

# A Quantitative Investigation of Factors Influencing Binge Drinking Behavior amongst Undergraduate University Students in Johannesburg, South Africa

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## *Abstract*

The paper investigates factors influencing binge drinking behavior among university undergraduate students. Data is drawn from a quantitative survey conducted on undergraduate students' perceptions of peer pressure, students living arrangement, socio-economic status and binge drinking at a South African university. 330 students participated in the study by completing a paper-based survey. The study found a statistically significant correlation between factors of peer pressure, students staying off-campus, high socio-economic status and binge drinking. Female students engage in binge drinking more than male students. Students with friends who drink were more likely to engage in binge drinking than those with friends drinking less. Students living off campus were more likely to engage in binge drinking of alcohol than those staying on campus. Students with high socioeconomic status were more likely to engage in binge drinking than those with low socioeconomic status. The paper makes an empirical contribution to future studies to explore binge drinking behavior amongst university students.

*Keywords:* alcohol, binge drinking, university students, peer pressure, socioeconomic status.

## 1. Introduction

Alcohol consumption among university students is a growing trend with generally negative effects. According to Dlamini, Rugbeer, Naidoo, Metso and Moodley (2012), the consumption and abuse of alcohol is common in rural South African universities, and students are more likely to consume alcohol as a result of peer pressure. University students are most likely to be introduced to alcohol consumption during university orientation week (Kalideen, 2011). This suggests that students are less likely to consume alcohol while still under the supervision of their parents but begin drinking alcohol at university. Gresse, Steenkamp and Pietersen (2015) indicate that student living arrangements contribute to the consumption and abuse of alcohol, with students living without supervision tend to consume alcohol freely. Studies reporting on the negative effects of the consumption and abuse of alcohol on university students list a high rate of absenteeism, a high drop-out rate and poor academic performance as the consequences of such behavior (Betancourt & Herrera, 2006; Devos-Comby & Lange, 2008; Gresse, Steenkamp & Pietersen, 2015; Govender, Nel & Mogotsi, 2015). Although the consumption and abuse of alcohol has received considerable research attention in South Africa, binge drinking among university students and the factors leading students to drink excessively is an under-studied area. Studies on alcohol abuse by students tend to contradict one another: for instance, while Tayob and Van de

Heever (2014) report that students do not drink excessively but do nevertheless consume alcohol, Kwabena and Ramagoma (2013) and Young and Klerk (2008) argue that university students do in fact abuse alcohol and do so for numerous reasons, including stress relief and peer pressure. The purpose of the study was to explore binge drinking among university undergraduate students and the factors influencing such a behavior. Using a quantitative research approach, the study intended to provide a response to the following research question: What are the factors influencing undergraduate students to engage in binge drinking of alcohol?

## 2. Defining binge drinking

Binge drinking receives considerable research attention in the north but is understudied in the context of South African universities, even though the consumption and abuse of alcohol among university students is known to be prevalent in South Africa (Kwabena & Ramagoma, 2013; Mogotsi, Nel, Basson & Tebele, 2014). The definition and measurement of binge drinking provide an important foundation for the discussion to follow. On the basis of a study conducted in the USA by Weitzman, Nelson and Wechsler (2003), binge drinking is measured as the consumption of more than five alcoholic beverages for men and four or more for women in one sitting. Binge drinking in South Africa is likewise measured by the number of alcoholic drinks consumed in one sitting, generally accepted as four or more (Betancourt & Herrera, 2006; Phillip & Steyl, 2009). In general, men are reported to abuse alcohol to a greater extent than women. Some studies indicate that peer pressure is among the causes of binge drinking, because students drink alcohol to have fun with friends (Kwabena & Ramagoma, 2013). However, binge drinking has serious negative effects on students, including putting them at greater risk of contracting STIs and HIV, poor academic performance and absenteeism (Phillip & Steyl, 2009). For the purposes of the study binge drinking was measured as the consumption of four or more alcoholic beverages in one sitting.

