

## **Students and Test Variables as Predictors of Undergraduates' Self-Compassion**

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*The study addresses the influence of students' variables (sex and class) on self-compassion of undergraduates in South-western Nigeria and also determined the influence of test variables (test-preparation strategies, test-wiseness and test-anxiety) on self-compassion of undergraduates in South-western Nigeria. These were with the view of providing information that will aid in improving self-compassion among undergraduates. A questionnaire that comprised four adopted scales was used for collection of relevant data for the study. Data collected were analysed using partial least square structural equation. The study adopted descriptive survey design. The population comprised all undergraduate in the study area. The sample comprised 2250 undergraduates selected using multi stage sampling procedure. The results showed that sex ( $\beta = .17$ ), class level ( $\beta = 0.55$ ) and test anxiety ( $\beta = 0.17$ ) at 0.05 significant level influenced self-compassion of undergraduates significantly while test preparation strategy and test-wiseness did not significantly influenced undergraduates' self-compassion. It is therefore concluded that students and test variables induce behaviors in line with maintaining and promoting good self-compassion.*

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### **I. Introduction**

Self-compassion as a concept seems to be an alternative to psychological well-being. Self-compassion is an attempt by an individual to be open to emotions that lead to suffering, showing love and being polite towards himself/herself, exhibiting understanding disposition and non-judgmental against mistakes and inadequacies, and to accept that his/her own life is the part of the common life of all mankind (Neff, 2003a). Self-compassion involves accepting of suffering, failure and inadequacies as being parts of being human, and that every individual, including oneself, deserves compassion (Goldstein and Kornfield, 1987). Neff, (2003a) identified three sub-dimensions that are involved in self-compassion as; being kind and understanding toward oneself rather than being harshly self-critical and judgmental, being able to see ones experiences as a part of humanity rather than isolating and alienating oneself from other people and having a balanced mindfulness rather than an over-identification with painful emotions and thoughts. The identified three sub-dimension were then defined by Neff (2003a) as; "self-kindness, awareness of common humanity and mindfulness". Self-kindness is being kind and understanding towards oneself instead of being harshly self-critical and judgmental.

The second sub-dimension of self-compassion called "Awareness of common humanity" as the second sub-dimension of self-compassion is an implication that none is perfect, everybody has the propensity to fail and to make mistakes (Neff, 2009). The third sub-dimension that is known as mindfulness is a pre-conceptual self-awareness that allows the individual to accept stressful and painful emotions without over-identifying with them (Martin, 1997; Neff, 2003a; Nisker, 1998; Rosenberg, 1999). Mindfulness is a balanced state of awareness that makes individual to follow one's emotions and thoughts without exaggerating, judging them negatively and not changing them (Neff, Hsieh and Dejitterat, 2005). Self-compassion has inverse relationship with concepts such as; self-recrimination, depression, anxiety, rumination and thoughts suppression while it has positive and direct relationship with social relation, emotional intelligence and self-determination (Neff, 2003a). some other researches showed that self-compassion is inversely related with performance-approach/avoidance aims (Akin,

2008) and submissive behaviour (Akin, 2009) whereas it manifests direct relationship with self-deception (Akin and Abaci, 2009) and learning-approach aims (Akin, 2008) are negatively related to.

In a classroom academic context, research reports showed that self-compassion associates with more adaptive learning goals (Neff, Hsieh, & Dejjitrat, 2005) and learning goals can be made different in terms of mastery (motivated by growth and understanding) and performance (motivated by fear of underperformance and desire to validate one's abilities; Grant & Dweck, 2003). Self-compassionate students reported less fear of failure and adopted mastery-oriented versus performance-oriented learning goals. Moreover, in the face of academic failure, self-compassionate students used more emotion-focused than avoidance-focused coping strategies (Neff et al., 2005). Terry, Leary, & Mehta, (2013) were of the opinion that self-compassion may help students to have better adjustment in transitioning to university life. In their study it was found out that students that have high self-compassion were less homesick and depressed, and reported greater decision satisfaction compared with students with lower self-compassion. Terry et al., (2013) report that social difficulties has less effect on highly self-compassionate students and that self-compassion moderate relationship between satisfaction with social and academic lives, and homesickness and decision satisfaction.

In the recent time across the globe the incidence of depression among students as a result of poor academic results is becoming too rampant and this may be associated with their self-compassion status in relation to their personal and test variables. It may therefore be necessary to determine how self-compassion relates with students' variable such as sex and class level as well as test variables such as test-wiseness, test preparation strategy and test anxiety. Thus, the specific objectives of the study are to:

- i. assess the influence of variables such as; sex and class on self-compassion of undergraduates in South-western Nigeria;
- ii. determine the influence of test-preparation strategies, test-wiseness and test-anxiety on self-compassion of undergraduates in South-western Nigeria.

