

# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

The use and abuse of alcohol is widespread among students. This observation has led a number of writers to conclude that the use of alcohol among university students has become a culture (Matthews, 2004). The implications of the observation are that students who drink alcoholic beverages during high school will continue to do so at university, while those who do not use alcohol are likely to be initiated into the use of the substance during their stay at university. For some students, transition to university is the first experience of being away from home, a dept which presents unique challenges and opportunities (Robins, Frailey, Roberts, & Trzesniewski, 2001). It is during the process of adapting to life away from home that some students may experiment with the use of intoxicating substances.

The widespread use of alcohol on university campuses has led to the need to understand the reasons why students use alcohol. There is a research trend that points to various personality factors, among other reasons, for alcohol use and abuse. Most studies investigating the influence of personality characteristics on alcohol use among students argue that sociability, sensation-seeking, depressed affect, and impulsivity are personality factors that can predict the use of alcohol (Aneshensel & Huba, 1983; Wills, Sand, & Yeager, 2000; Youniss & Yates, 1997).

For instance, Johnson, Sheets, and Kristeller (2001) found that both sensation-seeking and conscientiousness are strongly associated with alcohol consumption. In some of the studies, personality traits are typically seen as mediating or moderating the relationship between biological, psychological, social, environmental factors, and subsequent alcohol use and misuse (Sher, Trull, Bartholow, & Vieth, 1999). The consistency of results,

showing that one or another personality factor was responsible for alcohol use, made researchers to hypothesize the existence of an underlying, comprehensive personality factor called the “addictive personality”. Researchers then tried to empirically identify the addictive personality. Unfortunately, research conducted over a period of decades could not confirm the existence of the so-called “addictive personality” (Benjamin & Wulfert, 2005). Although the underlying addictive personality could not be established, studies continued to confirm that certain personality traits relate to patterns of drinking. For example, sensation-seeking has been associated with higher rates of alcohol consumption (Johnson et al., 2001; Youniss & Yates, 1997). There is no agreement regarding the models that are used to study the relationship between personality and alcohol use. Some researchers argue that the method of focusing exclusively on individual personality traits is inadequate for studying the complex relationships between alcohol use and selective personality variables. These researchers recommend that personality be studied in its totality.

In recent times the rediscovery of the Five Factor Model (FFM) has established the study of personality as a global factor and not as individual traits. Wood, Nagoshi, and Dennis (1992) studied the Eysenck Personality Questionnaire scales of impulsivity, sensation seeking, and empathy and extended the work on personality by using the Big Five Inventory (BFI; John, Donalive, & Kentler, 1991). Recent developments indicate that the idea of the “addictive personality” which was pursued without success in the past can now be revived in the context of the FFM.

The FFM is an empirical personality theory, or framework that was formulated in the 1960s. However, Allport and Odbert were the first researchers to identify the trait-descriptive words in the English language in 1936 (Howard & Howard, 1995). Those trait names were then subjected to factor analysis (Digman, 1990; McCrae & John, 1992; Tupes & Christal, 1992). The FFM argues that there are five factors that are sufficient as a measure of an individual’s personality. This theory has been widely accepted, and has been found to be useful in describing globally representative personality traits (Costa &

McCrae, 1992; Goldberg, 1992). It would be valuable to correlate any of the FFM measures with alcohol use scales, to see if there will be a significant relationship between the two variables in a South African student population.

## 1.2 **Statement of the problem**

The present study uses the FFM to predict the use of alcohol among students in a South African university. There are studies that have used the FFM to predict risk behaviours, including the use of alcohol among students. However, most of them concentrate on the domain factors. While this level of analysis is important, it is equally important to study the facet levels as described by the FFM. Using the NEO PI-R, the facet-level factors of personality will be related to alcohol use, so that a better understanding of the relationships will be established.

Furthermore, the present study recognizes that the relationship between personality and alcohol use is not linear. In fact, Vaillant (1983) found moderate drinkers to be behaviourally well-adjusted than heavy alcohol drinking individuals. Parenting may influence the development of personality factors that lead to the use or misuse of alcohol (Andrews, Hops, Tildesley, & Harris, 1993).

## 1.3 **Background of the study**

Past research has focused on singular personality factors such as conscientiousness, aggression, sensation-seeking, and impulsivity in relation to the use of alcohol (Aneshensel & Huba, 1983; Cook, Young, Taylor, & Bedford, 1997; Hovarth & Zuckerman, 1993; Leonard, Collins, & Quigley, 2003; Wills, Sand, & Yeager, 2000; Youniss & Yates, 1997). Some studies used two or more personality traits (e.g. Caspi, Begg, Dickson, Harrington, Langley, Moffitt, & Silva, 1997). This approach however, has some limitations because an individual's personality cannot be dominated and influenced by a single trait. It is also likely that various aspects of an individual's

personality will interact and influence one another. Using single or selective personality factors makes it difficult to see the relationships that may be there between personality and different types of behaviours, especially alcohol use. To overcome the limitations of using single personality variables to predict alcohol use, it is necessary to measure personality as a whole. This line of thinking has been demonstrated in a number of studies (e.g. Miller, Lynam, Zimmerman, Logan, Leukefeld, & Clayton, 2004; Trobst, Wiggins, Costa, Herbst, McCrae, & Masters III, 2000). The present study therefore, follows this line of research by using a comprehensive measure of personality traits to evaluate the association between personality and alcohol use among students.

Research has furthermore indicated that the association between personality and alcohol use is not straight-forward of which there might be some other factors intervening between the personality-alcohol relationship and parenting is one such factor. This is because parenting has been found to be influential in promoting the development of normal personality traits (Reti, Samuels, Eaton, Bienvenu III, Costa, & Nestadt, 2002). In addition, parenting has been related to problem behaviours and alcoholism (e.g. Allen, Hauser, & Borman-Spurrell, 1996; Bernardi, Jones, & Tennant, 1989).

#### 1.4 **Aim of the study**

The present study is significant in that it investigates personality factors at a different level, namely, the facet level. Much is known about the domain level aspects of personality and their relationship with problem behaviours. For instance, the FFM was studied in relation to smoking (Terracciano & Costa, 2003) and sex (Heaven, Crocker, Edwards, Preston, Ward, & Woodbridge, 2003). The main aim of the present study was to focus on the facet level of personality in relation to alcohol consumption, an uncommon approach among researchers. It was also important to control the parenting variable in order to investigate how parental bonding influences the relationship between personality and alcohol use in the current population.

### 1.5 **Motivation of the study**

Only a few studies have been conducted till date to compare personality traits for alcohol using and non-alcohol using students, especially in South African universities, using the NEO PI-R as the instrument to measure the “Big Five” model of personality (e.g. Heuchert, Parker, Stumpf, & Myburgh, 2000). Knowing the FFM traits that can predict the use and non-use of alcohol among university students will help to find strategies to reduce the consumption of alcohol among vulnerable students at the University of Limpopo. The researcher was also curious to establish those traits that can predict the use of alcohol. In addition, the relationship between alcohol and personality is not a straightforward, cause-effect relationship (Andrews et al., 1993). There was a need to investigate the contributions of early parenting experiences to the development of alcohol use in a non-clinical sample of students, especially since the association has been found to exist in clinical groups.

### 1.6 **Need for the study**

There are very few studies on the FFM and alcohol use in South Africa. Research that has been conducted between personality (using the FFM) and alcohol use tends to suggest that the relationship is significant. There was a need to study such a relationship in South Africa, so that the personality factors related to alcohol use among African students will be known. Another variable to study is early parenting and it will be interesting to study it in South Africa; especially because parenting in the African cultural context may differ from parenting in other cultures.

### 1.7 **Area of the study**

The study was conducted among students at the University of Limpopo, Turfloop Campus. The University is situated in the Mamabolo area, 30 kilometres east of Polokwane, the seat of the Limpopo Province government.

## 1.8 Objectives of the study

**The objectives of the study are enumerated as follows:**

- 1.8.1 To establish the personality traits that can predict and differentiate between Abstainers, Moderate drinkers, and Heavy drinkers.
- 1.8.2 To have a clearer understanding of the relationship between facet scales of Neuroticism (N) and alcohol consumption.
- 1.8.3 To have a clearer understanding of the relationship between facet scales of Extraversion (E) and alcohol consumption.
- 1.8.4 To have a clearer understanding of the relationship between facet scales of Openness to experience (O) and alcohol consumption.
- 1.8.5 To have a clearer understanding of the relationship between facet scales of Agreeableness (A) and alcohol consumption.
- 1.8.6 To have a clearer understanding of the relationship between facet scales of Conscientiousness (C) and alcohol consumption.
- 1.8.7 A further objective of the study was to investigate the role that parenting plays in the relationship between personality and alcohol use.

## 1.9 Definition of concepts

- 1.9.1 **Five Factor Model:** An empirical theory or framework of personality. It posits that there are five primary factors that explain all aspects of human personality.

- 1.9.2 **Abstainers:** Individuals who report that they have not consumed an alcoholic beverage in the last six months, and have never before drunk alcohol with the intention of getting drunk and take less than one drink per session (Engs, 1975; Laukkanen, Shemeikka, Viinamaki, Polkki, & Lehtonen, 2001).
- 1.9.3 **Moderate drinkers:** Individuals who drank less than once per month in the past six months, or up to four times per month, and have drunk in order to be drunk at least once, or up to three times, in a month and take two to four drinks per session (Engs, 1975; Laukkanen et al., 2001).
- 1.9.4 **Heavy drinkers:** Individuals who, in the past six months, drank at least five to ten times, and have drunk to be drunk at least four times, to more than ten times, in a month and drank five to more than six drinks per session (Engs, 1975; Laukkanen et al., 2001).

#### 1.10 **Chapter outlay**

Chapter One gives a brief overview of the study, outlines the objectives based on the research problem and also includes a definition of relevant concepts. The next chapter (Chapter Two) comprises of extensive reviews of literature regarding existing aspects of the present study such as the FFM in relation to alcohol use amongst university students. It also reviews the influence of parenting on the relationship between personality and alcohol use. Chapter Three discusses and explains the methodological aspects of the study such as the research design, description of the population, sampling method, as well as the instruments and the procedures used. The results are presented in Chapter Four which includes the classification of the participants according to their rates of alcohol consumption, the FFM aspects of personality in relation to alcohol use, prevalence of risky drinking by parental attachment and prevalence of risky drinking by risk behaviour. In Chapter Five a discussion is presented of the research questions, hypotheses and literature review. Finally, Chapter Six is the conclusion in which implications of the results, limitations of the study and recommendations of future research are outlined.

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 The Five Factor Model (FFM)

The interest in the relationship between personality and risk behaviours has been studied for some time. However, studies were hampered by the lack of a comprehensive measure of personality and one of the goals of psychology has been to establish a model that can conveniently describe human personality (Popkins, 1998). Recent research on the relationship between personality and various risk behaviours has gained momentum because of the development of the FFM (Trobst et al., 2000).

##### 2.1.1 Historical background of the FFM.

The FFM is an empirical personality theory (or framework) that was formulated in the 1960s, but disappeared from research immediately thereafter. According to Howard and Howard (1995), language is the one ingredient that all theories have in common. So, a metaphor that describes personality (FFM) was extracted from language itself. In 1936 Allport and Odbert were the first researchers to identify the trait-descriptive words in the English language. About 4500 words have served as the primary starting point of language-based personality trait research during the last sixty years.

There are many other researchers who were involved in the construction of the FFM as well (Digman, 1990). Raymond B. Cattell was one of them. He took over the work of Allport and Odbert on personality traits in the 1940s. Cattell identified sixteen primary factors of personality, and five second order factors. Another researcher was Fiske (1949) who suggested that there are five factors that can be accounted for in the description of personality, not sixteen as R.B. Cattell found. Fiske identified *Social Adaptability*, *Conformity*, *Will to Achieve*, *Emotional Control*, and *Inquiring Intellect* as the five



factors fundamental to the explaining of personality.

However, other researchers (e.g. Tupes & Christal, 1961) were unable to locate the sixteen complex factors that Cattell suggested. Reanalyzing the earlier work of Cattell that was based on published correlations and Fiske's correlations, Tupes and Christal (1961) singled out the following five factors *Surgency*, *Agreeableness*, *Dependability*, *Emotional Stability*, and *Culture*. Unfortunately, their results were published in an obscure Air Force publication that was not accessed by the wider community of personality researchers, psychologists and academics, so that the results remained unknown (Digman, 1990; Howard & Howard, 1995).

At the University of Michigan, Warren Norman obtained knowledge about Tupes and Christal's (1961) contribution to the FFM. Norman (1963) replicated their work and confirmed the five factor structure for trait taxonomy. The discovery was brought to the mainstream of academic psychology and was known as "Norman's Big Five", while it should be called "Tupes and Christal's Big Five." Most of personality researchers confirmed Norman's findings (Howard & Howard, 1995). Borgatta (1964) and Smith (1967) also corroborated the work of Fiske, Tupes, and Christal. Borgatta devised a set of behaviour descriptors for peer rating to reflect the five factors singled out by Tupes and Christal (1961) and found them to be stable. His labelling of the traits was *Assertiveness*, *Likeability*, *Emotionality*, *Intelligence*, and *Responsibility*. Smith (1967) also established that the five factors were relevant by using Cattell's bipolar scales for college students (Digman, 1990).