## 3. Literature review: Factors influencing binge drinking

### 3.1 *Peer pressure and binge drinking*

Peer pressure is at the core of alcohol consumption and binge drinking by university students. Yunus, Mushtaq and Qaiser (2012) define peer pressure as an influence on how one behaves and thinks in a particular space. This is associated with individuals conforming to certain ways of a particular group or individuals, with those who do not conform being seen as outcasts. Binge drinking among students is influenced by peer pressure, as students consume alcohol under the guise of having fun with friends (Robinson, Jones, Christiansen & Field, 2014). Gou, Li, Owen, Wang and Duncan (2015) argue that peer pressure takes multiple forms; for instance, direct influence is achieved through the friendly gesture of buying alcohol for friends. Similarly, South African studies show peer pressure to be one of the main contributors to binge drinking by university students (Themane, 2014; Mogotsi, 2011). University students are influenced by their peers to engage in binge drinking during social activities such as parties; as Kalideen (2011) points out, students are introduced to the drinking culture during university orientation. Thus, students who have friends who binge drink are more likely to engage in binge drinking themselves.

### 3.2 *Students' living arrangements and binge drinking*

University students make use of a variety of living arrangements, some of which have strict rules governing alcohol consumption. Studies have indicated that there is a relationship between students' living arrangements and binge drinking, with Cross, Zimmerman and O'Grady (2009) arguing that students residing on campus are more likely to binge drink than those staying

off campus. Although student residences on campus have strict rules regarding alcohol consumption, students living there do nevertheless drink alcohol. Lorant, Nicaise, Soto and d'Hoore (2013) indicate that the relationship between where students live, and binge drinking may derive from the influence students have on one another. Kwabena and Ramagoma (2013) make an observation that students staying off campus engage in binge drinking as the result of the influence by their peers. Students living arrangement therefore has an impact on their engagement in binge drinking behavior.

### 3.3 Socioeconomic status and binge drinking

There is known to be a relationship between socioeconomic status and student binge drinking. The study conducted by Richter, Leppin and Ghabainn (2006) indicates that students from affluent families are more likely to engage in binge drinking because they have the money to do so. Similarly, Humensky (2010) found socioeconomic status to influence binge drinking behaviour among university students. Studies in South Africa indicate that students who are less affluent are less likely to engage in alcohol consumption because they do not have enough money to purchase alcohol (Mogotsi, 2011). However, Wechsler, Seibring, Liu and Marilyn (2004) posit that socioeconomic status is not the only factor influencing binge drinking, and that access to cheap alcohol contributes to this phenomenon. In general, easy access to alcohol influences binge drinking among university students, irrespective of their socioeconomic status. The study aimed to understand the impact of socioeconomic status on undergraduate binge drinking among students at a South Africa university.

An exploration of the literature indicated that limited quantitative studies conducted to investigate the factors influencing binge drinking among undergraduate students at a South African university. Most of the studies conducted measured the possible factors influencing students' alcohol consumption based on the effects of the consumption of alcohol on students. The following hypotheses were formulated for testing:

- **Hypothesis 1:** Students staying on campus are more likely to engage in binge drinking than those staying off campus. The independent variable is student's place of residence, which was measured through looking at students staying on campus and those staying off campus in relation to binge drinking. The dependent variable is engagement in binge drinking.
- **Hypothesis 2:** Students from high family socioeconomic status are more likely to engage in binge drinking than those from low family socioeconomic status. The independent variable is socio-economic status, which was measured through looking at students' family economic status. The dependent variable is engagement in binge drinking.
- **Hypothesis 3:** Students with friends who drink a lot are more likely to engage in binge drinking than those with friends who do not drink a lot. The independent variable is peer pressure, which was measured through examining the influence of friends who drink a lot on other students who engaged in binge drinking. The dependent variable is engagement in binge drinking.