**Research Question:** How consistent is the model consisting of sex, class level, test preparation strategy, test-wiseness and test-anxiety to the prediction of self-compassion of undergraduate students in Southwestern Nigeria with the empirical data?

### **Research Hypotheses**

The following research Hypotheses were raised from the objectives of the study.

1. Sex has no significant influence on Self-compassion of Undergraduate students
2. Class level has no significant influence on Self-compassion of Undergraduate students
3. Test preparation strategy has no significant influence on Self-compassion of Undergraduate students
4. Test wiseness has no significant influence on Self-compassion of Undergraduate students
5. Test anxiety has no significant influence on Self-compassion of Undergraduate students.

## **II. Methodology**

The descriptive survey a social scientific research design that is use in the study of a population by using samples from the population was adopted for in the present study. This design was adopted because the researchers were interested in obtaining data from a large sample without any manipulation. In this study, students and test variables are the independent variables while students' self-compassion is the dependent variable. The population of the study comprised 32.5 million undergraduate students in Private, Federal and State Universities in Southwestern Nigeria. The study sample comprise 2,250 undergraduates that were selected through multistage sampling procedure. Three States were selected randomly from the Southwestern Nigeria and with the use of stratified random sampling technique with school ownership (Federal, State and Private) serving as bases for stratification, three Universities were selected from each of the selected States. From each school, convenient sampling was used to select 250 students to make a sample size of 2,250.

A questionnaire that comprised four adopted scales; (University Undergraduates' Self-Compassion Scale (UUSCS) Test-preparation Strategies Scale (TPSS), Test-Wiseness Scale (TWS) and Test Anxiety Scale (TAS)) was used for collection of relevant data for the study. Data collected were analysed using partial least square structural equation

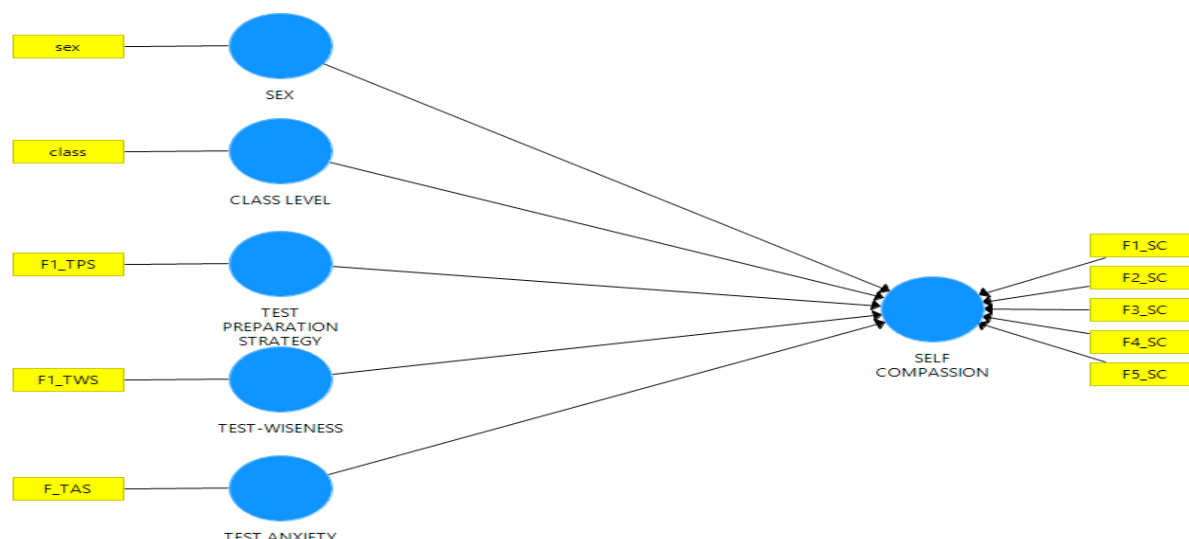
## **III. Results**

**Research Question 1:** How consistent is the model consisting of sex, class level, Test preparation strategy, Test-wiseness and test anxiety to the prediction of self-compassion of undergraduate students in south western Nigeria with the empirical data?

