

# The Relationship between Neuroticism, Extraversion and Psychological Well-Being in Sudanese Undergraduate Students between Different Gender and Age Cohort

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**Abstract:** Psychological well-being is more than just happiness or satisfaction; rather it refers to being able to develop as a person and to being fulfilled and happy, and thus, contributes to the well-being of the community at large. However, since 2014, the issue of psychological well-being in Sudan has become a prodigious concern due to the rising rate of psychological problems among students. Past literature highlighted the recent increase in numbers of Sudanese students who are suffering from psychological issues. In spite that, the research on psychological well-being and personality has undergone extensive empirical review and theoretical evaluation, there is a dearth of empirical studies on the relationship between personality and psychological well-being among Sudanese students. Thus, the current study investigated the relationship between extraversion, neuroticism and psychological well-being of undergraduate students. A correlational research design was used in this study. The study used stratified random sampling procedure to select 382 undergraduate students as the sample of the study. The Eysenck Personality Inventory (EPI) that measures two dimensions of personality and Ryff's Psychological Well-being scales were administered. The findings of this study with a p-value =.000 < .01 threshold of alpha showed that there was positive correlation between extraversion and the psychological well-being; the findings further explained with a p-value =.000 < .01 that neuroticism was positively correlated with the psychological well-being of the students. This study contributed to the literature of psychological wellbeing and established the relationships of extraversion, neuroticism and psychological well-being among Sudanese students.

**Keywords:** Extraversion; Neuroticism; Psychological wellbeing; Africa; Sudan

## I. INTRODUCTION

Psychological well-being is considered a crucial resource for an individual (Ryff & Singer, 2006). There are several skills that are required for the navigations through the environments to enhance self-actualization, thus the perspectives of PWB are crucial to successful relationships with one another (Ryff, 2014). PWB has been measured to correlate with physical health and individual personality (Ryff et al., 2006). Therefore, PWB is important for individuals at any age, especially students transiting to higher education regardless of their different personality traits and demographic

background such as gender, level of income and socio economic status (Bowman, 2010). However, LeVine (2018) explained that personality traits that consist of self-feeling, attitudinal and social reactions are associated with psychological wellbeing to different.

Sudan, country located in north eastern Africa. The name Sudan derives from the Arabic expression *bilād al-sūdān* ("land of the blacks"), by which medieval Arab geographers referred to the settled African countries that began at the southern edge of the Sahara. Baldo (2014), the issue of PWB well-being in Sudan has become a prodigious concern due to the rising rate of psychological problems among students. Baldo (2014) highlighted that there are increased numbers of Sudanese students who are suffering from psychological issues. It was further revealed that among the 500-700 patients in the hospitals and psychiatric clinics in the capital of Sudan, Khartoum, 27% of them are students, while the number of patients on the streets are around 4000 (Baldo, 2014). Psychological issues are steadily increasing as a result of life and psychological pressures. In addition, Baldo (2014) pointed out that the proportion of schizophrenia in the society reached (1%), depression was between (25-30%), and anxiety in different forms was between 7-15%. Thus, the main focus of this study is to demonstrate the importance of psychological well-being and its correlations with extraversion and neuroticism for undergraduate students in Sudan.

Furthermore, it is exhibited through the literature that past research had given most consideration to the negative side effects and the causes of psychological problems as opposed to the components of mental prosperity. This has intensified the necessity to expand knowledge in this area. In response to this need, it seems apparent that a study of PWB and personality traits (Hicks & Mehta, 2018) could be a more compelling goal than the current emphasis on symptom reduction.

Fard et al. (2014) argued that PWB is more than just happiness or satisfaction; rather it refers to being able to develop as a person and to being fulfilled and happy, and thus,

contributes to the well-being of the community at large. Recent studies such as Adeniyi and Onadiji (2016) and Sharma, (2014) on gender differences in PWB have yielded contradictory findings. The studies of Adeniyi and Onadiji (2016) and Sharma, (2014) underscored the need for more studies on the impact of gender on important PWB outcomes. It was also reported that women preferred to express the unbearable pressures more than men do.