## 4. Research methodology

Using the quantitative research approach, the study explored the factors influencing binge drinking among undergraduate students. Employing the quantitative approach allowed the researcher to collect data from a large sample (n=330) in a short space of time (Sarantakos, 2005; Babbie, 2004). Multi-stage cluster sampling was used to select respondents for the study, and 330 students (first-, second- and third-year students) completed the self-administered survey, which

took the form of a paper-based survey consisting of biographical and closed-ended questions relating to the phenomenon under investigation.

Data was collected during undergraduate tutorial classes. In all, 330 students responded to the survey, and SPSS 24.0 was employed to analyse data. Chi-square was used to test the significant relationship between dependent and independent variables. The dependent variable was engagement in binge drinking, and independent variables were peer pressure, socioeconomic status and students' place of residence (either on or off campus). Ethical clearance for this study was obtained from the Faculty of Humanities Ethics Committee.

#### 4.1 Description of the sample

The profile of the sample provides an outline of the respondents who completed the survey. The variables listed below are binge drinking, peer pressure, socioeconomic status and student's place of residence. The study sample consisted of n=330 respondents (68.8% female and 31.2% male). Most students lived off campus (88.2%), with the minority living on campus (11.8%). Of the respondents, 50.91% engaged in binge drinking, and 49.70% did not. In terms of socioeconomic states, 35.15% were able to make ends meet, 33.64% were living adequately, 13.33% struggled to make ends meet, 12.42% were living comfortably and 2.42% were affluent. In response to being asked whether they had friends who drank a lot, 26.06% strongly agreed, 21.82% agreed, 21.21% neither agreed nor disagreed, 19.39% disagreed and 11.52% totally agreed.

### 5. Results

#### 5.1 Binge drinking among undergraduate students

Binge drinking at South African universities is an under-studied phenomenon, particularly in terms of the possible factors leading students to consume more than four or five alcoholic drinks in one sitting. Although studies have explored the consumption and abuse of alcohol at universities, most of these have measured the level of alcohol abuse among students as reflected by the negative effects on students. In the study under review, binge drinking was investigated by asking students whether they consumed four or more alcoholic beverages in one sitting. The pie chart below illustrates that at 50.3%, slightly more students engaged in binge drinking, while 49.70% did not.

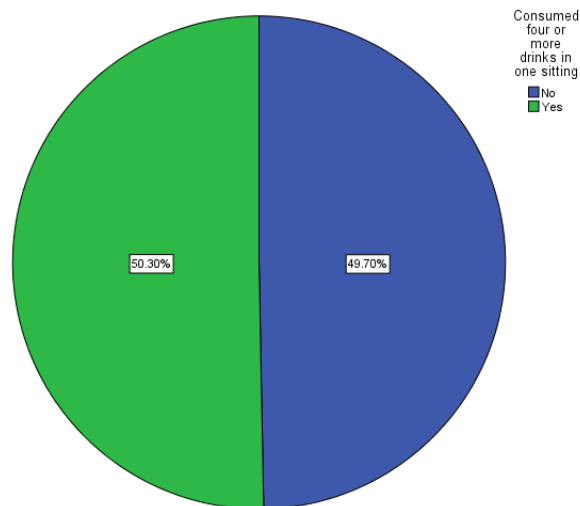


Figure 1. Binge drinking

Binge drinking is the dependent variable, and was tested with the following independent variables identified from the literature as possible factors leading university students to engage in the consumption and abuse of alcohol: peer pressure, students' place of residence and socioeconomic status.

5.2 Peer pressure and binge drinking among undergraduate students

The chi-square test was employed to test the significant relationship between peer pressure and student engagement in binge drinking. The question aimed at understanding whether students engaged in binge drinking in response to the influence of friends who drank a lot. Respondents were asked whether their friends drink a lot, and provided with the following set of possible responses: 1=Strongly disagree, 2=Disagree, 3=Neither disagree or agree, 4=Agree and 5=Strongly agree. Binge drinking was measured by asking students whether they were in a habit of consuming four or more alcoholic drinks in one sitting, and they were provided with the following set of possible responses: 1=Yes and 2=No. Strongly disagree (5) and Disagree (4) were merged for reliability of tests.

