alone (Morrongiello and Sedore 2005), which may increase the tendency to test out risky behaviours with less supervision. Based on these socialisation differentials, one may posit that it may be logical to expect that males will be higher on risky behaviours compared to girls.

According to the South African National Youth Risk Behaviour Survey 2002, the number of adolescents engaging in risky behaviours rose from 41 per cent to 58 per cent, an increase of 17% (Akinboade and Mokwena 2010). Follow-up studies since then on risky behaviours among young persons have soared. Most of these studies have focused on the prevalence of risky behaviours such as risk-taking sexual behaviours, alcohol and drug abuse, unhealthy use of tobacco, violence and self-harm among adolescents, including university students (Abels and Blihnaut 2011; Abousselam et al. 2016; Jain et al. 2018; Maughan-Brown et al., 2018).

While it is acknowledged that risky behaviours are becoming alarmingly common among young South Africans as described above, little is known about how personality traits and gender may influence participation in risky behaviours among first-year university students. Therefore, this study aimed to examine the interaction effect of personality

traits and gender on risky behaviours among a sample of university first-year students in South Africa. This study also sought to understand if there were gender differences in risky behaviours among first-year students. By doing so, this article contributes to the study of risky behaviour among young persons with a reference to the context of university life in South Africa by considering gender as an important factor that contributes to risky behaviours among first-year university students.

Three hundred and twelve (312) first-year students of a rural-based South African University participated in this study. A multistage sampling procedure involved stratified random sampling for the selection of faculty and department which formed the primary sampling unit, and simple random sampling for the selection of students from a list of students registered for undergraduate courses offered by each department selected. The participants comprise 59.6 per cent females and 40.4 per cent males aged between 17 and 19 years at the time of data collection.

The Big Five Personality Inventory is a 44-item self-report measure designed to screen individuals on the five broad dimensions of personality (openness to experience, conscientiousness, extraversion, agreeableness and neuroticism). The items on the scale were written in short phrases. Responses were rated on a 5-point Likert-type format with options ranging from disagree strongly (1), disagree a little (2), neither agree nor disagree (3), agree a little (4) and agree strongly (5). The Cronbach alpha coefficients for the subscales of the Big Five in this study were as follows: Openness to experience .73; Conscientiousness .71; Extraversion .67; Agreeableness .64; and Neuroticism .76. Higher scores on each dimension indicate possession of that personality trait.

The Risk-taking and Self-harm Inventory for Adolescents (RTSHIA) developed by Vrouva et al. (2010) was used for data collection. The RTSHIA is a self-report measure designed to measure risk-taking behaviour and self-harm among adolescents. It was divided into separate risk-taking (RT) and self-harm (SH). The risk-taking behaviour includes 12 items: Reckless driving, not taking necessary precautions in a risky situation, involvement in violent activities, sexual risk behaviour, and alcohol and drug abuse. Items are scored on a 4-point Likert scale with options ranging from 1 = (never), 2 = (once), 3 = (more than once) and 4 = (many times). Higher scores indicate a higher frequency of engagement in risk-taking behaviours. Cronbach alpha coefficient .73 was established in this study.

Goodwill permission and appropriate ethical approval were duly obtained before the commencement of this study. A detailed statement of

informed consent that contained the purpose, procedures, potential risk(s) (if any) and benefits of participating in the study was given and explained to participants. Participants were also assured of the confidentiality of their responses. Individuals who consented voluntarily to participate in the study administered the research questionnaire. Participants were approached at different locations including lecture theatres and lounges. Data were collected over two weeks. Respondents took about 30 minutes to complete the questionnaire. Four hundred questionnaires were administered, out of which 312 were found usable for data analysis, yielding a response rate of 78 per cent. The 312 questionnaires used for data analysis were sufficient for the calculated minimum sample size required for this study.

The data collected were subjected to the Statistical Package for Social Sciences version 23 for statistical analysis. Descriptive statistics, Pearson product-moment correlation, a two-way analysis of variance, and independent sample t-test analysis were used to analyze the data, and results were accepted at  $p \leq 0.05$ .