Goldberg (1981) reviewed some of the studies conducted by past researchers on the foundation of the Big-Five (e.g. Cattell, 1957; Eysenck, 1970; Guilford, 1975; Norman, 1963; Tupes & Christal, 1961) and singled out with six factors instead of five. Goldberg (1981) was supported by Hogan (1983) and Brand (1984) concerning the existence of the six major dimensions. The difference between the Five Factor Model and the Six Factor Model is that the Extraversion dimension is divided into Sociability and Activity. In the

Hogan Personality Inventory (HPI; Hogan, 1986) Extraversion is divided into *Ambition* while *Sociability* and the other traits are *Likeability*, *Prudence*, *Adjustment*, and *Intellectance*.

From the 1980s until present, many personality researchers have established the FFM as a paradigm for personality research. It appears that many researchers have supported the evidence of the FFM as being useful in describing personality. However, there was still a need to clearly define what these factors were (Popkin, 1998). Eysenck, as one of the contributors to the development of the FFM, felt that, due to overlaps in the five factors and their correlates, a Three Factor Model was more appropriate. He constructed his three-factor theory based on the factors of *Extroversion-Introversion*, and *Neuroticism* (E-IN; Eysenck, 1991). Eysenck's model was better known as the PEN.

Although Eysenck did not solve the problem of naming those traits, a large number of psychologists support the Eysenck's PEN model even though the major Big Five dominates the landscape of psychological research. Through extensive debating and experimenting, a general consensus has been reached in the realms of scholarly psychology regarding the labelling of the five factors, and their basic interpretation and value to the analysis of personality (Popkins, 1998).

Furthermore, each of the Big Five dimensions consists of sets of traits that tend to occur together (e.g. Goldberg, 1992). The most commonly accepted "buckets" of traits are those developed by Costa and McCrae (1992). These were applied to both clinical and general populations (Howard & Howard, 1995). Personality theorists use various names to designate the factors. Even so, their essential description is the same. In Costa and McCrae's (1992) version of the FFM, the five primary factors are labelled *Neuroticism*, *Extraversion*, *Openness to Experience*, *Agreeableness*, and *Conscientiousness*, and in each of the domains, there are six facets (Ewen, 1998).

The naming of the traits that are regarded as the “Big Five” wrapped up when researchers wanted to develop instruments that could measure the FFM. But it is important to point out that there is a relationship between Cattell, Guilford, and Eysenck’s systems of personality (Jensen, 1958). For example, when Costa and McCrae (1985) developed an inventory to assess the five factors of personality, they began with an effort to move away from Eysenck’s “Big Two” (Extraversion and Neuroticism). After analyzing Cattell’s 16 Personality Factor Inventory (16PF), Costa and McCrae (1976) pointed out the third scale as “Open versus Closed to Experience”. The three scales (Neuroticism, Extraversion & Openness) were joined by Agreeableness and Conscientiousness which led to the development of the NEO Personality Inventory (NEO-PI).

Digman (1990) states that Costa and McCrae have demonstrated the presence of the FFM in the Eysenck Personality Inventory (EPI; Eysenck & Eysenck, 1964), the Jackson Personality Research Form (PRF; Jackson, 1974), the Myers Briggs Type Indicator (MBTI; Myers & McCauley, 1985) and the California Q-Set (Block, 1961). The Minnesota Multiphasic Personality Inventory (MMPI; Hathaway & McKinley, 1951) was found to contain only four domains which are Neuroticism, Extraversion, Agreeableness, and Openness which are all well presented. However, the absence of Conscientiousness was conspicuous.

Even though the FFM defines factors of personality as a whole, a number of researchers (e.g. Paunonen & Jackson, 2000) have criticized the FFM for excluding other dimensions such as *religion, morality, tradition, sexuality or sensuality, masculinity, and femininity*. If such dimensions are able to account for criterion variables which are not accumulated for the Big-Five personality factors, those dimensions need to be considered separately in any comprehensive description of the determinants of human behaviour (Paunonen & Jackson, 2000). Van de Vijver and Leung (2000) argue that the FFM focuses on generalization and a cross-cultural application of the theory and can easily be overrated as cultural diffusion. They concluded that the FFM theory has not yet been sufficiently developed to contribute to the theories that link culture and personality.

Church and Lonner (1998) state that during the past few decades theorists have begun to question the universality of western personality theories and have been examining the role culture plays in the development of personality. So far, research on the relationship between culture and personality has mainly with the macro-level of entire cultural differences or national personality rather than with the micro-level of individual differences and personality. The most influential studies were testing the applicability of western theories in collective societies, focusing on disposition trait theories of personality to identify culture-specific personality traits, and they were focusing on a single factor or structure of personality such as locus of control, achievement motivation, field-independence, and anxiety (Church & Lonner, 1998).

Although there are researchers who criticize the FFM (e.g. Block, 1995; Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989; Paunonen & Jackson, 2000; Van de Vijver & Leung, 2000), studies reveal that the FFM can be useful in clinical settings, different cultural and social settings, and on predicting engagement in a number of risk and/or problem behaviours (Ball, Rounseville, Tennen, & Kranzler, 2001; Costa & McCrae, 1992; Goldberg, 1992; Lyman & Widigar, 2001; Miller et al., 2003; Trobst et al., 2000). For example, the FFM was studied in relation to smoking (Terracciano & Costa, 2003) and sex (Bornstein & Cicero, 2000; Heaven, Crocker, Edwards, Preston, Ward, & Woodbridge, 2003; Heaven, Fitzpatric, Craig, Kelly, & Sebar, 2000). In addition, various researchers have found the FFM theory as cross-culturally usable (e.g. McCrae & Costa, 1997; Yoon, Schmidt, & Ilies, 2002). However, most researchers who use the FFM tend to focus on domain factors rather than the facets of personality.

## 2.2 **Students and alcohol use**

Nearly half of the United States of America's scholars are binge drinkers, while drinking is considered the number one problem on numerous campuses (Temple, 1998). Similarly, in South Africa drinking has always been associated with some college rites of passage, and risky drinking at universities throughout the country is common (Lizza, 1998; Peltzer & Phaswana, 1999). This trend has also been demonstrated by Prendergast (1994) who

states that young students are at high risk in terms of risky drinking. University students are in a period where they are no longer under direct parental supervision, while being faced with new social and academic pressures. Wherever, they enter an environment where the use of intoxicating substances, especially alcohol, is normative and culturally acceptable.

Matthews (2004) mentions that drinking is intrinsic to student culture. Harvard researchers reported that most college students are binge-drinkers. Universities have anthems they sing when drunk and perform some rituals and first year students report being drunk during their first welcoming week. In the United States of America 85% of students found themselves surrounded by drinkers (Temple, 1998). In contrast to universities abroad, Peltzer and Phaswana (1999) found that the prevalence of risky drinking was relatively low at 41.5% among University of Limpopo students.

Alcohol consumption is a culture to students abroad and students catch up with such a habit because being drunk is common (Matthews, 2004). Most students who drink report that alcohol is easily accessible on campuses and nobody talks to them about it (alcohol), not even non-drinkers. Some even mention that alcohol is the way of life and it would be hard for them to imagine university life without alcohol. Parents do not acknowledge the fact that their children have drinking problems on campus because students living at home tend to drink less. The binge-drinking culture is consistency immense at universities. It will take an enormous and comprehensive effort to change it. Whether students drink or not they have to negotiate the culture of alcohol consumption (Holder, 1998; Temple, 1998; Valliant & Scanlan, 1996).

Parry and Bennetts (1998) state that students who engage in frequent alcohol use reported that drinking is an important part of their sense of self. For non-drinking groups, the negative consequences of engaging in the binge-drinking appeared to outweigh the drinking group. They seemed to be more inclined towards achieving longer-term objectives than the other group and many had had bad experiences with alcohol. Most of the abstainers had a negative attitude towards drinking alcohol. The other group appeared

to be far more motivated to comply with parental wishes and reported difficulties in abstaining from alcohol consumption (Parry & Bennetts, 1998). Beliefs and expectancies held concerning the effects of alcohol clearly influence the decision to use or not to use alcohol (Barkin, Smith, & DuRant, 2002; Nevid, Rathus, & Greene, 1997).

There is a perception that racial stereotypes are the inference of biological account for behaviour of certain races. For instance, a significantly higher percentage of men, whites, and first year students who binge drink have been observed (Engs, Diebold, & Hanson, 1996). Chambwe, Slade, and Dewey (1983) also found a similar trend of higher levels of consumption amongst European students compared to Africans. Although, only a few studies have been conducted in South Africa regarding different races and language groups but, there are arguments regarding a great difference in the consumption of alcohol considering these factors. For example, Parry and Bennetts (1998) observed a lower level of binge-drinking amongst young Xhosa speaking Blacks compared to Afrikaans and English speaking White, Coloured and Indian South African students.

Pillay, Roberts, and Rule (2006) also revealed a similar trend of alcohol consumption difference between diverse racial groups in South Africa. They mention that there were a 67% of Abstainers among Black and Indians, followed by the Coloureds with 55% while Whites had the lowest percentage of Abstainers (29%). The remaining percentages on each group were for drinking were Blacks represented 25% of those who reported drinking sometimes or were Moderate drinkers and 8% of those who drank often or were Heavy drinkers. Amongst the Coloureds there were a 37% of Moderate drinkers and 8% of Heavy drinkers. The Indians were the group with the lowest percentage of Heavy drinkers (3%) with 30% of Moderate drinkers. The highest group with Heavy drinkers were the Whites (12%) and 59% of Moderate drinkers (Pillay et al., 2006).

The figures suggest that the incidence of alcohol consumption is most predominant amongst Whites. Consequently, researchers have speculated that this could be due to higher income rates amongst White South Africans. Other factors could be different

attitudes to, and preference for, alcohol across different groups. In communities where consumption is frowned upon, there are likely to be more abstainers, as well as more people reporting they do not drink when they actually do (Pillay et al., 2006).

The Department of Psychiatry at the University of Cape Town and the National Urbanization and Health Research Programme at the South African Medical Research Council (MRC) did a study about binge-drinking in schools and found that binge-drinkers appeared to focus on positive outcomes of drinking while negative ones are ignored. They tend to focus more on short-term gratification than those who are not drinking. The binge-drinkers also lack motivation to comply with parental wishes and had little obstacles abstaining from alcohol and did not have serious moral objections to binge-drinking (Parry & Bennetts, 1998). According to Schulenberg and Maggs (2001), once at college, students may suddenly have a greater level of personal freedom than responsibility, and more peers in the same situation, thus providing an opportunity for casual substance use to be transformed into frequent heavy use.

Studies have tended to report relatively little difference from the first through the fourth year on alcohol consumption in different academic levels (Engs, 1977; Glassco, 1975; Hanson, 1974; Hockhauser, 1977; Penn, 1974). Engs (1982) states that final-year students have significantly different drinking patterns compared to first-entering students. For instance, final-year students drink less than first-year student, which may suggest that students change their drinking patterns as they mature. This may be due to increased age or adaptation to peer influences as they go through tertiary education (Engs, 1977; McKay, Hawthorne, & McCartney, 1973; Singh & Singh, 1979; Wechsler & McFadden, 1979).

Wechsler and Nelson (2001) indicate that students lack knowledge about alcohol consumption and they were never exposed to such information in terms of its effects and consequences. This remains a major reason for college students to engage in risky drinking. Phaswana-Nuntsu (2002) adds by mentioning that drinking may be caused by ignorance of the effects of alcohol. In fact, the alternative explanation to risky drinking

may be that people who engage in risky drinking do not correctly weigh the health/lifestyle advantages and disadvantages despite being knowledgeable (Wechsler & Nelson, 2001).

Whether or not a student can resist the urge to drink too much in settings where alcohol is present, it also depends on the role of demands and stresses in the immediate situation and on the support available from other people or reference groups. For example, acceptance by peers is very important for the first and second-year traditional-age students (Chickering, 1969). Many students lack the necessary self-confidence and maturity to make appropriate decisions when conflicts arise, such as requesting a non-alcoholic beverage at a party. Hence, using alcohol in public settings is often an expression of a need for approval and acceptance (Oetting & Beauvais, 1986).

According to Nevid, Rathus, and Greene (1997), cultural, social and religious factors are also related to the consumption of alcohol. Attitudes towards substances, peer groups, religion, political radicalism, and adherence to general conventional values have been found to be important factors in relation to risky drinking (Spruit & Jurijen, 1999). Johnson et al. (2001) argue that motives vary in terms of either expecting a positive outcome or not or just avoiding a negative outcome while non-drinking motives mostly involved religious and spirituality factors. There are also reports indicating that there is a significant relationship between the lack of importance of religion and frequent alcohol drinking (Blane & Hewitt, 1977). In contrast, other researchers have argued that there is no relationship (Banks & Smith, 1980; Wechsler & Rohman, 1981).

Wechsler, Davenport, Dowdall, Moeykens, and Castillo (1994) established that students who regard religion as important are significantly likely to reduce the frequency of risky drinking. There are several researchers who have supported the significant relationship between religion and alcohol consumption (e.g. Engs, Diebold, & Hanson, 1996; Greenfield, Guydish & Temple, 1989; Patock-Peckham, Hutchinson, Cheong, & Nagoshi, 1998; Wechsler et al., 1994). However other researchers deny the existence of



such a correlation (Banks & Smith, 1980; Wechsler & Rohman, 1981).