Recent investigations by Emanuel, Howell, Taber, Ferrer, Klein and Harris (2018), and Hernandez, Bassett, Boughton, Schuette, Shiu, and Moskowitz (2018) have established that psychological well-being is associated with positive cognitive and health outcomes. More specifically, their findings demonstrated that psychological well-being positively predicted the ability to self-affirm, suggesting that psychologically healthy individuals may be more likely to reflect on values that are relevant to them when their sense of self is threatened (Sherman & Cohen, 2006).

Topham and Moller (2011) reported that one out of every four new university students showed signs of psychological distress that manifested as moderate to severe social anxiety. This finding supported the result of a study which found that university students, but in particular first year entrants reported experiencing more strain on their well-being (Bewick, Koutsopoulou, Miles, Slaa & Barkham, 2010). This finding can be attributed to the fact that university education often may entail significant reductions in financial and personal support that the student can access (Royal College of Psychiatrists, 2011). Thus, the students may experience dips in their psychological well-being as a result of their personality traits.

#### *Psychological Well-Being in Sudan*

In 2001 The Health Education Department within Federal Ministry of Health became the General Directorate of Health Promotion. This directorate is an umbrella for psychology wellbeing along with other six health-related programs including health care, School Health, National Program, Sudan Initiative for Tobacco control and Oral Health and of the Elderly. (WHO, 2009).

A lot of work at the community level needs to be done to improve access and utilization of psychology wellbeing care services. Typical history of psychology wellbeing patients is that those patients first seek care from traditional healers. Patients may stay with traditional healers for several months. They are referred to government facilities when there are no signs of improvement (Sorketti, Zainal & Habil 2012). The majority of patients who access traditional healer centres for psychology wellbeing were found to have specific characteristics. Most of those patients were male, jobless, and with only a primary education or illiterate. The average duration of stay at these centres was five months (Sorketti, Zainal & Habil 2012).

Traditional and religious healers have considerable impact on a psychology wellbeing patient's access to care. In many African countries families are responsible for taking care of psychology illness patients, they only try modern care when traditional healing fails. (Alem, 2002) In Sudan this depends on patients or family members' belief in the healer's (or Sheikh's) ability to treat them. In some parts of Sudan, especially in Gezira, some people believe that they are not allowed to disobey these religious healers. Whether the patient goes to a religious or non-religious healer depends in large part on the patients and co patients understanding of psychology wellbeing and their own beliefs (Al-Sheri, 2014).

Psychological, social and academic compatibility is an important factor in the educational process. Psychological, social and academic problem-free student may lead to the creation of a balanced personality parallel with educational values to which the educational process aims. Al-Sheri (2014) believes that psychological and social compatibility is one of the most important elements that help the formation of normal life among the growing humans to achieve their proper adjustment with their environment and society especially in Sudan Context. When a student enrolls in a Sudanese university, he or she finds himself in an environment where there are many new elements. Student finds himself in a new place, which is strange and unfamiliar for him. He has left the family atmosphere, entered a noisy community, and joined a large number of people whom he does not know at all. Within this new atmosphere, he does not master the appropriate ways of conduct. He faces this new environment with many implicit questions, various concerns, and a variety of perceptions of different frameworks. In addition, students suffer from a number of crises caused by his growth, study, thinking of his future, and his position in his present and might overcome all these troubles and crises. Student even might have difficulties in solving some or most of them. Some students at Sudanese universities suffer from a lot of anxiety and conflicts as well as psychological disorder.

#### *The Framework of Study*

The researcher adopts the 6 dimensions of Ryff multi-dimensional model of psychological well-being. The six dimensions used to yield an overall score on psychological well-being are: self-acceptance, positive relations with others, autonomy, environmental master, purpose in life, and personal growth (Ryff, 1989). The conceptual framework of this study would determine the relationships between the variables using correlations analysis. According to the theory, one of the strongest predictors (drivers) of our usual emotional style is personality, particularly the dimensions of extraversion and neuroticism. Extraversion (sociability) is strongly associated with a positive emotional style, while neuroticism is associated with a negative emotional style (Diener & Smith, 1999). In this study, the researcher extracts neuroticism and extraversion from five-factor theory of personality.