Table 1. Cross tabulation between peer pressure and binge drinking

**Friends drink a lot \* Consumed four or more drinks in one sitting: Cross tabulation**

			Consume four or more drinks in one sitting		Total
			No	Yes	
Friends drink a lot	Disagree or Strongly disagree	Count	101	49	150
		% within Friends drink a lot	67.3%	32.7%	100.0%
	Neither agree nor disagree	Count	28	42	70
		% within Friends drink a lot	40.0%	60.0%	100.0%
	Agree	Count	26	46	72
		% within Friends drink a lot	36.1%	63.9%	100.0%
	Strongly agree	Count	9	29	38
		% within Friends drink a lot	23.7%	76.3%	100.0%
Total		Count	164	166	330
		% within Friends drink a lot	49.7%	50.3%	100.0%

The chi-square test was suitable for testing the relationship between ordinal and normal variables. The results show that university students engaged in binge drinking in response to the influence of peers who drank a lot of alcohol. A total of 76.3% of students stated that they engaged in binge drinking and strongly agreed that they had friends who drank a lot, while 23.7% did not engage in binge drinking, and stated that their friends did not consume a lot of alcohol. The results illustrate that students' engagement in binge drinking was influenced by having friends who drank a lot (peer pressure). The relationship between peer pressure and students' engagement in binge drinking is further illustrated below.

Table 2. Chi-square test of the relationship between peer pressure and binge drinking

<b>Chi-square tests</b>			
	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	36.898 <sup>a</sup>	3	.000
Likelihood Ratio	37.918	3	.000
Linear-by-Linear Association	33.448	1	.000
N of Valid Cases	330		

a. 0 cells (0.0%) have an expected count of less than 5. The minimum expected count is 18.88.

The chi-square test above yields the results of testing the relationship between peer pressure and binge drinking. The p-value is 0.00, which is smaller than 0.05, hence the null hypothesis of students with friends who drink a lot are not likely to engage in binge drinking is **rejected**. The alternative hypothesis is **not rejected** because the results show a significant relationship between peer pressure and binge drinking behavior, because students who engaged in binge drinking reported having friends who drank a lot. Therefore, the undergraduate Sociology students who participated in the study engaged in binge drinking in response to the influence of peers who drank a lot.

### 5.3 Students' place of residence and binge drinking

The relationship between students' place of residence and binge drinking was tested using the chi-square test. The question focused on exploring the influence of students' living arrangements on binge drinking behavior, and respondents were given the following possible responses from which to select: 1=*On campus residence*, 2=*Off-campus shared accommodation*, 3=*At home with parents/guardians/family/other adults* and 4=*I live on my own/with spouse/with partner*. Engagement in binge drinking was tested through asking students whether they were in the habit of consuming four or more alcoholic drinks in one sitting. For reliability of the test, response 3=*at home with parents/guardians/family/other adults* and 4= *I live on my own either with spouse/partner* were merged.

Table 3. Cross tabulation between students' place of residence and binge drinking

<b>Study residence (place of residence while studying) * Consuming four or more alcoholic drinks in one sitting: Cross tabulation</b>					
			Consuming four or more drinks in one sitting		Total
			No	Yes	
Study residence (place of residence while studying)	University residence	Count	22	17	39
		% within Study residence	56.4%	43.6%	100.0%
	Off-campus shared accommodation (commune/flat/townhouse)	Count	89	79	168
		% within Study residence	53.0%	47.0%	100.0%
	At home (with parents/guardians/family/other adults) or I live on my own/with spouse/with partner	Count	53	70	123
		% within Study residence	43.1%	56.9%	100.0%
Total		Count	164	166	330
		% within Study residence	49.7%	50.3%	100.0%

The cross tabulation illustrates that students staying off campus were more likely to engage in binge drinking (47.0%) compared with students living on campus (43.6%). Although students staying off campus in communes and so on engaged in binge drinking, students staying at home did so to a greater degree (56.9%). The results show that students' living arrangements influenced their binge drinking behaviour, as those staying off campus engaged in binge drinking more than those staying on campus. Thus, there is a relationship between students' engagement in binge drinking and their place of residence – specifically their living arrangements. Students staying at home and those living on their own were collapsed into a single category for the reliability of the test, as these were suitable for testing as one category.