### **Risky Behaviours among First-Year University Students**

The results presented in Table 1 reveal that on the list of risky behaviours assessed among first-year university students, the use of alcohol to the extent of being drunk ranked as the most occurring risky behaviour among the participants. It was also shown that about 60 per cent of the participants reported ever staying out late at night without the knowledge of their parents or guardians. Other prominent risky behaviours reported by the participants include taking chances while doing hobbies, reckless driving, putting self in a risky situation such as classroom cheating, and not taking precautions against sexually transmitted diseases or pregnancy during sex. A further look at the results revealed that the students reported that they have been involved in taking chances while doing hobbies, (21.2%), staying out late at night without the knowledge of parents (15.1%), and using alcohol to the extent of being drunk (14.4%) on multiple occasions implying that these risky behaviours are quite popular among the target population.

**Table 1**  
**The Prevalence of Risky Behaviours among the Participants (N = 312)**

	Never (%)	Once (%)	More Than Once (%)	Many Times (%)
Have you ever taken chances while doing your hobbies (e.g. not wearing your helmet and other safety gear, riding risky stances on your skateboard, etc.)?	43.9	15.7	19.2	21.2
Have you ever deliberately crossed the road dangerously or driven recklessly (e.g. raced, did not fasten your seatbelt, drove while intoxicated or drunk)?	48.7	15.7	26.3	9.3
Have you ever put yourself in a risky situation (such as classroom cheating, traveling without a valid ticket, shoplifting etc.) knowing that you may get caught?	54.2	24.7	14.7	6.4
Have you ever been suspended (i.e. punished with exclusion) or dropped out of school?	89.7	6.7	1.9	1.6
Have you ever stayed out late at night, without your parents knowing where you are?	40.4	17.0	27.6	15.1
Have you ever participated in gang violence, physical fights or held a weapon	85.9	8.7	3.5	1.9
Have you ever been promiscuous (i.e. had many sexual partners within a short period of time)?	75.3	11.5	8.3	4.8
Have you ever had sex avoiding precautions against sexually transmitted diseases or pregnancy?	59.9	17.3	14.1	8.7

Have you ever put yourself at risk of sexual abuse?	88.1	6.7	3.2	1.9
Have you ever had so much alcohol that you were really drunk?	39.4	25.3	20.8	14.4
Have you ever used drugs (such as marijuana, cocaine, LSD etc)?	69.2	13.5	9.9	7.4
Have you ever smoked tobacco?	65.7	20.2	6.7	7.4

Table 2 shows the relationships between gender, personality traits (extraversion, agreeableness, conscientiousness, neuroticism and openness to experience), and risky behaviours among first-year university students. The result showed a significant positive correlation between gender and risky behaviour ( $r = .33$ ,  $p < .01$ ), which implies that more males than females scored higher on the risk-taking scale. Further, the result reveals that agreeableness ( $r = -.30$ ,  $p < .01$ ), and conscientiousness ( $r = -.30$ ,  $p < .01$ ) are the only personality traits that have significant relationships with risky behaviours.

Table 2  
Descriptive Statistics and Correlations among Variables

	Mean	SD	1	2	3	4	5	6	7
1 Gender			-						
2 Extraversion	26.65	5.33	-.08	-					
3 Agreeableness	36.08	5.20	-.07	.14*	-				
4 Conscientiousness	34.03	5.70	-.03	.23**	.41**	-			
5 Neuroticism	21.73	5.92	-.08	-.30**	-.31**	-.29**	-		
6 Openness	36.46	4.47	.02	.22**	.19**	-.28**	-.08	-	
7 Risky behaviours	19.96	6.03	.33**	.01	-.30**	-.30**	.03	-.01	-

\*\*  $p < 0.01$

\*  $p < 0.05$

Note: Male = 1, Female = 0.



**Personality Traits, Gender and Risky Behaviours among First-Year University Students**

The main objective of this study was to examine the interaction effect of personality traits and gender on risky behaviours among the selected university first-year students. To investigate the statistically significant main and interaction effect of gender and agreeableness on risky behaviour among the participants, a two-way analysis of variance was conducted. The result obtained was presented in Table 3.