Sharma, (2014) suggesting the need to take a holistic approach in future research, by not only taking into consideration the gender, domicile and number of siblings, but also socio-economic status as possible contributing constructs. There have been many studies on PWB, personality traits and quality of life in the Western context. However, there appears to be only a handful of studies investigating relationships between PWB and the two dimensions of personality traits such as extraversion and neuroticism have taken place in the Sudan context. Therefore, with the importance of psychological well-being, the current study aims to investigate the relationships between neuroticism and extraversion, on psychological well-being of undergraduate students in Sudan.

## II. METHOD

A correlational design was used in this study in order to provide statistical data to empirically test the relationship between dependent and independent variables Data were obtained through distribution of a questionnaire. This method has been consistently used by turnover intention researchers due to the methodological effectiveness in evaluating the relationship among variables of interest statistically (Egan, Yang & Bartlett 2004).

The targeted participants of this study consist of 382 undergraduates' students in Omdurman Islamic University.. According to Krejcie and Morgan's sample size determination table, 382 undergraduate students were randomly selected out of the total population of the study. The selected sample size in this study was guided by principles of the 95% confidence of interval and 5% margin of error accuracy (Krejcie and Morgan's).

Based on this, the questionnaire used in this research was divided into two main sections. The section one contains measures of extraversion and neuroticism adapted from Eysenck Personality Inventory (EPI, 1965) and section two consists of PWB measures, and both instrument was translate into Arabic language The five-point Likert scale was used to assess the level of strength, a subject was having in terms of

agree and disagree and calculated the summated scores for each of the sample by adding all the items (Sekaran & Bougie, 2013).

### *Instrument Reliability Test*

#### *Extraversion-Introversion and Neuroticism*

In this study, the researcher adapted the Eysenck Personality Inventory (EPI) that measures two dimensions of personality, Extraversion-Introversion and Neuroticism-Stability, which account for most of the variance in the personality domain. Each form contains 12 Yes-No" items with no repetition of items and the Cronbach Alpha with .80 for extraversion and .91 for neuroticism respectively) Eysenck, 1965).

#### *Psychological well-being*

To measure the psychological well-being, the researcher adapted Ryff's psychological well-being scales. The test-retest reliability coefficient of PWB was 0.82. The subscales of Self-acceptance, Positive Relation with Others, Autonomy, Environmental Mastery, Purpose in Life, and Personal Growth were found to be 0.71, 0.77, 0.78, 0.77, 0.70, and 0.78 respectively, which were statistically significant.

## III. RESULTS OF THE STUDY

### *Correlation Between The Extraversion, Neuroticism And Psychological Well-Being*

The research objective sought to investigate the relationship between extraversion, neuroticism and psychological well-being of the undergraduate students in Sudan. The researcher administered 382 questionnaires to the participants of the study. In order to answer this, all the variables were grouped according to the mean score namely extraversion, neuroticism and dimensions of psychological well-being then the researcher used product moment correlation coefficient (PMCC) to determine the relationships between the variables. The table below illustrated the results of the study.

Table 1

*Extraversion, Neuroticism and Psychological Well-Being: Correlations and Descriptive Statistics (N=382)*

Variables	1	2	3	4	5	6	7	8	9	M	SD
Overall Psychological Well-Being	-.000-										
Autonomy	-.416-	--.000-									
Environmental Mastery	-.003-	--.411-	-.000-								
Personal Growth	-.051-	-.000--	-.000-	-.000-							
Positive Relation	-.004-	--.011-	--.698	-.000-	-.000-						
Purposive in life	-.032-	-.000--	-.000-	-.000-	-.000-	-.000-					
Self-Acceptance	-.000-	--.004-	-.111-	-.000-	-.000-	-.000-	-.111-				
Extraversion	-.646-	-.084--	-.003-	-.051-	-.004-	-.032-	-.000-	-.000--		16.013	1.87
Neuroticism	-.646-	--.019-	-.411-	-.000-	-.011-	-.000-	-.004-	-.000--	--.000--	16.520	2.93