Table 4. Chi-square test of students' place residence and engagement in binge drinking

Chi-square tests			
	Value	Df	Asymptotic significance (2-sided)
Pearson Chi-Square	3.574 <sup>a</sup>	2	.167
Likelihood Ratio	3.583	2	.167
Linear-by-Linear Association	3.541	1	.060
N of Valid Cases	330		

a. 0 cells (0.0%) have an expected count of less than 5. The minimum expected count is 19.38.

The results illustrate the relationship between students' place of residence and engagement in binge drinking. The p-value of the test is 0.167, which is greater than 0.05. Thus, the null hypothesis of students staying on campus not being likely to engage in binge drinking in comparison with those staying off campus is **not rejected**. The alternative hypothesis of students staying on campus being more likely to engage in binge drinking than those staying off campus is **rejected**. Thus, the results indicate that students staying off campus engage in binge drinking to a greater extent than those staying on campus. There is a significant relationship between students' place of residence and their engagement in binge drinking.

#### 5.4 Socioeconomic status and binge drinking

The chi-square test was used to test the relationship between socioeconomic status and binge drinking. The study intended to investigate the influence of socioeconomic status on students' engagement in binge drinking. Respondents were given the following possible responses from which to select: 1=*Cannot or rarely provide the basics*, 2=*Struggling to make ends meet*, 3=*Just manage to make ends meet*, 4=*Living an adequate life*, 5=*Well-off or living a comfortable life* and 6=*Affluent*. Engagement in binge drinking was tested by asking students whether they were in the habit of consuming four or more alcoholic drinks in one sitting.

The cross tabulation illustrates the relationship between socioeconomic status and binge drinking. The results indicated that of the students living a comfortable or privileged life, 73.2% engaged in binge drinking compared with 40.7% of those barely able to make ends meet. Of the students living an affluent lifestyle, 62.5% engaged in binge drinking. Thus, students of high socioeconomic status were more likely to engage in binge drinking than those who were struggling and were of low socioeconomic status. This demonstrates that there is a relationship between socioeconomic status and binge drinking among university students. The responses; 1=*cannot or rarely provide for basic needs* and 2=*struggling to make ends meet* were collapsed into a single category for the reliability of the test.

Table 5. Cross tabulation of socioeconomic status and engagement in binge drinking

<b>Socioeconomic category * Consuming four or more alcoholic drinks in one sitting: Cross tabulation</b>					
			Consuming four or more alcoholic drinks in one sitting		
			No	Yes	Total
Socioeconomic category	Cannot or rarely provide for basic needs or Struggling to make ends meet	Count	32	22	54
		% within Socioeconomic category	59.3%	40.7%	100.0 %
	Just manage to make ends meet	Count	64	52	116
		% within Socioeconomic category	55.2%	44.8%	100.0 %
	Living an adequate life	Count	54	57	111
		% within Socioeconomic category	48.6%	51.4%	100.0 %
	Living a comfortable or privileged life	Count	11	30	41
		% within Socioeconomic category	26.8%	73.2%	100.0 %
Affluent	Count	3	5	8	
	% within Socioeconomic category	37.5%	62.5%	100.0 %	
Total		Count	164	166	330
		% within Socioeconomic category	49.7%	50.3%	100.0 %

Table 6. Chi-square test of socioeconomic status and binge drinking

<b>Chi-Square Tests</b>			
	Value	Df	Asymptotic significance (2-sided)
Pearson Chi-Square	12.468 <sup>a</sup>	4	.014
Likelihood Ratio	12.831	4	.012
Linear-by-Linear Association	9.760	1	.002
N of Valid Cases	330		

a. 2 cells (20.0%) have an expected count of less than 5. The minimum expected count is 3.98.