Perkins (1985) suggests that religiosity may protect individuals against risky drinking. However, the relationship between religion and the development of heavy or risky drinking is not clear. Thus, despite whatever protective effects, risky drinking still occurs among highly religious students. In spite of religious affiliations, students sometimes succumb to peer-pressure to drink rather than to follow religious prescriptions against such behaviour (Perkins, 1985).

According to Holder (1998), alcohol consumption is a culturally influenced behaviour which reflects perceived social encouragement or the restriction of alcohol consumption. The increase or decrease of alcohol drinking depends on the extent to which norms promote or limit alcohol use. Drinking is supposed to be a social act in which an individual's drinking habits are largely defined and determined by the drinking habits of others. A community's drinking norms may change over time as the proportions of the people belonging to religious groups with proscriptive norm changes. The way in which people behave and feel when drinking, is influenced by what they believe they should feel, and this is determined by culture and what is taking place in the immediate environment (Bewley, 1986).

Just like other behaviours, consumer behaviour is affected by cultural and social values and norms. The values are not inherited but assigned according to cultural factors. Countries differ in terms of alcohol consumption not because of differences in the price or physical availability of alcohol but because of differences in social values and norms about drinking (Holder, 1998). Parry and Bennetts (1998) state that traditional African beer has played an important role in the cultural and religious lives of Black South Africans for many centuries, just as the other alcoholic beverages have done in other parts of the world. Various religious ceremonies and feasts in which beer was drunk were not recorded in the oral and written histories of black people. Drinking has always been ceremonial on special occasions such as funerals and religious feasts or marriages. For

example, children, teenagers, and women of childbearing age were allowed to consume alcohol on religious occasions (Gumede, 1995).

Madu and Matla (2003) state that there is a higher rate of male drinking students than females and the reason is that traditionally, alcohol use and risky drinking have mainly been linked to rather male than female students due to the influence of moral values and gender socialization. Peltzer and Phaswana's (1999) study on substance use among South African university students found that the prevalence rate for alcohol use was 57% in male and 26% in female students. Although drinking has traditionally been mainly a male phenomenon, females are increasingly becoming drinkers (Rocha-Silva, de Miranda, & Erasmus, 1996).

There is evidence that normative perceptions are an individual risk factor for risky drinking. This means that higher perceived norms of alcohol consumption are associated with higher levels of drinking and alcohol related problems (Perkins & Wechsler, 1996; Thombs, Wolcott, & Farkash, 1997; Wood, Nagoshi, & Dennis, 1992). Perkins and Wechsler (1996) state that perceived norms for risky drinking predicted risky drinking most strongly among students. Thus perceived norms for drinking may justify risky drinking only under conditions where more accepting social attitudes already exist. If students hold permissive attitudes toward drinking, they may not be deterred by the fact that they are heavy drinkers.

According to Phaswana-Nuntsu (2002), the University of Limpopo environment appears to support risky drinking because alcohol is easily available. The level of exposure to substance-using peers appears to condition the association between family structure and adolescent substance use (Visser & Moleko, 1999). In contrast, Peltzer, Seoka, and Mashego (2003) found that low-risk perception about alcohol is strongly associated with high risk alcohol consumption. By contrast, surveys on selected graphs of the youth abroad show that perceptions of potential harm from the substance may be associated with reduced use of that substance or drug (Abot, 2003). There are large sections of the

population who abstain from alcohol use due to cultural or religious norms or personal choice. But there is a high consumption of up to one-third which engages in risky drinking often leading to high levels of intoxication in South Africa (Medical Research Council, 1998). In addition, previous studies on culture change and alcohol used have suggested that there is an increase in alcohol consumption associated with westernization and modernization (Onya, 2005).

Walton and Roberts (2004) identify two types of abstainers, namely, those who have never consumed alcohol or used drugs, and those who currently refrain from using intoxicating substances because they are recovering from an abuse problem or addiction. It is certainly conceivable that the various proportions of these two types of abstainers across studies could lead to contradictory findings.

Matthews (2004) established that the number of students who were drinking was more than those who were not drinking. Those who consumed alcohol gave the following reasons for such behaviour namely for fitting into a group, the need to prove masculinity and adulthood, the high levels of unstructured free time available, and the promotion of alcohol to students or media. Peltzer (2003) conducted a study regarding drinking motives amongst South African students and discovered that social motives dominated, followed by coping motives especially first-time entering students. There is a variety of explanations regarding the use of alcohol in general and amongst university students of which personality has been identified as one (Ruiz, Pincus, & Dickinson, 2003).

### **2.3 Personality and alcohol use**

Robins et al. (2001) state that young adults usually move away from home for the first time especially during their tertiary education and during these years some of their personality traits seem to change while some remain consistent. But researchers such as Costa and McCrae (1994) argue that personality is set like a plaster by the age of 30, although using the FFM, Robins et al. (2001) found that some personality traits seem to change while some remain consistent.

Personality has much to offer in the study of risky behaviours. Unlike attitudes, motives (Theakston, Stewart, Dawson, Knowlden-Loewen, & Lehman, 2004) and intentions which are behaviour specific, personality refers to broad dispositions and may help explain the reason why the same individuals engage in risky sex, criminal behaviour, and substance use. Personality is quite stable over long periods of time (e.g. Roberts & DelVecchio, 2000) which makes the early identification of at risk individuals possible (Miller et al., 2004). However, researchers such as Watson and Walker (1996) argue that there are meaningful changes in personality during the stage of life when individuals go to tertiary level. Some students may then start to consume alcohol. Based on twin studies of personality, as defined by the Eysenck Personality Questionnaire (EPQ), Pickering, Farmer, and McGuffin (2004) indicate that genetic factors and environmental factors interact in the development of personality.

According to Bewley (1986), vulnerable personalities find alcohol functionally useful as a nerve drug to cope with life. He also states that there is no alcoholic personality instead there is a relationship between personality disturbance and alcohol misuse. Bewley (1986) claims that alcohol contributes to personality problems rather than the other way around. This analysis is augmented by the Japanese proverb: “first a man takes a drink, then he takes another drink, then a drink takes a drink, then a drink takes a man” (Bewley, 1986). Visser and Moleko (1999) add that the most important reasons for using alcohol among adolescents are to forget their problems.

#### 2.4 **Global personality traits and alcohol use**

Comprehensive models of personality and the Five Factor Model of personality have been utilized to characterize the personality profiles of heavy substance users (Walton & Roberts, 2004). There is a possible relation between global traits and alcohol use. For example, Ruiz et al. (2003) found some relationship between FFM domains and alcohol-related problems. They state that those who use and misuse alcohol score higher on Neuroticism, Extraversion and Openness, and lower on Conscientiousness and Agreeableness domains. In addition, Miller et al. (2004) support the argument that there

is a relationship between FFM facets and risk behaviours.

#### 2.4.1 Neuroticism

Costa and McCrae (1992) mention that Neuroticism evaluates emotional stability and adjustment. Those who score high on this domain are likely or have a tendency to experience negative affects such as fear, sadness, embarrassment, anger, guilt, and disgust (Parry & Bennets, 1998). Negative affect (NA) or Neuroticism (Howard & Howard, 1995) has been positively associated with alcohol use. Those scoring high in Neuroticism consume more substances in their efforts to reduce negative states or increase positive states of feelings (Cooper, Frone, Russell, & Mudar, 1995). In short, Donovan (2004) indicates that alcohol is often used by drinkers as a means of coping with stress, anxiety, or depression. Both anxiety and depression are facets of Neuroticism domain. Given that substance abusers report high levels of trait anxiety and distress, substance abuse behaviour itself may be seen as a form of maladaptive coping skill which serves to reduce negative affect (Blane & Leonard, 1987; Wills & Shiffman, 1985).

Impulsivity too has been associated with the use and misuse of substance. Colder and Chassin (1997) and Holder (1998) found a significant correlation between impulsivity and alcohol consumption in young adolescents and the traits of sensation seeking. Since impulsivity is one of the facets of Neuroticism domain, those who are dominated by or score high on this facet are not likely to resist temptations because they are controlled by their impulses of which they regret later (Costa & McCrae, 1992). Individuals dominated by impulsivity are likely to engage more risky behaviours than those who are not (Holder, 1998). They also tend to have difficulties abstaining from alcohol because they tend to focus more on short-term gratification than those who are not taking alcohol (Parry & Bennets, 1998). On the other hand, low impulsivity suggests less alcohol use and smoking, which may decrease the likelihood of using other illicit substances as well.

Vulnerability is another facet of Neuroticism domain that is related to alcohol consumption. According to Bewley (1986), vulnerable personalities find alcohol

functionally useful as a nerve drug to cope with life. Anxiety-related factors have also been linked to problem drinking. University students who are high in anxiety sensitivity (fear of anxiety symptoms) drink more often, and drink to excess more frequently, than low and moderate anxiety sensitive individuals (Stewart, Zvolensky, & Eifert, 2001).

Aneshensel and Huba (1983) mention that another major psychological factor linked to alcohol consumption is depressed affect which is seen as a cause or consequence. In addition, some studies of alcohol drinkers and non-drinkers reveal that a major motivation of drunkenness is to alleviate depressed mood. Since depression is another Neuroticism facet according to Costa and McCrae (1992), most young people use alcohol because they are sad, anxious, depressed, or have feelings of low esteem. The feelings of depression however, increase with alcohol consumption (Aneshensel & Huba, 1983; Donovan, 2004; Dorus & Senay, 1980). Samuels, Bienvena, Cullen, Costa, Eaton, and Nestadt (2004) mention that individuals who are prone to alcohol related problems and arrest are likely to score high on “angry hostility” (another facet of Neuroticism) and impulsivity.

Although gender has not been taken into consideration in this study, studies reveal that women show a greater propensity to experience Neuroticism (e.g. Nolen-Hoeksema & Girgus, 1994) and both depressed mood and alcohol consumption appear to be more strongly related to female than male adolescents (Locke & Newcomb, 2001) while Neuroticism may place some women at an increased risk for substance use. However, Shedler and Block (1990) mention that abstainers appear to be neither neurotic nor neurotically over-controlled in the domain of Neuroticism.

Interestingly, several researchers have demonstrated that abstinence from substance use is actually indicative of impaired psychological well-being and that moderate use is associated with more positive adjustment. According to Jones (1971), problem drinkers and abstainers seem to portray more similar personality traits than other moderate drinking groups. Vaillant (1983) also noted that abstainers are just as psychologically impaired as alcohol abusers. For example, abstainers and heavy drinkers were found to

display similar negative tendencies such as being withdrawn, pessimistic, and feeling guilty, while both groups display mutual emotional inadequacies (e.g. they are irritable, moody, anxious, and unable to relax). Both these traits of tendencies are related to the Big Five factor of Neuroticism (Jones, 1971). Shedler and Block (1990) also observed that abstainers are generally anxious, a trait also common to heavy users.

#### 2.4.2 Extraversion

Ruiz et al. (2003) state that there is a positive relationship between the FFM domain of Extraversion and alcohol related problems. However, according to Leigh and Stall (1993), certain thrill-seeking individuals may tend to pursue experiences that involve risky sexual behavioural patterns as well as substance abuse.

Leigh and Stall (1993) have proposed a personality-based mechanism, in which alcohol use and risk-taking sexual behaviour may both be indicators of a risk-taking or sensation-seeking personality type. Individuals high in sensation-seeking (excitement-seeking) appear to have a biologically based need for stimulation, an attraction toward risky behaviours, and greater susceptibility to the reinforcing effects of pleasurable stimuli, all of which predispose them toward substance abuse (Cloninger, 1994; Zuckerman, 1993; Zuckerman, Ball, & Black, 1990). Sensation-seeking individuals may be intuitively drawn to the social environment where alcohol and casual sex partners are readily available. Sociability has also been linked to alcohol use amongst students. This statement is based on different findings (Wills, Sand, & Yeager, 2000; Youniss & Yates, 1997).

Miller et al. (2004) also demonstrated that Extraversion is positively related to the number of sexual partners by age 20, using marijuana or alcohol before or during a sexual encounter and an early sexual debut. However, these relations intuitively make sense in that sex is inherently a social activity because it requires a partner. In addition, individuals who are high in Extraversion also tend to be socially dominant and assertive which may be attractive to potential partners and which may make it easier to pursue opportunities for sexual relations.

Holder (1998) states that people participating in social situations that do not involve alcohol are less likely to drink alcohol to be socialable. Extraversion is significantly related to multiple high risk sexual behaviours and substance abuse (Jessor, 1991). High gregariousness and high excitement-seeking traits make significant contributions to risk behaviour (Miller et al., 2004). In contrast to findings concerning this dimension of Extraversion, Rankin, Stockwell, and Hodgson (1982) noted low Extraversion in heavy users of alcohol, while Jackson and Matthews (1988) observed high scores for heavy drinkers on Extraversion and its subcomponents, sociability and impulsivity. Similarly, Trull and Sher (1994) also add that individuals who are likely to abuse substances such as alcohol can be characterized by low Extraversion of the FFM of personality.

According to Shedler and Block (1990), Abstainers usually lack interpersonal skills and seem to avoid close personal relationships altogether. They give the impression of being unsociable, lack social presence (i.e. they are introverted) and empathy, and they have a low tolerance for criticism (Cook, Young, Taylor, & Bedford, 1998; Hogan, Mankin, Conway, & Fox, 1970; Jones, 1971). Abstainers are also described as being emotionally bland (Jones, 1968), submissive, and lacking self-confidence (Cook et al., 1998).