To answer this research question, the 21-item SCS, Test preparation strategy, Test-wiseness questionnaire were administered to undergraduate students and the responses were subjected to two major analyses. One, the responses were subjected to item response theory model for the calibration of the self-

compassion, test anxiety, test-wiseness scores while sex and class level were converted to dummy variables. Thereafter the calibrated score was used for the predictive model. The dependent variable, self-compassion was a multidimensional construct formed by five distinct sub-constructs. As a result, partial least square structural equation modelling was used instead of multiple regression models. This is because multiple regressions do not have the capability to model a multidimensional construct.

To assess the consistency of the hypothesized data with the empirical data, the hypothesized model was subjected to composite based partial least square structural equation. Unlike the covariance based structural equation modelling where Root Mean square error of approximation (RSMEA), Normed fit index (NFI), Tucker-Lewis index (TLI), Chi-square among others are used for the assessment of the fit of a model, Partial least square model fit assessment is a two-stage process. The first is the measurement model assessment and the second is the structural model assessment. The result is presented as follow.



**Figure 1: Partial least square structural equation model of sex, class level, test preparation strategy, test-wiseness, test anxiety and self-compassion of undergraduate students in south western Nigeria**

Figure 4.1.3 showed the PLS-SEM for sex, class level, test preparation strategy, test-wiseness, test anxiety and self-compassion of undergraduate students in south western Nigeria. The variable showed a formative outlook. Therefore, the measurement model was a formative one and the measurement model assessment demands for formative model assessment were used to judge the model. These demands include assessment of: indicator collinearity and statistical significance and relevance of the indicator weights (Hair, Hult, Ringle and Sarstedt, 2017). According to Hair et al. (2017), VIF value greater than or equal to 5 is an indication of existence of collinearity (i.e., redundancy of a construct) and values less than 5 indicates no collinearity issue. In the case of statistical significance and relevance of the indicator weights, outer weight significantly greater than zero are required for a good result. Hair et al. (2017) recommended that construct having insignificant outer weight and loading less than 0.5 should be removed from a model. The author added that when the outer weight of a construct is insignificant and the outer loading of such construct is greater than 0.5, the construct should not be eliminated from the model. The result of the assessments is presented as follow

**Table 1: collinearity of the indicators in the model**

	VIF
Class	1.00
Sex	1.00
F1_TPS	1.00
F1_TWS	1.00
F_TAS	1.00
F1_SC	2.13
F2_SC	3.95
F3_SC	4.14

F4\_SC      3.06

F5\_SC      3.44

Table 2 showed that all the constructs in the hypothesized model were relatively important (all construct have VIF value less than the criterion, 5). The result showed that all the construct in the model were relevant in the explanation of sex, class level, test preparation strategy, test-wiseness, test anxiety and self-compassion of undergraduate students in south western Nigeria. The implication of the result is that all the variables are viable for the causal explanation until otherwise proven by other assessment. Thus, the second assessment, significance of indicators weight was assessed. The result is presented in Table 3.

**Table 3: Indicator weights' statistical significance and relevance**

INDEPENDENT VARIABLES	Beta weight B	Standard Deviation (STDEV)	T ( O/STDEV )	Statistics P Values	loading
SEX	0.21	0.093	2.27	0.02	0.55
CLASS LEVEL	0.29	0.110	2.66	0.01	0.70
TEST PREPARATION STR.	-0.06	0.112	0.55	0.58	0.81
TEST WISENESS	0.64	0.097	6.59	0.00	0.86
TEST ANXIETY	0.26	0.113	2.25	0.02	0.88

N.B: F<sub>1</sub>= SEX, F<sub>2</sub>= CLASS LEVEL, F<sub>3</sub>= TEST PREPARATION STRATEGIES, F<sub>4</sub>= TEST WISENESS, F<sub>5</sub>= TEST ANXIETY.

Table 3 showed the indicator weights and significance and factor loading of the various constructs in the model. This measure shows the absolute contribution to (or absolute importance for) the underlying construct. The table showed that F1 ( $\beta = 0.21$ ,  $p < 0.05$ ), F2 ( $\beta = 0.29$ ,  $p < 0.05$ ), F4 ( $\beta = 0.64$ ,  $p < 0.05$ ) and F5 ( $\beta = 0.26$ ,  $p < 0.05$ ) had significant absolute importance to the determination of self-compassion of undergraduate students. Although, the contribution of F3 was not statistically to the determination of self-compassion of undergraduate students, the loading of the construct was greater than 0.5. This shows that F3 was equally important in the determination of self-compassion of undergraduate students. The result showed that all the sub-constructs of self-compassion were important to the determination of undergraduate self-compassion. The implication of the result is that the entire construct are viable for the explanation of the causal model. Therefore, the structural model assessment was carried.