Table 3  
Interaction Effect of Gender and Agreeableness on Risky Behaviours among First-Year University Students

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Intercept	124035.476	1	124035.476	3926.145	.000
Gender	1106.315	1	1106.315	35.019	.000
Agreeableness	311.595	1	311.595	9.863	.002
Gender * Agreeableness	18.407	1	18.407	.583	.446
Error	9730.392	308	31.592		
Total	135607.000	312			

a. R Squared = .141 (Adjusted R Squared = .133)

b. Computed using alpha = .05

Table 3 reveals that there was no statistically significant interaction between gender and agreeableness on risky behaviours ( $F(1, 308) = .583, p > .05$ ). The result, however, shows that there were statistically significant differences in mean risky behaviours between males and females ( $F(1, 308) = 35.019, p < .001$ ), and students with high and low levels of agreeableness personality traits ( $F(1, 308) = 9.863, p < .005$ ).

To investigate the statistically significant main and interaction effect of gender and conscientiousness on risky behaviours among the participants, a two-way analysis of variance was conducted. The result obtained was presented in Table 4.

**Table 4**  
**Interaction Effect of Gender and Conscientiousness on Risky Behaviours among First-Year University Students**

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	122292.549	1	122292.549	3983.876	.000
Gender	1198.693	1	1198.693	39.049	.000
Conscientiousness	627.583	1	627.583	20.445	.000
Gender * Conscientiousness	64.025	1	64.025	2.086	.150
Error	9423.940	307	30.697		
Total	135351.000	311			

a. R Squared = .167 (Adjusted R Squared = .159)

b. Computed using alpha = .05

Table 4 shows that there was no statistically significant interaction between gender and agreeableness on risky behaviours ( $F(1, 307) = 2.086, p > .05$ ). The result, however, shows that there were statistically significant differences in mean risk-taking between males and females ( $F(1, 307) = 39.049, p < .001$ ), and students with high and low levels of conscientiousness personality traits ( $F(1, 307) = 20.445, p < .001$ ).

### **Gender Differences and Risky Behaviours among First-Year University Students**

The second objective of this study was to understand if there were gender differences in risky behaviours among first-year students. Table 5 shows that there was a significant difference in the risky behaviour reported by male and female students ( $t(310) = 6.13, p < .01$ ). Further observation of the means showed that the mean score on the scale of the risky behaviour reported by males ( $M = 22.36; SD = 6.67$ ) is significantly higher than what was reported by the females ( $M = 18.33; SD = 4.95$ ). This implies that male first-year engage more in risky behaviours than their female counterparts.

Table 5  
Gender difference and risky behaviours among first-year students

	N	Mean	Std. Dev.	T	Df	Sig.
Male	126	22.36	6.67	6.13	310	.00
Female	186	18.33	4.95			

**Explaining the Effect of Personality Traits and Gender Differences on Risky behaviours among First-Year University Students**

In this study, we investigated the interaction effect of personality traits and gender on risky behaviours among a sample of university first-year students in South Africa. Our preliminary findings raised concern over the rate of risky behaviours among the first-year university student population in South Africa. In this regard, Elbially et al. (2017) observed that risky behaviours among students largely contribute to morbidity and mortality during the school period.

We found that the students highly engaged in several risky activities including staying out late at night without the knowledge of their parents or guardians, taking chances while doing hobbies, reckless driving, putting themselves in risky situations such as classroom cheating, and not taking precautions against sexually transmitted diseases or pregnancy during sex with prevalence ranging between 10.3 per cent (ever being suspended or dropped out of school) to 59.6 per cent (staying out late at night without parents’ knowledge). It was further revealed from the results that about 21 per cent of the students reported multiple occasions of taking chances about safety while doing their hobbies, 15.1 per cent indicated staying out late at night without the knowledge of parents many times, while about 14 per cent of the participants had used alcohol to the extent of being drunk on many occasions. Related studies have also reported a disturbing situation of risky behaviours among South African university students (Ngidi, et al., 2016). Alcohol use and unprotected sex among undergraduate students despite knowing the associated consequences have been repeatedly reported as major risky behaviours among the population.

This assertion has been affirmed by other scholars arguing that the period of late adolescence and young adulthood which corresponds with university age is particularly characterized by several risky behaviours including alcohol and drug use, unsafe sexual practices, dropping out of school, and involvement in violence and crime which have serious harmful

consequences on young people (Graham et al. 2018; Radcliffe and Thorley 2015). On the other hand, Bhuvaneshwari (2018) gave another perspective on the high prevalence of risky behaviour among university students, opining that risky behaviours are more prominent among the student population than the general population because university students face a lot of pressure from peers and the excitements from new experiences, as well as their incapacity for understanding complex concepts such as consequences for their actions.