### 2.4.3 Openness to Experience

The dimension of Openness to Experience has also been linked to or associated with alcohol use (Ruiz, Pincus & Dickinson, 2003). It has further been related to several sexual behaviours including having sex without using a condom, having a child at an early age, and having sex at an early age. Stewart and Devine (2000) theorized that high Openness (adventurousness, preference for variety) on the NEO PI-R would predict increased levels of Enhancement-motivated alcohol use. Heuchert et al. (2000) found that there were statistically significant differences in the mean scores of some domains and facets by race in South Africa, especially on the Openness to Experience domain, particularly in the feelings facet. The White subgroup scored relatively high, the Black subgroup relatively low, and the Indian subgroup in an intermediate range. The authors



speculate that these differences are primarily the result of social, economic, and cultural differences between the races rather than the direct product of race itself.

#### 2.4.4 **Agreeableness**

Agreeableness was negatively correlated with both drinking quantity and alcohol problems, a finding consistent with the heavy consumption drinking patterns seen in enhancement drinkers (Cooper, 1994). In essence, further corroborative existing research portrays the abuser of drugs and alcohol as more disagreeable or scoring lower on Agreeableness (e.g. Ruiz et al., 2003; Walton & Roberts, 2004).

An antagonistic interpersonal style, characterized by deceit, distrust, and a general lack of concern for others, was found to be related to having more sexual partners when using alcohol and drugs. Individuals who score low in the Agreeableness FFM domain of personality (being egocentric and/or inconsiderate) were found to be using alcohol more than those who score high (Theakston, Stewart, Dawson, Knowlden-Loewen, & Lehman, 2004). According to Kuppens (2005), this domain of Agreeableness and perceived social esteem are negatively related to trait anger as Samuels et al. (2004) mentioned that angry hostility correlate with alcohol use. However, according to Jones (1971), Abstainers also have difficulty with interpersonal relationships (e.g. they may be hostile, distrustful, inexpressive, and judgmental), which corresponds with being disagreeable in the FFM.

#### 2.4.5 **Conscientiousness**

Miller et al. (2004) mention that Conscientiousness, an individual's tendency to think before acting, consider potential consequences, follow through on moral obligations and duties, and persist in the face of boredom or fatigue, was negatively related to the use of alcohol. Given the element of deliberation, it is not surprising that individuals low in Conscientiousness would use alcohol. Individuals who lack self-discipline and tend to act impulsively might choose to engage in a potentially more dangerous activity (having sex while intoxicated), rather than delaying gratification (i.e. waiting until sober).

According to Kashdan, Velter, and Collins (2005), Conscientiousness mostly buffers against alcohol use. Individuals who are conscientious and low in impulsivity report less alcohol use and smoking, which may decrease their likelihood of using illicit substances. Highly conscientious individuals have greater feelings of personal control and are more apt to pursue and attain meaningful life goals. The greater self-regulatory strength of highly conscientious individuals is expected to offer protection against risky health behaviours (Friedman, Tucker, Schwartz, Martin, Tomlinson-Keasey, Wingard, & Criqui, 1995). Specifically, such individuals have a greater likelihood of exerting self-control when exposed to substances and are therefore, less likely to use them.

Parry and Bennets (1998) state that non-alcohol drinking individuals seemed to be more oriented towards achieving longer-term objectives than alcohol users. Most of the abstainers had a negative attitude towards drinking alcohol and appear to be motivated to comply with parental wishes. Women reported greater conscientiousness than men (Costa, Terracciano, & McCrae, 2001) while Conscientiousness offered a degree of protection against substance use. Low Conscientiousness characterizes individuals who drink alcohol to enhance positive experiences. Such individuals may be at risk for problem drinking owing to their low self-discipline and the tendency to take hasty and irresponsible decisions (Theakston et al., 2004).

In contrast, Walton and Roberts (2004) found that those who abstain from drug and alcohol use are highly conscientious. An extremely high level of Conscientiousness is often seen as maladaptive. In comparison with moderate or heavy drinkers, abstainers have consistently been shown to be highly conscientious, as they outscore moderate or heavy users on measures of responsibility, rationality, and fastidiousness. They also appear to be comparatively highly conservative and moralistic (Hogan et al., 1970; Shedler & Block, 1990).

Several researchers (e.g. Cook et al., 1998; Hogan et al., 1970; Shedler & Block, 1990) have however, noted that abstainers' tendencies towards being highly conscientious and moralistic may become problematic. It appears that abstainers reach a stage of being over

controlled. For example, Shedler and Block (1990) noted that Abstainers have a tendency to unnecessarily delay gratification while other researches have observed abstainers to be inflexible and intolerant (Cook et al., 1998; Hogan et al., 1970). There seems to be a linear relationship between substance use and Conscientiousness and Openness, as abstainers tend to score comparatively high on Conscientiousness and low on Openness, compared to heavy users.

#### 2.4.6 **Summary**

The findings have thus indicated that heavy alcohol use is often related to depression and a tendency to be overly anxious which are related to the Big Five factor of Neuroticism (Skinner & Allen, 1982). In addition to suffering from depression and anxiety, it has been noted that heavy substance users often appear to be impulsive (Holder, 1998; Labouvie & McGee, 1986; Skinner & Allen, 1982), which is indicative of low Conscientiousness in the FFM (Kashdan et al., 2005; Friedman et al., 1995).

Low Conscientiousness is also positively related to sensation-seeking (Zuckerman, Kuhlman, Joireman, Teta, & Kraft, 1993), which may render these individuals more prone to risky drinking. Research shows that low Conscientiousness with either high Extraversion comprises a personality type associated with risky health behaviours, including alcohol use (Vollrath & Torgersen, 2002). Walton and Roberts (2004) add that alcohol abusers are likely to score lower on Agreeableness. As mentioned earlier that personality can not be dominated by a single trait; these findings indicate that the FFM domains of personality cooperate, influence, or interact with one another in order to result in certain risk behaviours such as alcohol consumption.

#### 2.5 **Parenting and other risk behaviours in relation to alcohol use**

According to Andrews et al. (1993), the association between personality and alcohol use is not straightforward or linear. There may be a number of causal paths leading to the use of alcohol. Parenting may influence the development of personality factors that can result in the use or misuse of alcohol. It is generally accepted that during childhood, parents are

important facilitators of the socialization process, both by providing examples of behaviours and through their parenting styles. Parents pass along genetic material which appears to impact on many aspects of a child's psychological and social development (Bush, Caronna, Spratt, & Bigby, 1996). In addition, several researchers argue that alcoholic parents are likely to have an offspring who will also abuse alcohol based on genetics and biological factors (Eitle, 2005; McGue, 1999; Nevid, Rathus, & Greene, 1997; Slutske, Heath, Madden, Bucholz, Statham, & Martin, 2002; Stice, Barrera, & Chassin, 1998).

Parenting makes some contributions to the individual's personality development (Pincus & Ruiz, 1997; Reti et al., 2002). Based on studies of parenting, the experience of high levels of denial of autonomy and low levels of parental care have been found to be associated with low Conscientiousness and high levels of Neuroticism in children. The experience of Neuroticism may lead to problem behaviours, including the abuse of substances. According to Farrell and White (1998), the quality of parent and child attachment has been found to be significant predictors of teen alcohol, tobacco, and drug use. Parenting style has also been associated with many forms of psychopathology in offspring. For instance, affectionless control (the combination of parental low care and overprotection) has been associated with schizophrenia, borderline personality, conduct disorder, depression/anxiety, and drug addiction (Mohr, Preisig, Fenton, & Ferrero, 1999). Low care has been associated with the severity of bulimia (Sullivan, Bulik, Carter & Joice, 1996) while overprotection has been related with alcoholism and heroin dependence (Bernardi, Jones, & Tennant, 1989).

Mothers who are physically and/or psychologically dependent upon alcohol and illicit drugs are at risk for a wide range of parenting deficits beginning when their children are infants and continuing as their children move through school-age and adolescence. Research on attachment suggests that the emotional quality of mother-child relationships is an important predictor of children's psychological development through school-age and adolescents (Suchman, Mayes, Conti, Slade, & Rounsaville, 2004).

Self-control theory views individuals with a low-self control as the probable result of ineffective or poor parenting. In other words, parents who are not effective in forming an emotional attachment with their child may result in making their attempts to monitor the child's behaviour difficult. Low self-control is likely to manifest itself in several ways. One way is in the form of irresponsible behaviour. For instance, individuals with low self-control are likely to use alcohol and other drugs (Higgins & Marcum, 2005). Research shows that low self-control has a link with alcohol consumption (Piquero, Gibson, & Tibbetts, 2002).

Several studies have revealed that self-control and social learning may be related in complex, mutually reinforcing ways. Social learning theory suggests that binge-drinking is a learned behaviour and the presence of a powerful social tendency reinforces the abuse and the absence of adequate social punishers which may lead an individual's inability to develop self-control (Jacob & Johnson, 1997; Nash, McQueen, & Bray, 2005; Streeter, 1999; Winfree & Bernat, 1998). A lack of self-control among teens is a strong prospective predictor of heavy drinking, tobacco, and other substance use (Sussman, McCuller, & Dent, 2003).

Holder (1998) states that parental approval of alcohol use has also been mentioned as a major fact contributing to the use of alcohol and heavy drinking amongst young adults and adolescents. In addition, greater parental disapproval is associated with less involvement with friends and peers who use alcohol, less peer influence to use alcohol, greater self-efficacy for avoiding alcohol use, and lower subsequent alcohol use, and related problems (Nash et al., 2005). As a result, family interactions, processes, and parenting will be recognized as significant influences on adolescent development, behaviour, and substance use. It is also suspected that the tendency of persons with low self-control to engage in drinking behaviours can be exacerbated or strengthened by exposure to deviant peer associations (Oetting & Beauvais, 1986). One way that this occurs is associating with peers that use alcohol and may help an individual with low self-control discover the "fun" of drinking alcohol (Higgins & Marcum, 2005). An individual may engage in alcohol drinking to satisfy his/her thrill or sensation-seeking

needs, because of a low self-control (Copper, 2002).

Pickering, Farmer, and McGuffin (2004) indicate that environmental factors such as the experience of parental care in childhood interact with genetic factors in the development of personality. They further add that babies who are exposed to maternal depression, often characterized by marked impairments in maternal interactions “such as emotional unavailability,” tend to show long-term effects in the form of antisocial behaviour. This suggests that the experience of maternal emotional unavailability, which is a type of emotional neglect, may have long-term effects on personality. An impulsive and depressed parent is more likely to inflict trauma on his/her children (Kraemer, Kazdin, Offord, Kessler, Jensen, & Kupfer, 1997). Evidence suggests that the effects of deviant parenting styles go beyond childhood behavioural disturbances into adulthood depression and self-destructive behaviour (Pickering et al., 2004).

The Social Developmental Model (SDM) theory hypothesized that children must learn patterns of behaviour, whether prosocial or antisocial. It further hypothesizes that these patterns of behaviour are learned from socializing units of family, school, religious and other community institutions, and peers. Based on these findings, prosocial bonds have demonstrated inhibitory effects on antisocial behaviour (Kemp, 1993; Krohn & Massey, 1980). Therefore, it is argued that the behaviour will be prosocial or antisocial depending on the predominant behaviours, norms, and values held by those an individual is bonded with. As a result, parents, teachers, community members, and peers have a role in modelling the behaviour of alcohol use in the rural communities of South Africa. These units should function as social urgencies (Coplan, 2006; Onya, 2005).

According to Coplan (2006), socialization plays a major role in the development of personality. For instance, in black communities infant care has traditionally been the sphere of mothers, grandmothers, and older sisters. In contrast, many white and middle-class families have part-time or full-time servants who assist with childcare. The employment of servants to rear children exposes children to adult caregivers of other cultures and allows unskilled women to support their own absent children. Impairments

in maternal interactions, such as emotional unavailability tend to display long-term effects in the form of antisocial behaviour. Maternal emotional unavailability may have long-term effects on personality in the white population (Pickering, Farmer, & McGuffin (2004). Thus, parenting styles seem to be meaningful in the development of substance use behaviours over time (Bailey, 1989; Petraitis, Flay, & Miller, 1995; White, Johnson, & Buyske, 2000).

The African extended family system provides a range of adult caregivers and role models for children within the kinship network. African families have shown resilience as a socializing agency, but repression and poverty have mostly damaged the traditional family structure among the poor. Middle-class families of all races socialize their children after the example of suburban Europeans. Black Africans strongly mark social categories of age, gender, kinship, and status in their etiquette. Particular honour and pride of place are granted to age, genealogical seniority, male adulthood, and political position. Rural Africans still tend to practise formal and even elaborate forms of social greeting and respect (Coplan, 2006).

There is an abundance of published material on the comparison between Collective and Individuated personalities (e.g. Sue & Sue, 1999; Triandis, 1995). Most of this work considers the collective personality as a trait or type rather than an interpersonal dynamic structure that helps to understand and predict individuals' behaviour. For instance, individualistic cultures put the individual first, then the community. On the other hand, the collectivistic cultures put the community first, then the individual. According to Matsumoto (2000), members of individualistic cultures regard themselves as separate and autonomous individuals, whereas members of collectivistic cultures see themselves as fundamentally connected with one another. In individualistic cultures, personal needs and goals come first while in a collectivistic culture individual's needs are sacrificed to satisfy the group.