In the aforementioned table, all variables were computed according to the mean scores which are :( autonomy, environmental mastery, personal growth, positive relation, purposive in life, self-acceptance and extraversion). The results of the correlation coefficient in the above table indicated that extraversion and neuroticism were correlated with the autonomy of the students  $r = (.416)$ , with the  $p$ -value  $=.000 < .05$  threshold of alpha. Thus, the researcher attempts to conclude that extraversion and neuroticism were positively strong correlated with the autonomy. Furthermore, the result showed that extraversion and neuroticism were correlated to the environmental mastery  $r = (.226)$  with the  $p$ -value  $=.000 < .05$  threshold of alpha. Extraversion and neuroticism were also related to personal growth  $r = (.238)$  with the  $p$ -value  $=.000 < .05$  threshold of alpha. The result further showed that extraversion and neuroticism were correlated with positive relation  $r = (.489)$  with the  $p$ -value  $=.000 < .05$  threshold of alpha. Purpose in life was also correlated with extraversion and neuroticism  $r = (.179)$  with the  $p$ -value  $=.000 < .05$  threshold of alpha. However, the result of self-acceptance was not significant  $r = (.082)$  with the  $p$ -value  $=.111 > .05$  threshold of alpha. Thus, the researcher seems to conclude that extraversion and neuroticism were correlated with 5 out of 6 dimension of psychological well-being.

The researcher further computed all sub-elements of psychological well-being and tested its correlation with extraversion and neuroticism. The results of the correlation coefficient in the above table indicated that The results of the correlation coefficient in the above table indicated that extraversion was correlated with the overall psychological well-being of the students  $r = (.235)$ , with the  $p$ -value  $=.000 < .01$  threshold of alpha. Thus, the researcher attempts to conclude that extraversion was positively strong correlated with the psychological well-being.

#### IV. DISCUSSION

##### *Extraversion and Psychological Well-Being*

Personality dimension of extraversion implies an energetic approach towards the social and stuff human beings. It is characterized by being outgoing, energetic, talkative, sociable and assertive. An individual that scores high on extraversion trait tends to be a whizz seeker and hence engages in activity that will increase level of rousing. The result of the current study indicated that extraversion was correlated with the psychological well-being of the students  $r = (.234)$ , with the  $p$ -value  $=.000 < .01$  threshold of alpha. From this results, the researcher that extraversion was positively strong correlated with the psychological well-being. The similar results have been observed from various researches which found a direct relationship between extraversion and psychological well-being. The study of Kotov et al., (2010) posited that extraversion impacts various form of psychological well-being and also strongly linked to depression and anxiety. In addition, the study of Kokko et al., (2013) indicated the relationships between personality traits and psychological

wellbeing, especially the aspect extraversion. The results of Kokko et al., (2013) established the high correlation of the extraversion with the psychological well-being.

In this study, the researcher explored the correlation of the psychological well-being components with the neuroticism. Generally, the findings of this part indicated that all components of psychological wellbeing i.e. Autonomy, environmental mastery, personal growth, positive relation, purposive in life was significantly correlated with extraversion. While the on component "self-acceptance" was not correlated with psychological wellbeing. This result is in line with result of the study by Butkovic et al., (2012) who examined the correlation between personality and psychological wellbeing. The result of their study also suggested that extraversion was among of major dimension of personality traits that correlate with psychological wellbeing. More generally, dimensions of psychological well-being seem to be better predicted by personality traits especially the neuroticism and extraversion. Mohammadi et.al, (2019) believes that psychological and social compatibility is one of the most important elements that help the formation of normal life among the growing humans to achieve their proper adjustment with their environment and society especially in Sudan Context.