Examining the relationships between personality traits, gender and risky behaviours, we found that only agreeableness and conscientiousness significantly correlated with risky behaviour. Both agreeableness and conscientiousness personality traits were significantly negatively associated with risk-taking, implying that high scorers on both traits scored low on the risk-taking scale. In essence, freshmen who possess a warm attitude in interpersonal relationships, and are empathetic and considerate of others are less likely to engage in risky behaviours. Similarly, attributes of being goal-directed, thoughtful and diligent in first-year students are inversely related to risky behaviours. Also, the correlation analysis conducted shows that males more than females are more likely to be involved in risky behaviours.

Findings from our first objective show that there was no significant interaction between agreeableness and gender, as well as conscientiousness and gender on risky behaviour among the sampled population. However, there was a significant main effect of each of the personality traits of agreeableness, and conscientiousness on risky behaviours. The results also showed that gender has a significant effect on risk-taking. This implies that significant differences exist in mean risky behaviours between freshmen with low and high agreeableness, and conscientiousness, and also between males and females. But risk-taking did not significantly change by interactions between personality traits and gender. In this regard, irrespective of gender, the effect of agreeableness, and conscientiousness on risky behaviour are significantly stable.

Our findings have support from several previous studies establishing significant impacts of personality traits on risky behaviours (Fiddick et al. 2016; Chraif et al. 2015). Conscientiousness is associated with several self-inhibiting traits such as conventionality and self-discipline (Costa and McCrae 1992). It is plausible that the more conscientious a student is, the more risk-averse (more conventional, more self-disciplined) he or she tends to become, resulting in lowered tendencies to engage in risky behaviours.

Males reported significantly higher risky behaviour than their female counterparts. Our finding is consistent with previous studies which revealed that females are more risk-averse compared to males (Charness and Gneezy 2012; Reniers et al. 2016). Also, it has been asserted that irrespective of the situation, males are more likely than females to engage in risky behaviours (de Jager and Naudé 2018). There are, at least, two plausible explanations for this result. First, male students could have perceived situations that confronted them as less risky compared to females. Thus, the perceptual difference in the risk level associated with a potentially harmful activity could have fuelled male students' involvement in harmful behaviours. Second, it could be that males in the sample were influenced more by peer perception of approval to engage in harmful behaviours, while females were less likely.

## **Conclusion**

This article has shown the effect of personality traits and gender on the risky behaviours of first-year students in a South African university. Our findings revealed a significant prevalence of risky behaviours including staying out late at night, intentional avoidance of taking precautions in a risky situation, alcohol use and unsafe sexual practice among the sampled population. It was established that of the five personality traits studied, only agreeableness and conscientiousness significantly affected the risky behaviours reported by the participants. Furthermore, the male participants reported significantly higher involvement in risky behaviours than their female contemporaries.

Nevertheless, this study has some limitations. The design adopted in the study (i.e. cross-sectional design) does not allow tracking of risk-taking propensity over time. A longitudinal design would have provided more information about changes in risk-taking tendencies among first-year students. Also, a self-administered questionnaire was used for data collection. This approach could have increased the likelihood of respondents faking their responses, thus affecting the reliability of the results. Also, the sample was selected among first-year students only at one university. This may affect the generalisation of results to first-year students at other universities in South Africa.

Based on this, we have some recommendations for future studies. First, identifying and helping students with mental health challenges in the university community is important. We recommend that the South African university authority should strengthen their healthcare services

to the students by building a system that targets students with needs for mental health assessment and interventions. This will translate into a reduction in the rate of risky behaviours and possible associated harmful consequences. In line with the aforementioned, students whose personality traits and profiles are put at risk of engaging in risky behaviours should be identified and assisted accordingly to develop the appropriate capacity and skills to embrace a more healthy and safe lifestyle. Finally, there is a need for more intervention-inclined research to address the challenging issue of risky behaviours and associated harmful consequences among university students in South Africa. Future researchers are, therefore, encouraged to conduct studies in this direction.

### **Funding**

The author(s) received no financial support for the research, authorship, and/or publication of this article.

### **Acknowledgement**

We sincerely acknowledge and appreciate the participants of the study for their roles in the data collection of this study.

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