Africans have a cultural background and value system with possibly a more collectivistic orientation. In contrast, traditional Western cultural background is more

individualistically orientated (Eaton & Louw, 2000). However, these cultures can be shifted from Collectivism to Individualism or the other way round by various factors. For instance, Leong (2001) states that when cultures come into contact it is inevitable that some cultural change will occur among the groups in contact. In South Africa the level of nutrition, empowerment and training could have an effect on Individualism and Collectivism. University students are typically more exposed to Individualism than are members of the general population (Eaton & Louw, 2000).

According to Dwairy (2002), these differences in needs, emotions, values, and social behaviour actually cover almost the whole space of personality, and as such, should be construed as more than a trait of personality to help understand individual differences. This sophistication calls for a dynamic explanation of personality that acknowledges the major roles of family, society, and culture. Hence, there is a lack of psychosocial dynamic personality theory that defines constructs and processes that explain and predict the behaviour of people who possess a collective, un-individuated personality.

Based on the suggested conceptualization of personality, test batteries of personality should be reconsidered. The level of individuation psychological interdependence is the main variable that should be evaluated. This evaluation should reveal the proportion between the social and private layer of personality and the contexts in which each layer is activated, the coping social skills used, and their efficacy. If the client is not individuated from the family, evaluating the social layer is crucial to the understanding and prediction of the individual's social behaviour (Dwairy, 2002).

There is a need for new instruments and techniques that could assess relevant constructs (e.g. norms, values, roles, social authority, coping skills, and social defence mechanisms), and to understand the individual within his/her familial and social contexts. Huebner and Howell (2003) point out the importance of recognizing that parenting processes are influenced by a range of social factors including cultural values, access to resources, education, socioeconomic status, and neighbourhood safety. Lastly, these cultural and parenting factors can contribute to alcohol consumption behaviour.



Sexual risk-taking has been studied with parenting in terms of parenting styles. Huebner and Howell (2003) found a direct effect of parenting style on the level of sexual risk-taking. Based on Jackson's (2002) findings, they also add that there is a strong association between general parenting style and perceived parental authority regarding tobacco and alcohol use which supports White et al.'s (2000) point. The increase in the number of sexual partners that is associated with frequent intoxication may reflect a sensation-seeking personality type, or it may reflect the overlapping social environments of drinking and encountering casual sexual partners.

Although Stice, Barrera, and Chassin (1998) state that young adults got into deviant behaviour across a variety of settings and certain problems regardless of their alcohol consumption level, literature suggests that sex and smoking risk behaviours tend to co-occur with alcohol use (e.g. Farrell & White, 1998). For instance, some studies have found a relationship between parenting and adolescent smoking (Terracciano & Costa, 2003), and in some instances the relationships can be complicated (see Jessor, 1991).

The evidence of the relationship between alcohol use and risk behaviours such as sex and smoking has been demonstrated by Guo, Chung, Hill, Hawkins, Catalano, and Abbot (2002) who found that binge-drinkers have significantly more sexual partners, have higher probability of inconsistent condom use, and are likely to initiate sexual behaviour as well as alcohol and marijuana use earlier than abstainers. Several researchers also confirmed similar trends (Graves, 1995; Leigh & Stall, 1993; McEwan, McCallum, Bhopal, & Madhok, 1992; Thompson, Kao, & Thomas, 2005).

However, if the basis for the association between alcohol use and risky sexual behaviour is the direct effect of alcohol one might expect that condom use, which requires preplanning and impulse control, would be decreased among individuals who experience frequent alcohol intoxication. With alcohol use, it appears that high levels of Conscientiousness directly buffer against it. This also appears with smoking (Kashdan, Velter, & Collins, 2005). To prevent risky sexual behaviour, attention should thus be paid to binge-drinking and marijuana use amongst adolescents (Guo et al., 2002).

In summary, findings have indicated that that sex and smoking risk behaviours tend to co-occur with alcohol use (e.g. Farrell & White, 1998; Guo et al., 2002). The significance of parenting as the mediator between the personality and risk behaviours such as alcohol consumption relationship has also been reflected by several researchers (e.g. Andrews et al., 1993; Terracciano & Costa, 2003).

## 2.6 Hypothesis

Based on the literature (e.g. Kashdan et al., 2005; Ruiz et al., 2003), the following hypotheses will be tested:

- Hypothesis 1:** There is a positive relationship between the facet scales of Neuroticism (N) and alcohol consumption.
- Hypothesis 2:** There is a positive relationship between the facet scales of Extraversion (E) and alcohol consumption.
- Hypothesis 3:** There is a positive relationship between the facet scales of Openness to experience (O) and alcohol consumption.
- Hypothesis 4:** There is a negative relationship between the facet scales of Agreeableness (A) and alcohol consumption.
- Hypothesis 5:** There is a negative relationship between the facet scales of Conscientiousness (C) and alcohol consumption.
- Hypothesis 6:** Parenting will moderate the relationship between personality traits and alcohol use.

## CHAPTER 3

### METHOD

#### 3.1 Research design

The researcher used a questionnaire, within a cross-sectional design to gather the required data. Alcohol use was the dependent variable, personality the independent variable and parenting the control or moderating variable.

#### 3.2 Description of the population

The population of the study consisted of registered students of the University of Limpopo, Turfloop Campus. The University has a predominantly African student body, and attracts students from both rural and urban backgrounds. There are only few non-African and foreign students (less than 2%). The next table (Table 1) shows the description and demographics of the participants with regard to the participant's gender, mean age, domicile, and number of people they are staying with at their houses.

**Table 1: Demographic information of the participants.**

Demographics		Mean	N	%
Gender*:	Male		149	(49.8%)
	Female		150	(50.2%)
Mean age		20.53 (SD = 4.046)	300	(100%)
Domicile:	Urban		217	(72.0%)
	Rural		83	(28.0%)
Mean number of people in the house		6.94 (SD = 2.853)	300	(100%)

Note: \*1 value missing

Two hundred-and-seventeen (72%) of the participants came from a rural home background, while 83 (28%) were urban-based. They were between the ages of 17 and 46, with a mean age of 20.53 (SD 4.046). Out of the 299 who mentioned their gender, 150 (50.2%) were females and 149 (49.8%) males. Although the NEO PI-R has been used across social and cultural contexts, these can sometimes affect the results of personality tests. For this reason the sample of this study was, as a precaution, limited to Africans. In fact, Heuchert et al. (2000) found that South African students of different “races” tended to endorse different traits on some of the scales of the NEO PI-R.

### 3.3 **Sampling method**

The sampling method applied in this study was non-probability sampling. Specifically, non-probability convenience sampling was used. It is close to *accidental* or *incidental* sampling. This sampling method is economic and not difficult to conduct. It saves time and money.

### 3.4 **Instruments**

#### 3.4.1 *NEO PI-R (Costa & McCrae, 1992)*

The scale was developed by Costa and McCrae (1992), namely, the Revised NEO Personality Inventory (NEO PI-R) which is among the best-known and widely used FFM scales (Widiger & Trull, 1997). In recent times, the NEO PI-R has become one of the leading instruments in the studies that assess personality. It is a 240-item self-report questionnaire designed to operationalize the FFM. This instrument measures the five dimensions of personality, namely, Neuroticism (N), Extraversion (E), Openness to Experience (O), Agreeableness (A), and Conscientiousness (C). The five factors of the NEO PI-R are reduced further to 30 specific traits, or facets, six for each of the five factors (Costa & McCrae, 1992). The inventory uses a 5-point Likert scale, with responses ranging from strongly disagrees to strongly agree. There is also a short version called the NEO-FFI (NEO-Five Factor Inventory), which consists of 60 items. The

psychometric properties of the short version are less strong than those of the longer version (Fernandez & Castro, 2003; Gullone & Moore, 2000; Schinka, Kinder & Kremer, 1997). Alujah, Garcia, Rossier, and Garcia (2005) found some limitations in the short version when used with samples in Spain and Switzerland. In the current study, the long version of the NEO PI-R was thus used.

Young and Schinka (2001) provided evidence to support the reliability and validity of the NEO PI-R as a research tool. Extensive description of the psychometric properties of the NEO PI-R questionnaire can be found in Costa and McCrae (1992). According to Hendricks, Perugini, Angeiter et al. (2003), the internal consistency reliabilities of the five components were found to be high in Italy, Spain, Slovakia, Hungary, Israel, England, Germany, and Japan. In the present study the Cronbach's alpha coefficients were computed to estimate the internal consistency of the NEO PI-R scales. Standardized reliability coefficients for the domain scales were 0.559 (Neuroticism), 0.609 (Extraversion), 0.418 (Openness), 0.484 (Agreeableness) and 0.783 (Conscientiousness). The Cronbach's alphas of the facets are in Table 3 (p. 45). Although some researchers consider the NEO PI-R as the leading measure of the FFM (e.g. McCrae & Allik, 2002), the reliability coefficients for some of the subscales were relatively low and negative in this study.

The instrument has been translated into more than 40 languages or dialects, and studies of its factor structure have been conducted in more than 30 cultures, from Zimbabwe to Peru (McCrae & Allik, 2002). The various multinational and cross-cultural studies involving the NEO PI-R and other FFM scales show that the model is a valid measure of personality, and should thus be useful in cross-cultural research. Heuchert et al. (2000) used the NEO PI-R among students at the University of Johannesburg (formerly the Rand Afrikaans University), the study which included Africans, in South Africa and found the scale to be applicable in this population.

There are a wide variety of other instruments available to measure the FFM available such as the Basic Traits Inventory (BTI) developed by Taylor and de Bruin in 2003 for all

racial representatives in South Africa of which the current researcher was not aware of its existence, until the data was collected (Meiring, 2004); the Oliver John's Big Five Inventory (BFI; John, Donalive, Kentle, 1991) a widely used, well-established 44-item test (Gosling, Rentfrow, & Swann, 2003); the International Personality Item Pool (IPIP; Goldberg, 1999) which has also been used to examine the relationship between personality domains and drinking motives (Theakston, Stewart, Dawson, Knowlden-Loewen, & Lehman, 2004); the Eysenck Personality Questionnaire (EPQ; Eysenck, 1976); the Zuckerman-Kuhlman Personality Questionnaire (ZKPQ; Zuckerman, Kuhlman, Joirement, & Kraft, 1993), and the Trait Descriptive Adjectives (TDA; Goldberg, 1992).

The present researcher used the NEO PI-R for the following reasons. First, Heuchert et al. (2000) found the NEO PI-R to be applicable for different racial groups, including Africans, in South Africa. Also, the NEO PI-R has become one of the leading instruments in studies that assess personality using the FFM, shadowing many other well-known instruments (e.g. the ZKPQ is not considered a general measure of personality; Roberti, 2005).

#### 3.4.2 *Alcohol measures*

The method devised by Laukkanen et al. (2001) was used to divide the students according to the three groups of alcohol use, namely the Abstinence, Moderate drinkers, and Heavy drinkers. For purposes of drinking group classification, subjects responded to two (2) questions. The first one was "How often have you consumed an alcoholic beverage during the past 6 months?" and the response format to anchor it was: **1** = "not at all", **2** = "less than once a month", **3** = "1 to 4 times/month", **4** = "5 to 10 times/month", and **5** = ">10 times". The second question was "Have you ever consumed so much alcohol that you have become very drunk?" with the following response options: **1** = "never", **2** = "once", **3** = "2 to 3 times", **4** = "4 to 10 times", and **5** = "> 10 times". Those whose response was "1" to both questions were labelled as the Abstainers. The Moderate

drinkers were those who had responded with a “2” or “3” on the above two questions; and lastly, the Heavy drinkers were those who had responded with “4” or “5” on the two questions (Engs, 1975; Laukkanen et al., 2001).

Items from the Student Alcohol Questionnaire (SAQ), a scale developed by Engs (2002), were selected to measure the amounts of alcohol consumption and consequences of using alcohol. The SAQ was developed by Engs during his academic years in the 1970’s (Engs, 1975). As part of its development the instrument was subjected to face validity by a panel of experts and college students. Various reliability analyses including test-retest and internal reliability procedures were performed. Both the test-retest reliability and the Kuder-Richardson reliability were 0.79 with the Cronbach’s  $\alpha$  of 0.86 (Engs, 1978).

The following is an SAQ alcohol consumption question:

“When you drink **liquor**, how many drinks, on the average, do you usually drink at any one time?” and the response options were: **1** = “less than one drink”, **2** = “1 or 2 drinks”, **3** = “3 or 4 drinks”, **4** = “5 or 6 drinks”, **5** = “more than 6 drinks”. To group the participants for the present study this question was added to the previous two questions since they are all in the same format. This was an additional question to the already existing questions on alcohol consumption.

The SAQ was found to be reliable by several researchers (Engs & Hanson, 1994; Haworth-Hoepfner, Globetti, Stem, & Morasco, 1993). Since the present study used only a few items from the SAQ, the Cronbach’s alpha that was referred as to coming from previous studies ( $\alpha = 0.86$ ; Engs, 1977, 1978). However, in the current research the three alcohol drinking questions standardized internal consistency coefficients were estimated at 0.85 and 0.86 for the eighteen consequences of drinking SAQ items.

#### 3.4.3 *Parental Bonding Instrument (PBI)*

The PBI (Parker, Tupling, & Brown, 1979) is a 25-item self-report questionnaire measuring the two parental dimensions of care and overprotection. The scale is based on

Bowlby's (1969) attachment theory. Each item is rated on a 4-point Likert-type scale, with responses ranging from very likely to very unlikely. Items are presented in two forms, namely, the mother version and the father version, where the subject rates each parent separately (Reti et al., 2002).