##### *Neuroticism and Psychological Well-Being*

There were various forms in the cross correlation between Big 5 personality and well-being. However, neuroticism was the largest and most consistent correlate of well-being. Neuroticism contrasts emotional stability and even-temperedness with negative emotionality such as feeling anxious, sad and tense. People that score high on neuroticism experience high level of consciousness and emotional instability. They usually disengage themselves in social situations because they experience a high level of nervousness in these settings. Mohammadi et.al, (2019) posited that highly neurotic individual experience unpleasant emotions such as depressions, anger and anxiety. The results of this study represents that the neuroticism was correlated with the psychological well-being of the students  $r = (.374)$ , with the  $p$ -value  $=.000 < .01$  threshold of alpha. Therefore, the researcher concluded that neuroticism and extraversion of the students were correlated to their psychological well-being. This is in line with the study; some previous studies have examined the relationship of the dimension of psychological well-being with the neuroticism and extraversion. The study of Siegler and Brummett (2000) elaborated the relationships of neuroticism with the psychological well-being among sample of 2,379 middle aged adults, primarily focusing on the big five personality factors. The result indicated that there is a strong positive relationship between neuroticism and well-being. Research reported by Steel, Schmidt, and Shultz (2008) also showed neuroticism, agreeableness and extraversion were related to subjective wellbeing. In addition, research studies by Kokko et al., (2013) examining middle adulthood relationships suggested that strongest associations were

between neuroticism, extraversion and openness in relation to wellbeing in adulthood, but that conscientiousness and agreeableness were also significant correlates of well-being.

The results of this study further elaborated that all components of psychological wellbeing i.e. Autonomy, environmental mastery, personal growth, positive relation, purposive in life was significantly correlated with neuroticism. Meanwhile, the component on “self-acceptance” was not correlated with neuroticism. Among the studies that supports the findings was the study of Colling and Hicks (2007) who also found close relationships between neuroticism variables and general psychological well-being with those at higher levels of well-being showing higher openness, extraversion and stress resilience (vs neuroticism) and lower conforming and competitive scores than those with lower levels of well-being.

Gale et al. (2013) additionally argued that extraversion and neuroticism at once prompted psychological properly-being. The researchers implemented Structural equation modeling to examine the records from 4583 members from MRC national Survey of fitness improvement. The results showed that extraversion had direct, fine results on both measures of properly-being. The effect of Neuroticism on each nicely-being and life delight changed into in large part indirect through susceptibility to psychological misery and bodily fitness issues.

#### *Contributions of the study*

The current research contributes to the literature of psychological wellbeing and also confirmed the roles of extraversion and neuroticism in determining the student’s psychological well-being. This study emphasized that the personality traits especially the neuroticism and extraversion are consistently correlated with the components of psychological well-being.

Many researchers in the past have associated extraversion and neuroticism to affect through reward and punishment psychobiological systems (Diener et al. 2010&Kahneman and Deaton 2010). Furthermore, the results of this study contributed to the understanding the nature of psychological well-being of higher education students in Sudan and the Eysenck neuroticism and extraversion instruments could be used in the future research to measure the students well-being.

The results of this study contributes to the understanding that the university based strategies should have aimed at the enhancement of student well-being may usefully include interventions that provide instruction in skills that will better equip students to manage the anxiety, moodiness and worry that characterizes neuroticism, as well as stress which may precipitate negative mood states and mental health disorders. Students might also benefit from interventions that equip them with skills to detach from negative thoughts and feelings and to increase their tolerance for them while engaging in actions aligned with their interests and values.

This study also contributes to the universities and colleges of higher education in Sudan through provision of the feedbacks on the higher institution psychological well-being. The educators, university counselors and the universities and colleges administrators may benefit in the results of this study to develop the interventions such as well-being awareness activities and program that could promote the psychological well-being among the higher education students.

#### V. CONCLUSION

In this study, the researcher investigated the relationship between extraversion, neuroticism and psychological well-being of undergraduate students as well as checked whether there is a significant difference in the psychological well-being among undergraduate students using their various genders. It worthwhile to mention that, this study may be considered as initial step to study the psychological wellbeing of the university students using Ryff’s Psychological Well-being scale in Sudan. In order to answer the research objective, the researcher used product moment correlation coefficient (PMCC) to determine the relationships between the variables. The findings of this section indicated that there was correlation between extraversion, neuroticism and the psychological well-being of the students. Therefore, the researcher concluded that neuroticism and extraversion of the students were correlated to their psychological well-being.

Therefore, since dimensions of personality traits i.e. neuroticism and extraversion are considered as correlated with students psychological well-being in Sudan and genders were not significant different in their well-being, the researcher recommends that intervention to enhance psychological wellbeing among the students in Sudan should concentrate on total well-being of the entire students within the premises of the university most especially and the entire youths in Sudan in order to promote the environment which will be beneficial to all citizens in Sudan.

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