### Structural equation model assessment

In orderto assess the structural model, Standard assessment criteria, which should be considered according to Hegner-Kakar, Richter, and Ringle (2018), include the blindfolding-based cross-validated redundancy measure  $Q^2$ . The  $Q^2$  is a measure which establishes the relevance of the endogenous variable(s) in a model. It is also called the predictive relevance of endogenous variables in a model. An endogenous variable is considered relevant to a model if  $Q^2$  value is greater than zero. Table 4 showed the redundancy measure.

**Table 4: Coefficient of determination and predictive relevance of the endogenous variable of the model**

	SSO	SSE	$Q^2 (=1-SSE/SSO)$
CLASS LEVEL	550.00	550.00	
SELF COMPASSION	2750.00	2081.42	0.24
SEX	550.00	550.00	
TEST ANXIETY	550.00	550.00	
TEST PREPARATION STRATEGY	550.00	550.00	
TEST-WISENESS	550.00	550.00	

Table 4 showed the predictive relevance of the only endogenous variable in the model. The table shows that self-compassion  $Q^2$  value of 0.24. This value was greater than the benchmark value, 0. The result showed that self-compassion scale was very important in the predictive model consisting of sex, class level, test preparation, test wise-ness, test anxiety and self-compassion.

The results showed that the predictive model consisting of sex, class level, test preparation, test wise-ness, test anxiety and self-compassion of undergraduate students was consistent with the empirical data. Therefore, the percentage of variance accounted for self-compassion of undergraduate students by sex, class level, test preparation, test wise-ness and test anxiety was assessed. Figure 2 presented the result.

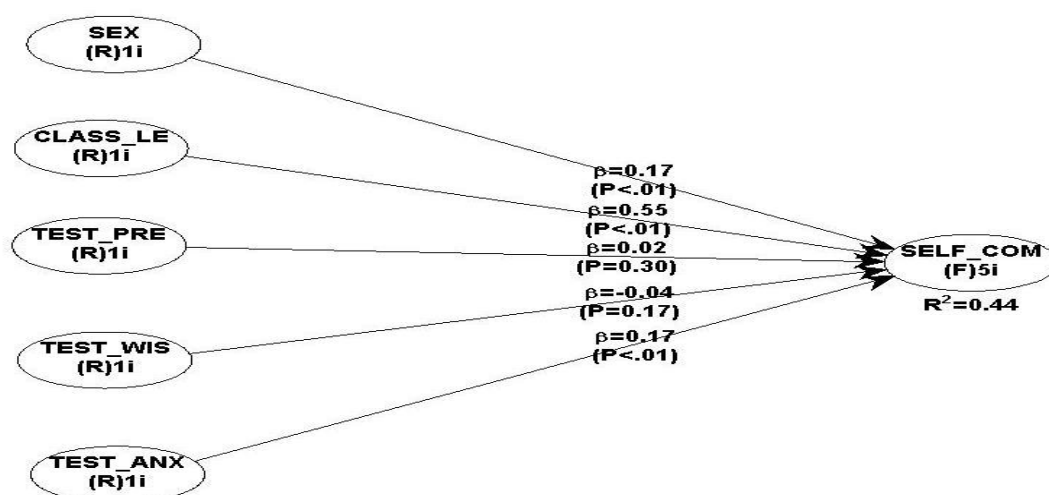


Figure 2: Predictive power of sex, class level, test preparation, test wise-ness and test anxiety on self-compassion of undergraduate students

Figure 2 showed the predictive power of sex, class level, test preparation, test wise-ness and test anxiety on self-compassion of undergraduate students. The value on the arrow head arrows are the path coefficients, while the value below the circle labeled SELF\_COM is the  $R^2$  adjusted value. The result showed that sex, class level, test preparation, test wise-ness and test anxiety jointly accounted for 44.0% of the variance observed in self-compassion of undergraduate students in south-western, Nigeria.

**Hypothesis 1:** Sex has no significant influence on self-compassion of undergraduate students

The hypothesis was tested at 0.05 level of significance. Figure 2 shows that the path coefficient of sex on self-compassion was 0.17 with  $p < 0.01$ . The result shows that sex significantly predicted self-compassion among undergraduate students ( $\beta = 0.17, p < 0.05$ ). Therefore, hypothesis which states “sex has no significant influence on self-compassion of undergraduate students” was rejected. Sex had significant influence on self-compassion of undergraduate students. The result showed that one unit standard deviation increase in students’ sex increases their self-compassion by 0.17 unit. The implication of the result is that being a female student increases students’ self-compassion.