The reliability of the questionnaire was assessed in the original sample, using test-retest, split-half and inter-rater reliability estimates. The reliabilities were high, averaging 0.76 (Parker et al., 1979). Mohr, Preisig, Fenton, and Ferrero (1999) state that the scale has a high test-retest reliability (the range of kappa coefficients found was 0.79-0.96). The reliability of the PBI has been supported by the level of agreement between mother and offspring scores (Parker et al., 1979). The scale has been used to study depression and child-rearing behaviour (Narita, Sato, Hirano, Gota, Sakado, & Uehara, 2000; Uehara, Sato, Sakado, & Someya, 1998). This PBI can be used in both clinical and general populations in relation to alcohol consumption (Joyce, Sellman, Wells, Frampton, Bushnell, Oakley-Brown, & Hornblow, 1994). The PBI was used to measure parenting styles and to assess how the participants were bonded with their parents. According to Reti et al. (2002), there is a relationship between parenting experienced in childhood and the development of personality.

In a separate study conducted to establish reliability in the South African population, Cronbach's alpha coefficients were computed to estimate the internal consistency of the PBI scales (Mashegoane, Debusho, Sewela, & Mhlongo, 2007). The standardized reliability coefficients for maternal PBI scales were 0.60 (warmth), 0.44 (protectiveness), and 0.64 (authoritarianism). Paternal-PBI standardized reliability coefficients were estimated at 0.41 (warmth), 0.49 (protectiveness) and 0.66 (authoritarianism). For the warmth scale, item-to-total correlations for items 4 and 18 were generally low and negative ( $r$ 's = -0.11 and -0.14, respectively). Removing each of the items increased the reliability coefficients to 0.50 and 0.52, and removing both resulted in a standardized reliability coefficient of 0.68 (Mashegoane et al., 2007). The Kendler (1996) model was used to analyze the results of parental bonding. Previous studies have also found Kendler



(1996) to be the best-fitting model compared to others (e.g. Cox, Enns, & Clara, 2000). In addition, Mashegoane et al. (2007) too found the Kendler (1996) model to be applicable to the present population.

#### 3.4.4 *Smoking and sexual risk behaviour items*

In addition, items on smoking and sexual risk behaviour were included. The participants were asked if they were smoking or not, and requested to state the number of cigarettes they were smoking per day and per week. Lastly, the students' sexual behaviour was also assessed by asking the students sex-related questions. They were asked to mention if they had ever had sex, at what age, and with how many partners they had had sex (see Appendix 3).

### 3.5 **Procedure**

After the proposal for the study was approved by the University Ethics Committee, the researcher approached prospective participants. Participants were recruited from different lecture halls after making arrangements with cooperating lecturers. Some of the participants were approached in their residence rooms. The researcher began by outlining the instructions of filling out the questionnaires in English. The participants were also urged to direct their questions to the researcher should difficulties arise. The respondents were furthermore encouraged to work individually, quietly, honestly, and as quickly as they could.

It took the participants an average of 45 minutes to complete the task. The questionnaires were collected by the researcher on the same day after they had been filled out. At face value, it appeared that the response rate was satisfactory although some students were experiencing difficulties in understanding some items of the questionnaire. A number of the students found the questionnaire very long and were not able to complete the process, but most of them succeeded.

The questionnaires included the NEO PI-R, the Parental Bonding Inventory, and some items of the Student Alcohol Questionnaire. The participants were required to provide demographic information about themselves, firstly if they come from rural or urban areas and to provide their socio-economic background. In addition, sex and smoking risk behaviour questions were also included in the questionnaire.

The study adopted the University of Limpopo's Code of Ethics. The participants were adequately informed of the study's aims, purpose, potential risks, and discomfort. No force or coercion was used on the participants. They were further informed and assured of confidentiality, and voluntary participation without any compensation. They were promised that no information would be released in a way that permitted linking specific individuals to specific responses. Information would be publicly presented in an aggregate form.

## **CHAPTER 4**

### **RESULTS**

#### **4.1 Plan for analysing the data**

The analysis was conducted using the computer programme SPSS-14 (SPSS for Windows, 2005). The three alcohol drinking groups were first formed according to their drinking group classification. In the data some of the items in the NEO PI-R reverse scored, while data were checked for errors and the reliability coefficients measured. Most of these were found to be low and negative and only those factors that reached a reliability coefficient of 0.35 and above were included in the presentation and discussion of the findings. The decision was guided by Cuieford (1965), who states that any Cronbach's  $\alpha$  from 0.35 upwards is acceptable for purposes of analysis

The researcher then correlated all the major variables such as personality, parenting, and alcohol consumption through analysis of variance (ANOVA). The means of the three alcohol drinking groups were compared to establish if there was a difference in the personality and quality of parenting each respondent had experienced. In the current study, alcohol use was the dependent variable, personality the independent/predictor variable. Parenting was also measured as a mediating variable.

#### **4.2 Classification of the participants according to their rates of alcohol consumption**

The participants were classified according to Abstainers, Moderate drinkers, and Heavy drinkers. Table 2 shows the frequencies and percentages of the participants according to their drinking type, including gender.

**Table 3: Drinking group type by personality domains and facets:**

**Table 2: Classification of the participants according to their rates of alcohol consumption**

<b>Alcohol use groups</b>	<i>Male</i>	<i>Female</i>	<i>N</i>
<i>Abstainers</i>	79 (53%)	95 (63%)	174 (58%)
<i>Moderate drinkers</i>	52 (35%)	42 (28%)	94 (31%)
<i>Heavy drinkers</i>	18 (12%)	13 (9%)	32 (11%)

The results of the present study did not differ from what was observed in other South African samples. For instance, Perry and Bennetts (1998) found that there is a lower level of binge drinking amongst Black South African students when compared to Afrikaans and English speaking White, Coloured and Indian students. Therefore, the results of the present study are not surprising, mainly that there were more Abstainers in the current population.

#### 4.3 The FFM aspects of personality in relation to alcohol use

Using ANOVA, the next table (Table 3) shows the results of personality domains and facets in relation to alcohol consumption. Note that only those personality factors that reached a reliability coefficient of 0.35 and above are included in Table 3. However see Appendix 8 for the full table of drinking group type by personality factors.

Personality factors				<i>F</i>	<i>p</i>	$\alpha$
	Abstainers	Moderate drinkers	Heavy drinkers			
	Mean (SD)	Mean (SD)	Mean (SD)			
<b>Neuroticism</b>	140.8 (11.8)	142.7 (11.9)	142.4 (13.2)	.883	.436	.559
<i>Vulnerability</i>	20.9 (4.1)	20.9 (4.2)	21.5 (3.9)	.278	.757	.454
<b>Extraversion</b>	154.0(12.2)	156.2 (14.1)	157.2 (14.1)	1.339	.264	.609
<i>Gregariousness</i>	25.3 (4.3)	25.2 (4.8)	25.0 (4.4)	.070	.932	.445
<i>Assertiveness</i>	24.6 (3.9)	23.3 (3.8)	26.0 (4.0)	2.222	.110	.359
<b>Openness</b>	150.4 (9.8)	151.9 (10.3)	154.5 (11.8)	2.467	.087**	.418
<i>Aesthetics</i>	26.6 (3.7)	27.4 (4.2)	27.8 (4.4)	1.917	.149	.374
<i>Ideas</i>	26.9 (4.0)	27.5 (4.4)	27.7 (4.1)	.798	.451	.460
<b>Agreeableness</b>	152.8 (10.8)	150.1 (10.6)	148.3 (14.7)	2.940	.054**	.484
<i>Altruism</i>	27.5 (3.6)	26.9 (4.3)	27.3 (3.6)	.919	.396	.391
<b>Conscientiousness</b>	164.6 (16.7)	165.1 (16.3)	161.4 (15.7)	.460	.632	.783
<i>Competence</i>	27.5 (4.0)	27.4 (3.9)	27.5 (4.3)	.013	.987	.436
<i>Dutifulness</i>	27.3 (4.0)	27.8 (4.2)	26.5 (4.1)	1.104	.333	.465
<i>Self-discipline</i>	27.6 (4.3)	27.2 (5.1)	27.2 (5.1)	.273	.761	.524
<i>Deliberation</i>	28.0 (4.0)	28.5 (3.4)	27.7 (4.7)	.691	.502	.390

Note: \*  $p < .05$ . \*\* $p < .10$ .

In this study the main strategy was to conduct an analysis not only at the level of the domains, but at the level of the facets. Unfortunately, most of the facet scales did not reach the reliability levels required for a scale to be considered useful. The researcher then decided to continue analysing only using the scales that were reliable as any Cronbach's  $\alpha$  from 0.35 upwards is acceptable for purposes of analysis (Cuieford, 1965). Table 3 thus reveals the scales that achieved an acceptable Cronbach's  $\alpha$ . The table does not show those scales that did not reach the cut-off point of 0.35. The results that follow are based on the scales whose reliability coefficients were above the cut-off point.

The present study found no significant differences between the Abstainers, Moderate

drinkers, and Heavy drinkers on both the Neuroticism domain and the Vulnerability facet scales. Thus, hypothesis 1 is rejected ( $p > .05$ ; *ns*). The results of the Extraversion domain and facets such as Gregariousness and Assertiveness also revealed no statistically significant difference between the three alcohol drinking groups ( $p > .05$ ; *ns*). Based on these results, hypothesis 2 which predicted that the facet scales of Extraversion (E) would be related to alcohol consumption is also rejected.

The positive relations often observed between the Openness domain and facets such as Aesthetics and Ideas and alcohol consumption were not confirmed by the present results. Although there was a marginally significant difference on the scores of the three drinking groups on the Openness domain ( $F = 2.46$ ;  $p < .10$ ), the overall results rejected hypothesis 3 ( $p > .05$ ; *ns*), as can be seen in Table 3.

Furthermore, the results did not reach statistical significance on alcohol use in relation to the Agreeableness facet scale Altruism, ( $p > .05$ ; *ns*). Although the Agreeableness domain score revealed a marginal significant difference between the three drinking groups ( $F = 2.40$ ;  $p < .10$ ). However, the differences disappeared when the facet scale of Altruism was analysed ( $p > .05$ ; *ns*). Hypothesis 5 is rejected because of this result.

The findings of the current research revealed no significant association between alcohol consumption and the Conscientiousness facets of Competence, Dutifulness, Self-discipline and Deliberation ( $p > .05$ ; *ns*). Hypothesis 5 predicted that alcohol users would have lower scores than Abstainers on all the Conscientiousness facets but the results of the present study were statistically not significant ( $p > .05$ ; *ns*). The current findings suggest that these personality attributes have no significant relationship with abstaining or alcohol consumption and hypothesis 5 is thus rejected (see Table 3; p. 45).

#### 4.4 Prevalence of risky drinking by parental attachment

Parenting is another factor that plays a major role in the development of personality traits and individual behaviour (Andrews et al., 1993). The next analysis reported in Table 4 reveals how the participants were attached to their parents according to their groups (Abstainers, Moderate drinkers, & Heavy drinkers). ANOVA was conducted to investigate the role of parenting in the risk behaviour of alcohol consumption. The Kendler (1996) model was chosen, following a separate analysis of the PBI (see Mashegoane et al., 2007).

Hypothesis 6 suggested that parenting moderates the relationship between personality and alcohol consumption. Regression analysis was to be done to investigate whether parenting moderates the relationship between personality and alcohol use. There was no need to continue with regression analysis to test this assertion since the initial analysis found no relationship between personality (the independent variable) and alcohol use (the dependent variable;  $p > .05$ ; *ns*).

**Table 4: Drinking group type by parental attachment**

Parental Bonding	Abstainers	Moderate	Heavy	<i>F</i>	<i>p</i>
		drinkers	drinkers		
	Mean (SD)	Mean (SD)	Mean (SD)		
<b>Mother</b>					
<i>Warmth</i>	8.94 (2.75)	9.32 (2.93)	9.66 (3.02)	1.134	.323
<i>Protectiveness</i>	4.33 (4.76)	3.34 (2.21)	3.66 (2.35)	2.024	.134
<i>Authoritarianism</i>	2.99 (2.33)	2.68 (2.23)	2.59 (2.32)	.765	.466
<b>Father</b>					
<i>Warmth</i>	8.23 (4.61)	7.15 (2.95)	7.96 (3.78)	1.562	.212
<i>Protectiveness</i>	3.67 (2.41)	3.82 (5.75)	3.64 (2.51)	.036	.964
<i>Authoritarianism</i>	3.92 (4.53)	3.13 (2.26)	2.48 (2.55)	2.055	.131

Note: \*  $p < .05$ . \*\*  $p < .10$ .

### **Table 5: Drinking group type by risky behaviour**

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ANOVA was conducted to compare the three drinking groups on parental bonding. The analysis revealed no significant difference between the groups (see Table 4).

#### **4.5 Prevalence of risky drinking by risk behaviour**

Although the relationship between alcohol use and risk behaviours was not the main interest of this study, the rates of the Abstainers, Moderate drinkers, and Heavy drinkers were compared regarding the following risk behaviours: age at which the students started engaging in sexual behaviour, the number of sexual partners in the past twelve months, being engaged in sexual behaviour under the influence of alcohol, and smoking of both cigarettes and marijuana.