The chi-square tests the relationship between socioeconomic status and students' engagement in binge drinking. The p-value is 0.014, which is smaller than 0.0, hence the null hypothesis that students of high socioeconomic status are not likely engage in binge drinking and that those of low socioeconomic status are is **rejected**. The alternative hypothesis is **not rejected**; therefore, students of high socioeconomic status are more likely to engage in binge drinking than those of low socioeconomic status.



## 6. Discussion

Alcohol consumption by students is prevalent at South African universities; Tayob and Van de Heever (2014) in fact argue that alcohol use by students is a major health concern. According to Kwabena and Ramagoma (2013), students consume alcohol to overcome depression, relieve stress, imitate role models and obtain relief from loneliness. Although studies have been conducted on alcohol consumption by students, the study reported on here indicates that students not only consume alcohol, but engage in binge drinking behaviour, understood for the purposes of the study as consumption of four or more alcoholic beverages in one sitting. The results indicate that students do indeed engage in binge drinking, and that factors giving rise to this behaviour include peer pressure, students' living arrangements, and socioeconomic status.

The study revealed a significant relationship between binge drinking and peer pressure. On the one hand, students with friends who drank a lot tended to engage in binge drinking themselves, while on the other hand, students with friends who did not drink a lot reported not engaging in binge drinking. Therefore, the study provided an indication that students' binge drinking is influenced by peer pressure through having friends who drink a lot. The results therefore bear out the established literature stating that peer pressure is one of the main factors leading students to drink alcohol (Kwabena & Ramagoma, 2013; Themane, 2014).

The study showed that there is a significant relationship between students' living arrangements and binge drinking, with students staying off campus engaging in binge drinking to a greater degree than those staying on campus. In this, the results contradict the literature indicating that students living on campus consume more alcohol than those living off campus (Kwabena & Ramagoma, 2013). This suggests that university residences could be taking precautions to limit alcohol consumption by students.

The study demonstrated that there is a significant relationship between socioeconomic status and student engagement in binge drinking. The established literature proposes that students consume alcohol because they have enough money to buy it (Richter, Leppin & Ghabainn, 2006; Humensky, 2010). The results of the study showed that indeed students of high socioeconomic status engaged in binge drinking to a greater extent than those who just managed to make ends meet. Although South African studies have shown that students struggling to make ends meet do abuse alcohol (Mogotsi, 2011), the study reported on suggested that students of high socioeconomic status engage in binge drinking to a greater degree than those of low socioeconomic status.

## 7. Conclusion

The study investigated factors leading to binge drinking among university students. The literature shows that alcohol consumption is prevalent among university students and results in poor academic performance and increased absenteeism. Peer pressure is the main factor giving rise to alcohol consumption among this group. Although the consumption of alcohol is known to be prevalent at South African universities, the study found that students engage in binge drinking behaviour, measured in this context by the number of alcoholic beverages students consume in one sitting. The results indicated that female students engaged in binge drinking to a greater degree than their male counterparts – in other words, female students were more likely than male students to consume four or more alcoholic drinks in one sitting. The factors encouraging binge drinking among students include peer pressure, students' living arrangements and socioeconomic status. University students engaged in binge drinking mainly as a result of having friends who drank alcohol (thus as a result of peer pressure). The study further revealed that students living off campus engaged in binge drinking to a greater extent than those staying on campus. Socioeconomic status influenced engagement in binge drinking, with students of high

socioeconomic status and with access to money engaging in binge drinking to a greater degree than those of low socioeconomic status. The study did not generalise with regard to binge drinking behaviour among university students but was intended to contribute to filling the knowledge gap relating to binge drinking behaviour at South African universities.

### 7.1 Recommendations

- Future studies could potentially measure binge drinking in detail by asking respondents to state and estimating the number of alcoholic beverages consumed in one sitting.
- Researchers could employ mixed methods to obtain detailed data relating to student experiences of binge drinking and the behaviour.

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