**Hypothesis 2:** Class level has no significant influence on self-compassion of undergraduate students

The hypothesis was tested at 0.05 level of significance. Figure 2 showed that the path coefficient of class level on self-compassion was 0.55 with  $p < 0.01$ . The result shows that class level significantly predicted self-compassion among undergraduate students ( $\beta = 0.55, p < 0.05$ ). Therefore, hypothesis which states “class level has no significant influence on self-compassion of undergraduate students” was rejected. Class level had significant influence on self-compassion of undergraduate students. The result showed that one unit standard deviation increase in students’ class level, increases their self-compassion by 0.55 unit. The implication of the result is that as students move from 100 level to a higher level, their self-compassion increases significantly.

**Hypothesis 3:** Test preparation strategy has no significant influence on self-compassion of undergraduate students

The hypothesis was tested at 0.05 level of significance. Figure 2 showed that the path coefficient of test preparation strategy on self-compassion was 0.02 with  $p = 0.30$ . The result shows that test preparation strategy has no significant predictive power on self-compassion among undergraduate students ( $\beta = 0.02, p > 0.05$ ). Therefore, hypothesis which states “Test preparation strategy had no significant influence on self-compassion of undergraduate students” was not rejected. Test preparation strategy has no significant effect on the prediction of self-compassion of undergraduate students.

**Hypothesis 4:** Test wiseness has no significant influence on self-compassion of undergraduate students

The hypothesis was tested at 0.05 level of significance. Figure 2 showed that the path coefficient of test wiseness on self-compassion was -0.04 with  $p = 0.17$ . The result shows that test wiseness has no significant predictive effect on self-compassion among undergraduate students ( $\beta = -0.04, p > 0.05$ ). Thus, hypothesis which state “Test wiseness has no significant influence on self-compassion of undergraduate students” was not rejected. Test wiseness has no significant effect on the prediction of self-compassion of undergraduate students.

**Hypothesis 5:** Test anxiety has no significant influence on self-compassion of undergraduate students

The hypothesis was tested at 0.05 level of significance. Figure 2 showed that the path coefficient of test anxiety on self-compassion was 0.17 with  $p < 0.01$ . The result shows that test anxiety significantly predicted self-compassion among undergraduate students ( $\beta = 0.17, p < 0.05$ ). Therefore, the hypothesis which states that “Test anxiety has no significant influence on self-compassion of undergraduate students” was rejected. Test anxiety had significant influence on self-compassion of undergraduate students. The result showed that one unit standard deviation increase in students’ test anxiety, increases their self-compassion by 0.17 unit. The implication of the result is that as students test anxiety increase, their self-compassion significantly.

#### IV. Discussion

Finally, findings showed that sex had significant influence on self-compassion of undergraduate students. The result showed that one unit standard deviation increase in students’ sex increases their self-compassion by 0.17 unit. The implication of the result is that being a female student increases students’ self-compassion. Because females are often said to have a more interdependent sense of self and to be more empathetic than males, one might expect women to be more self-compassionate than men. The study is in agreement with that of (Neff, 2003) who reported that women have significantly less self-compassion than men. Differences on the self-compassion subscales indicated that in particular, women were more likely than men to engage in self-judgment, to feel isolated when confronted with painful situations, and to be more over-identified and less mindful of their negative emotions. These results are consistent with past findings that females tend to be more critical of themselves and tend to ruminate on their negative feelings more than males do (Leadbeater, Kuperminc, Blatt, & Hertzog, 1999; Nolen-Hoeksema, Larson & Grayson, 1999). Class level had significant influence on self-compassion of undergraduate students. The result showed that one-unit standard deviation increase in students’ class level, increases their self-compassion by 0.55 unit. The implication of the result is that as students move from one level to a higher level, their level of self-compassion increases significantly. Test anxiety had significant influence on self-compassion of undergraduate students. The result showed that one-unit standard deviation increase in students’ test anxiety increases their self-compassion by 0.17 unit. The implication of the result is that as students test anxiety increase, their self-compassion increases significantly, hence the null hypotheses were rejected. However, test preparation strategy and test-wiseness had no significant predictive power or influence on self-compassion among undergraduate students; hence the null hypotheses were accepted.

#### V. Conclusion

In view of the findings of the present study, it is concluded that students and test variables induce behaviors in line with maintaining and promoting good self-compassion. Females tend to be more critical of themselves and tend to ruminate on their negative feelings more than males do. However, increase in students’ class level irrespective sex, increases their self-compassion. The present study like previous studies had some limitations including external validity, and generalization should be made with caution. It is therefore suggested that researchers should make attempt to expand the studies in this regard and use experimental methods to determine the effects of students and test variables on self-compassion of undergraduate students.

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