It was observed that the scores of both personality and parenting in the current study failed to differentiate between the Abstainers, Moderate drinkers, and Heavy drinkers on some risk behaviours. As a result, ANOVA was conducted to assess if the three alcohol drinking groups would also not differ on other risk behaviours such as smoking and sexual risk behaviours. The importance of the findings would be to ascertain if the results above were not due to unrelated factors such as the unreliability of scales. I reasoned that if the groups would differ on another variable, then we would have to trust the accuracy of the results that suggest that the groups do not differ according to their reported parenting styles. Results of the current research found a significant positive relationship between alcohol consumption and sex ( $p < .05$ ; see Table 5 & Appendix 7).

In the current research all the Abstainers reported not smoking at all while the Moderate drinkers and Heavy drinkers were smokers. There were more students who reported being sexually active in both the alcohol drinking groups while there were a larger number of Heavy drinkers who reported being engaged in sexual activity without using protection compared to the Abstainers and Moderate drinkers. In contrast to personality and parenting scales, the risk behaviour items were able to differentiate between the Abstainers, Moderate drinkers, and Heavy drinkers (see Table 5 & Appendix 7).



<b>Risky behaviour factors</b>	<b>Abstainers</b>	<b>Moderate drinkers</b>	<b>Heavy drinkers</b>	<b>F</b>	<b>p</b>
	Mean (SD)	Mean (SD)	Mean (SD)		
<i>Age first had sex</i>	16.65(2.72)	16.61(2.36)	15.33(2.16)	3.001	.052**
<i>Partners in 12 months</i>	1.38 (.614)	1.54 (.702)	2.15 (.907)	13.098	.000*
<i>Sex and alcohol</i>	2.92 (.330)	2.60 (.658)	2.07 (.884)	29.674	.000*

Note: \*  $p < .05$ . \*\* $p < .10$ .

## **CHAPTER 5**

### **DISCUSSION OF THE FINDINGS**

#### **5.1 Introduction**

In the present chapter, the researcher discusses the results in terms of the original hypotheses with regard to the literature that was reviewed. The meaning, implication of the study, results, and the congruence or lack of congruence with the results of other studies, are all explored. The primary variables of personality and alcohol use are discussed as well as the issue of parenting in relation to alcohol use. Firstly, the classification of students according to their drinking group type is explored.

#### **5.2 Description of the sample**

There were about 58% Abstainers compared to 31% Moderate drinkers and 11% Heavy drinkers. Respectively, when combining the percentages of both the Moderate and the Heavy drinkers, they correlate with those identified by Peltzer and Phaswana (1999). These researchers found the prevalence of risky drinking amongst the University of Limpopo students to be at 41.5%. In contrast to overseas universities, where 85% of students drink and alcohol consumption is a culture to them (Matthews, 2004; Temple, 1998), the present study revealed low levels of alcohol consumption amongst the sample. The prevalence rates observed in this sample support studies that found low rates of drinking among African students (Chambwe et al., 1983; Engs et al., 1996; Pillay, 2006). The low level of drinking among students may be due to cultural factors such as social values and norms (Holder, 1998). The values are assigned to rural African students (72% in the current sample) and most of them carry these traits to tertiary institutions which may account for the low rates of alcohol use. Countries differ in terms of alcohol consumption not because of differences in the price or physical availability of alcohol but because of differences in social values and norms on drinking (Holder, 1998).

### 5.3 Risky drinking by personality domains and facets

The present study found a few significant relationships between FFM personality factors and alcohol use. The findings differ from those found in previous studies, which established positive relationships between global personality traits and alcohol use. Ruiz et al. (2003) state that individuals who use and misuse alcohol score higher on Neuroticism, Extraversion and Openness, and lower on Conscientiousness and Agreeableness. In addition, Miller et al. (2004) state that there is a relationship between FFM facets and risk behaviours such as alcohol consumption. However, the current study failed to confirm these previous findings (Miller et al., 2004; Ruiz et al., 2003). Generally, there was no association between Neuroticism, Extraversion, and Conscientiousness domains and facets, and alcohol consumption.

Previous research found that those high in Neuroticism consume more substances in their efforts to reduce negative feeling states or increase positive feeling states (Cooper et al., 1995). Previous research has indicated that Impulsivity (Colder & Chassin, 1997; Holder, 1998), Vulnerability (Bewley, 1986), and Depression (Aneshensel & Huba, 1983; Dorus & Senay, 1980; Samuels et al., 2004) facets increase with the level of alcohol consumption but that was not the case in the present study.

Vaillant (1983) argues that Abstainers are just as psychologically impaired as alcohol abusers. For example, both the Abstainers and the Heavy drinkers in Vaillant's study were found to display mutual emotional inadequacies (e.g. they are irritable, moody, anxious, and unable to relax). Shedler and Block (1990) also observed that Abstainers are generally anxious, a trait also common to Heavy drinkers which may be a contributing factor to the lack of significant results differentiating between the Abstainers from the alcohol consuming students on the Neuroticism domain and the Vulnerability facet. The researcher speculates that it may also be due to the fact that Africans deal with depression, anxiety and stress in other ways than resorting to drinking alcohol as a coping mechanism.

Similar to other researchers who have observed high scores for Heavy drinkers on the Extraversion domain (e.g. Jackson & Matthews, 1988), the current research also revealed similar results although there was no significant differences between the three groups on this domain and its facets. The researcher thus regards this as an indication that the Extraversion domain may mean something else in the present population. For example, Abstainers may have other means of expression of Extraversion. They may, for instance, be playing sport rather than engaging in drinking behaviour.

There were some expected results for the present study. For instance, there was a significant (although marginal) difference between the three groups on the Openness domain. The results are not surprising since they are consistent with the theory of the FFM. For instance, Stewart and Devine (2000) theorized that high Openness domain scores (i.e. adventurousness, preference for variety) on the NEO PI-R would predict increased levels of alcohol use which was also the case in the present sample. In the present study, it turned out that the Abstainers were the group that had obtained the lowest score with the Heavy drinkers obtaining the highest on the Openness domain as expected (see Table 3). These findings then confirmed previous studies that associated the Openness domain with alcohol use (Stewart & Devine, 2000).

Another domain that showed marginal significant results is Agreeableness domain. Heavy drinkers scored lower on Agreeableness while the Abstainers obtained higher scores on this domain. This result suggests that Abstainers might follow their own inner voice, be egocentric, sceptical of others' intentions, and rather compete than cooperate. Based on previous studies (e.g. Cooper, 1994; Theakston et al., 2004; Walton & Roberts, 2004), Agreeableness is negatively correlated with both the quantity of drinking and alcohol problems which is a constitutive pattern amongst Heavy drinkers. Interestingly, the current findings revealed significant difference between the three groups on the Agreeableness domain but not on the Altruism facet which then contradict previous studies (Ruiz et al., 2003).

The lack of difference between the three groups on the Conscientiousness domain and its facets may be due to the fact that all the participants in the current study were university students. Since Conscientiousness has been associated with academic achievement, this may suggest that the participants in the present research have a will to achieve and be purposeful (Digman & Takemoto-Chock, 1981). As a result, these personality attributes have no significant relationship with alcohol drinking in the current population.

There were a few more personality scales that showed the expected results, thus confirming previous findings (Cooper, 1994; Stewart & Devine, 2000). For example, the Abstainers were expected to score lower on Openness (Stewart & Devine, 2000), while the alcohol drinking groups were expected to obtain the lowest mean on the Agreeableness domain (Cooper, 1994; Theakston et al., 2004; Walton & Roberts, 2004). In this study, the NEO PI-R as a measure of personality was able to marginally differentiate between the Abstainers, Moderate drinkers, and Heavy drinkers on only two domains (Openness & Agreeableness). However, this is a limitation because a single or selective personality factor does not allow the researcher to come to the conclusion that the Openness and Agreeableness domains have predicted alcohol use. As most researchers suggest that it is necessary to measure personality as a whole (e.g. Miller et al., 2003; Trobst et al., 2000), a larger number of personality factors were expected to contribute to differentiate between the Abstainers, Moderate drinkers and Heavy drinkers or predict alcohol use which was not the case in the current study.

The researcher thus tends to maintain that the findings of the present study are primarily a result of social, economic, and cultural factors rather than the direct product of the black race itself as Heuchert et al. (2000) suggest concerning this population. Another factor might be the application of the FFM and NEO PI-R in the present sample. For instance, Paunonen and Jackson (2000) mention that there are a number of personality factors that have been omitted in the FFM, such as *religion, honesty, ethical, and moral conduct*. These factors have been considered by others to be other big personality factors in their own right, yet they were not included in the FFM.

The above-mentioned factors may be the main predictors of alcohol consumption rather than the FFM of personality on its own in the present population. For instance, Perkins (1985) noted that the importance of religiosity protects against risky drinking under contexts of less constraint because religiosity usually forbids risky drinking. If these factors were also measured by the FFM, the findings might have been different. According to the Medical Research Council (1998), there are large sections of the population who abstain from using alcohol due to cultural or religious norms in South Africa.

Perkins (1985) indicates the influence of cultural and religious factors on alcohol use. Unfortunately, these factors have been omitted in the FFM. Cultural studies of the FFM also found that the theory is not applicable to some cultures such as *humorous, witty, and amusing*. Linguistic studies of the Dutch language suggested that this domain of personality does not fit into the Big-Five factors of personality (Paunonen & Jackson, 2000). Heuchert et al. (2000) mention that social, economic, and cultural issues may play a major role in the personality structure of the African population. For instance, rural Africans generally have extended family systems that provide a range of adult caregivers and role models for children within the kinship network and these families have shown resilience. This suggests that such factors contribute more to the behaviour of the present population in relation to alcohol use than personality (Coplan, 2006).

Furthermore, in the present study most of the subjects were experiencing language difficulties with some of the items in the NEO PI-R. During the administration of the questionnaire, there were items on which the participants needed clarity concerning their meaning. Some of these were item 4 (I tend to be cynical and skeptical of others intentions); item 52 (I wouldn't enjoy vacationing in Las Vegas); item 143 (I enjoy working on "mind-twister"-type puzzles); and item 160 (I tend to be somewhat fastidious or exacting). The participants also complained about the long questionnaire, especially with the 240 items of the NEO PI-R. Participants may have responded randomly without considering the content of the questions, which in turn might have led to the low and

negative reliability coefficients of a number of personality facets (see Appendix 8).

The present findings support Van de Vijver and Leung (2000) who state that the FFM focuses on generalization so that cross-cultural application of the theory can easily be overrated as cultural diffusion. These researchers concluded that the FFM theory has not yet been sufficiently developed to contribute to the theories that link culture and personality. Previous studies (e.g. Ball et al., 2001; Costa & McCrae, 1992; Goldberg, 1992; Lyman & Widigar, 2001; McCrae & Allik, 2002; Trobst et al., 2000) which found that the FFM and NEO PI-R were useful in different cultural and social settings on predicting personality and a number of risk behaviours, have not been confirmed by the present results.

The lack of significant difference between the three groups on more numbers of personality factors could also possibly be explained by the existence of two types of abstainers. There are those who have never consumed alcohol, and those who currently refrain from using intoxicating substances because they are recovering from an abuse problem or addiction. It is certainly conceivable that the various proportions of these two types of abstainers across studies could lead to contradictory findings (Walton & Roberts, 2004). The present study's indicator of abstinence, however, does not allow the researcher to distinguish between the two types of abstainers. These might be the main factors that led to the lack of a significant difference between the Abstainers, Moderate drinkers, and Heavy drinkers on most of the personality factors.

In summary, culture and socialization may be also playing a major role in the use of alcohol and abstinence amongst African university students rather than personality on its own. This may be due to the fact that a number of personality factors failed to differentiate between the Abstainers, Moderate drinkers, and Heavy drinkers or predict alcohol consumption although previous studies were partially confirmed (e.g. Sheets & Kristeller, 2001). The findings might be also due to the invalidity of the NEO PI-R in the current population which led to the omission of personality facets with low and negative

reliability coefficients in the presentation and discussion of the findings.

#### 5.4 **Risky drinking by parental attachment**

According to Andrews et al. (1993), parenting moderates the relationship between personality and alcohol consumption. However, there was no need to continue with regression analysis to investigate the assertion that parenting was the “moderator” since the initial analysis found no relationship between personality and alcohol use. Instead, the ANOVA test was conducted to compare the Abstainers, Moderate drinkers, and Heavy drinkers on parental bonding. The maternal PBI and paternal PBI results both found no significant difference between the three groups. This result may not be attributed to unrelated factors such as the properties of the scales or what is generally called measurement error, since the three groups differ on other risk behaviours such risky sex and smoking.

Previous studies (Andrews et al., 1993; Donovan, 2005; Eitle, 2005) were not confirmed by the current findings since there was no significant difference between the three groups on the parental style of their parents. The relationship between personality and alcohol use is not a linear one (Andrews et al., 1993). Parenting may influence the development of personality factors that can result in the use or misuse of alcohol. Parental influences have also been found to be significant predictors of teen alcohol and tobacco use, including the nature of parental supervision and monitoring (Eitle, 2005). In contrast, the current study found no influence of parenting on the relationship between personality and alcohol consumption.

According to Coplan (2006), African infant care is traditionally the sphere of mothers, grandmothers, and older sisters. This suggests that parenting by the biological parent may not necessarily have had an effect on an individual’s behaviour in the present population. These findings might have resulted from the fact that Africans do not only rely on biological parental figures for attachment and bonding but also on different figures such



as extended family members. Hence, both paternal and maternal parenting failed to differentiate between the three groups in this study.

In summary, most researchers (e.g. Pincus & Ruiz, 1997; Reti et al., 2002) argue that parenting makes only a partial contribution to the individual's personality development. Based on studies on parenting, the experience of high levels of denial of autonomy and low levels of parental care are found to be associated with low Conscientiousness and high levels of Neuroticism which may lead to problem behaviours such as alcohol drinking. However, the present results suggest no significant difference between the three alcohol drinking groups on both personality and parenting. This may be due to the social and cultural ways of parenting in the present population as Coplan (2006) suggests.

## **CHAPTER 6**

### **CONCLUSION**

#### **6.1 Conclusion**

In the current research only two personality domains and none of the facets were able to differentiate between the Abstainers, Moderate drinkers, and Heavy drinkers. This may be due to the NEO PI-R not performing well as a measure of personality in the present sample of African university students. The poor results regarding the reliability of the scale may in turn have led to the failure of personality to predict alcohol use in this sample.

Parenting also failed to differentiate between the Abstainers and the alcohol drinking students. Since there was little relationship between personality and alcohol use amongst the African students, the results may suggest that parenting does not moderate the relationship between these two variables. This may be due to the availability of extended figures for bonding instead of only paternal and maternal figures on Africans (Coplan, 2006). As a result, the PBI failed to differentiate between the three groups on parental bonding in the current population. However, the three groups were significantly different on risk behaviours which question the validity of the NEO PI-R and PBI on African students.

#### **6.2 Limitations of the present study**

As may be expected, this study has limitations. The first limitation is that the present research failed to identify the two types of Abstainers suggested by Walton and Roberts (2004). It is certainly conceivable that the various proportions of these two types of Abstainers across studies could lead to contradictory findings. The FFM theory has also been found to be limited since it omits from its framework some aspects of personality (e.g. religion) considered as important by a number of personality theorists (Paunonen & Jackson, 2000).

The use of the NEO PI-R in the present population unveiled some unexpected challenges. A number of the participants seemed to experience difficulties in understanding some of the items in the scale. It thus turned out that it was a particular group of items that caused concern. Unfortunately, the researcher did not prepare to conduct a validation process, and did not conduct a test-retest procedure. Therefore, the validity of the scale in this particular sample is doubtful.

Furthermore, the reliability is also suspect, judging from some of the low and negative Cronbach's alpha coefficients obtained for this study which led the researcher to exclude twenty personality facets from the results and discussion of these results. In addition, the current study also failed to include cultural variables. So, when contradictory results were obtained, it was not possible to determine their source within the present study.

### **6.3 Implications of the results**

Considering the above-mentioned limitations of the study, the researcher is of the opinion that the current findings should be used with caution. Keeping in mind the limitations of the study, it is possible to come to some conclusions about the results. The present results found very little relationship between personality and alcohol consumption among the respondents. This means that in curbing alcohol abuse, influencing the personality of the students is not really useful. As far as parenting is concerned, there are some dimensions of parenting which seem to influence the use of alcohol. The acknowledgement of the lack of parental influence on the relationship between personality and alcohol consumption in the present population would be useful as these findings may be due to cultural factors.

However, the present study adds to existing research on the FFM and the NEO PI-R conducted in South Africa amongst students (e.g. Heuchert et al., 2000). It also adds to the use of the PBI as a measure of parental attachment among students. However, the results of this study suggest that these scales need to be validated or adapted for local conditions. It seems that the psychometric properties of the scales need to be investigated before they are used in South Africa.

#### 6.4 **Recommendations**

The present study primarily focused on personality and parenting in relation to alcohol use amongst African students at the University of Limpopo therefore, the researcher suggests that future studies should focus on other campuses, and also include other ethnic groups to see if the results can be replicated.

It is also recommended that researchers use the NEO PI-R and the PBI with caution among African University students. The English versions of the scales were used in the current sample. However, adapted versions would have been more useful. Although it may be costly to translate the scales into appropriate African languages, the effort may be worth it the cost because the results of the reliability calculations in this study suggest that the scales may be problematic in the South African context.

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## **APPENDIX 1**

### STUDENT SELF-DESCRIPTION STUDY

The present questionnaire asks you to give a description of yourself. All the questions are important since they contribute to an overall understanding of the aspects that are studied. Therefore, each of the questions asked are important for the researcher to gain an understanding about yourself. So, please answer all questions. Your answers will be treated with strict confidentiality. **Only the researcher will have access to the information you provide.**

Field Cod

Some of the questions may seem to be personal, yet the information you provide can also apply to many other students and people. I am asking you to answer honestly so that I can learn more about people.

Name of the Researcher: **MPUMELELO MHLONGO**,  
Psychology, School of Social Sciences,  
University of Limpopo, Mankweng.

## **APPENDIX 2 SECTION ONE**

1. How old are you? \_\_\_\_\_ years old.

2. Where is your home based? 

Rural area	Urban area
------------	------------

3. When you were growing up, how many people lived in your \_\_\_\_\_ people.  
house?

4. What is your mother's (step-mother's)  
highest qualification?

Degree/diploma	
Matric / Gr. 12	
Below Matric	
No education	

5. What is your mother's (step-mother's) job? \_\_\_\_\_

6. What is your father's (step-father's) highest  
qualification?

Degree/diploma	
Matric / Gr. 12	
Below Matric	
No education	

7. What is your father's (step-father's) job? \_\_\_\_\_

**APPENDIX 3**

8 (a) Have you ever had sex? Yes \_\_\_\_\_ No \_\_\_\_\_

Field Cod

(b) How old were you when you first had sex? \_\_\_\_\_ Years old

(c) With how many people have you had sex (oral, anal, or vaginal) in the past three (3) months?

1 = 1 person	2 = 2-5 persons	3 = 6-10 persons	4 = More than 10 persons
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(d) With how many people have you had sex (oral, anal, or vaginal) in the past twelve (12) months?

1	2-5	6-10	More than 10
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(e) With how many people have you had sex (oral, anal, or vaginal) in the past year?

1	2-5	6-10	More than 10
---	-----	------	--------------

(f) Have you ever had anal sex?

Yes, without a condom	Yes, with a condom	No
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(g) Have your ever had vaginal or anal sex whilst you were under the influence of alcohol?

Yes, without a condom	Yes, with a condom	No
-----------------------	--------------------	----

10. Do you smoke? Yes \_\_\_\_\_ No \_\_\_\_\_

11. On waking up in the morning, how long does it take for you to feel that you need a cigarette?

Less than 30 minutes	30-60 minutes	More than 60 minutes
----------------------	---------------	----------------------

12. How many cigarettes do you smoke per day? \_\_\_\_\_ Cigarettes

13. How many cigarettes do you smoke per week? \_\_\_\_\_ Cigarettes

14. Do you wish to stop smoking? Yes \_\_\_\_\_ No \_\_\_\_\_

15. Have you ever smoked marijuana? Yes \_\_\_\_\_ No \_\_\_\_\_

Field Cod

#### **APPENDIX 4 SECTION TWO**

Please note that in the questionnaire used to gather data items of the Parental Bonding Instrument (PBI) were used. However, the items of the PBI are omitted due to lack of written permission from the publisher of the scale to publish it as part of this dissertation.

#### **APPENDIX 5 SECTION THREE**

Please note that in the questionnaire used to gather data items of the Student Alcohol Questionnaire (SAQ) were used. However, the items of the SAQ are omitted due to lack of written permission from the publisher of the scale to publish it as part of this dissertation.

#### **APPENDIX 6 SECTION FOUR**

Please note that in the questionnaire used to gather data items of the NEO PI-R were used. However, the items of the NEO PI-R are omitted due to lack of written permission from the publisher of the scale to publish it as part of this dissertation.

## APPENDIX 8

**Table 7: Drinking group type by personality domains and facets**

Personality factors	Abstainers	Moderate drinkers	Heavy drinkers	<i>F</i>	<i>p</i>	<i>α</i>
	Mean (SD)	Mean (SD)	Mean (SD)			

## APPENDIX 7

**Table 6: Prevalence of drinking with risky behaviour**

Risk behaviour	Abstainers	Moderate drinkers	Heavy drinkers
<b>Smoking</b>			
Yes	0(0%)	7(7%)	9(28%)
No	178(100%)	87(93%)	23(72%)
<b>Marijuana</b>			
Yes	0(0%)	13(14%)	9(28%)
No	178(100%)	81(86%)	23(72%)
<b>Had sex</b>			
Yes	101(58%)	84(89%)	27(84%)
No	73(42%)	10(11%)	5(16%)
<b>Mean age</b>	16(16.65)	16(16.61)	15(15.33)
<b>Partners in 12 months</b>			
One	69(68%)	46(55%)	6(22%)
2-5	28(28%)	34(40%)	14(52%)
6-10	4(4%)	1(1%)	4(15%)
More than 10	1(1%)	3(4%)	3(11%)
<b>Sex and Alcohol</b>			
Yes without a condom	2(2%)	8(9%)	10(35%)
Yes with a condom	6(5%)	18(21%)	7(24%)
No	114(93%)	59(69%)	12(41%)



<b>Neuroticism</b>	140.8 (11.8)	142.7 (11.9)	142.4 (13.2)	.883	.436	.559
<i>Anxiety</i>	23.9 (3.2)	23.8 (3.2)	24.5 (4.7)	.500	.607	.091
<i>Angry hostility</i>	23.5 (3.5)	24.9 (4.2)	24.7 (3.6)	.088	.018*	.221
<i>Depression</i>	24.2 (3.5)	24.2 (3.6)	23.4 (3.8)	.715	.490	.133
<i>Self consciousness</i>	24.0 (3.2)	24.6 (3.3)	24.1 (3.5)	.963	.383	.066
<i>Impulsivity</i>	24.0 (3.1)	24.1 (2.7)	23.9 (4.1)	.070	.932	-.050
<i>Vulnerability</i>	20.9 (4.1)	20.9 (4.2)	21.5 (3.9)	.278	.757	.454
<b>Extraversion</b>	154.0 (12.2)	156.2 (14.1)	157.2 (14.1)	1.339	.264	.609
<i>Warmth</i>	27.6 (4.0)	27.8 (3.9)	27.8 (3.9)	.115	.891	.310
<i>Gregariousness</i>	25.3 (4.3)	25.2 (4.8)	25.0 (4.4)	.070	.932	.445
<i>Assertiveness</i>	24.6 (3.9)	23.3 (3.8)	26.0 (4.0)	2.222	.110	.359
<i>Activity</i>	24.8 (3.3)	25.3 (3.6)	25.0 (3.9)	.557	.574	.218
<i>Excitement-seeking</i>	25.3 (3.4)	26.2 (3.7)	27.0 (4.6)	3.780	.024*	.182
<i>Positive emotions</i>	26.2 (3.5)	26.2 (3.1)	26.2 (3.5)	.007	.993	.108
<b>Openness</b>	150.4 (9.8)	151.9 (10.3)	154.5 (11.8)	2.467	.087**	.418
<i>Fantasy</i>	24.0 (3.3)	24.4 (3.3)	24.3 (3.3)	.463	.630	.057
<i>Aesthetics</i>	26.6 (3.7)	27.4 (4.2)	27.8 (4.4)	1.917	.149	.374
<i>Feelings</i>	25.1 (3.1)	25.2 (3.0)	26.0 (3.1)	1.115	.329	-.049
<i>Actions</i>	23.0 (2.6)	22.8 (2.6)	22.8 (3.7)	3.603	.028*	-.209
<i>Ideas</i>	26.9 (4.0)	27.5 (4.4)	27.7 (4.1)	.798	.451	.460
<i>Values</i>	24.5 (3.2)	24.4 (3.2)	24.2 (3.5)	.126	.882	.029
<b>Agreeableness</b>	152.8 (10.8)	150.1 (10.6)	148.3 (14.7)	2.940	.054**	.484
<i>Trust</i>	24.7 (3.1)	24.4 (3.2)	25.6 (3.4)	1.757	.174	.067
<i>Straightforwardness</i>	24.8 (3.6)	24.3 (3.4)	23.6 (3.8)	1.516	.221	.140
<i>Altruism</i>	27.5 (3.6)	26.9 (4.3)	27.3 (3.6)	.919	.396	.391
<i>Compliance</i>	26.5 (3.9)	25.3 (3.7)	24.9 (5.6)	3.465	.033*	.319
<i>Modesty</i>	22.5 (3.8)	22.0 (4.1)	21.2 (4.2)	1.445	.237	.296
<i>Tender-mindedness</i>	26.5 (3.5)	27.1 (3.9)	25.4 (5.1)	2.400	.092**	.313
<b>Conscientiousness</b>	164.6 (16.7)	165.1 (16.3)	161.4 (15.7)	.460	.632	.783
<i>Competence</i>	27.5 (4.0)	27.4 (3.9)	27.5 (4.3)	.013	.987	.436
<i>Order</i>	26.5 (3.3)	26.9 (3.4)	26.2 (3.9)	.580	.561	.187
<i>Dutifulness</i>	27.3 (4.0)	27.8 (4.2)	26.5 (4.1)	1.104	.333	.465
<i>Achievement striving</i>	27.4 (4.0)	27.1 (3.7)	26.7 (3.7)	.512	.600	.237
<i>Self-discipline</i>	27.6 (4.3)	27.2 (5.1)	27.2 (5.1)	.273	.761	.524
<i>Deliberation</i>	28.0 (4.0)	28.5 (3.4)	27.7 (4.7)	.691	.502	.390

Note: \*  $p < .05$ . \*\* $p < .10$ .