MODELING IMPACT OF SOFT SKILLS ON ACADEMIC PERFORMANCE AMONG UNIVERSITY UNDERGRADUATES IN OGUN STATE, NIGERIA

By

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Abstract

Behaviours embedded in soft skills are parts of the factors that contribute to students' academic performance. Educational productivity theory underpins the study. The study modeled the contribution of soft skills to academic performance of university undergraduates in Ogun State. A non-experimental research design was implied. Six lecturers were engaged in a discussion to determine the soft skills and the indicators that students were expected to possess to excel academically. University Undergraduate Soft Skills Self-Assessment Scale (UUSSSAS) was used to collect data from 603 (males=360, females=243) undergraduates in public and private Universities in Ogun State. Structural Equation Model (SEM) was employed using Smart PLS 4.0 and IBM SPSS 23 to factor analyse, determine the measurement, structural models of the scale and the contribution of soft skills to students' academic performance. Five major themes clusters emerged from the analysis: communication skills, time management, teamwork, self-discipline and social capital. UUSSSAS was utilized and the five soft skills contributed a total of 13.4% to students' academic performance. Results have implications on the students' behaviour to skills that aid reading habit and theory of educational productivity. Findings corroborate educational productivity theory and guide both students and institutions in working to improve the students' academic performance.

Key words: ***soft skills, performance, academic, undergraduate, educational productivity***

Introduction

Soft Skills is a generic name given to the non-cognitive skills, which are natural habits or endowments. These skills are social graces and they can be acquired or learnt by improving on oneself, critical observation and learning from others who already possess the skills. They are crucial to success of an individual in all spheres of life; be it in academics, business, worship centres and workplace because it is

transversal. These skills entail emotional intelligence, personality development skills, self-regulation skills, inter and intra personal skills. Soft skills aid an individual to get along at all places and to get ahead during interview at the point of being hired as well as in the workplace. As a result of this, it is referred to as employability skills that are to be recon with at the labour market. Doherty (2023) affirms that the rebranding of these skills to power skills is an acknowledgement of the power of interpersonal skills, communication, collaboration, critical thinking and emotional intelligence. Doherty amplifies that referring to these skills as 'soft' has the ability to undermine the importance of the skills.

The importance of soft skills for students is tremendous, both to their studies and their future careers. Soft skills are important for students due to two main reasons; it plays a crucial role in forming good relationship with their mates, building a network with seniors and establishing trust in their mates. These skills improve employability of the students after their academic. Soft skills have crucial value to the University undergraduates in their studies because they are preparing to be experts in their chosen fields or professional careers. In the other side, the Employers of labour expect University graduates to behave adequately and get along with their coworkers when they are employed. In addition, they are expected to perform optimally in the services they render at the workplace. For example, they are expected to have possessed the ability to be able to; express their thoughts and feelings, cooperate with other coworkers, be flexible in order to be able to adapt to changes, self-management, time-management, think critically, solve problems, work in a group successfully and principled in interpersonal relationships.

On the other hand, researchers such as Wallace in Kusmiran (2015) concludes that soft skills which are personal qualities and interpersonal skills are influential to academic success and therefore, it should be implemented in education. There are many reasons why students need to actively develop soft skills and integrate the skills into their behavioral system during their studies. According to () .Students who recognize the importance of soft skills on time are able to master their studies more successfully, complete their student obligations smoothly, make more acquaintances that may prove useful in the future, and better present themselves to their lecturers who can also play an important role in their future careers. …. () is of the opinion that Soft skills are in direct correlation with improved academic achievement, so students should develop them both for the sake of their education, and for the sake of their professional careers.

Experience has shown that students are expected to possess the following skills for a better performance. Such skills are:

- Communication (oral and written)
- Creativity
- Problem-solving
- Team work/Collaboration
- Adaptability
- Time-Management
- Interpersonal skills
- Self-discipline

Besides, students are potential workers that will join the academia, industries and all other fields of workplace after graduation. Therefore, it is very important that they develop desirable and appropriate forms of behavior, traits and skills to match their social and educational status. As such, they should be examples of well-developed and balanced individuals with virtues, values and qualities expected from individuals with their education. However, Shaheen, Zhang, Shen and Siti (2012) reported that students do not possess the relevant soft skills needed to improve their academic performance. Consequently, there is now more pressure on academic institutions to enhance soft skills of their students. On the other hand, Obilor (2013) found that soft skills contribute to academic achievement to a large extent.

Problem Statement

The educational productivity theory has revealed that there are combinations of factors that lead to academic success which behaviour is one of it. Soft skills consist of different innate behaviours that can be learnt and that are crucial to students' academic success. Literature have shown that soft skills are important for students to acquire good academic performance and their future professional roles. Moreover, literature have established that academic excellence has been attributed to students or learners' mastery of the hard skills because of reading habit as well as behaviours which were captured under emotional intelligence in which soft skills are among. Researchers have also clamored that there is need to include teaching and assessment of soft skill in the school curriculum at all levels of education in Nigeria due to its contributions to good academic performance and character formation of students or learners.

However, there are no empirical studies to substantiate the soft skills that are relevant to academic performance and the level of soft skills contribution to academic performance. In the light of the foregoing, this study modeled empirically the soft skills that positively affect academic performance of the undergraduates in Ogun State, Nigeria.

Research Question/Hypothesis

The study sought to answer the following research questions and hypothesis:

1. How consistent is the University Undergraduate Soft Skills Self-Assessment Scale (UUSSSAS)?
2. What are the composite and relative contributions of the identified soft skills; a) Communication skills b) Self-Discipline c) Time Management d) Teamwork e) Social Capital to academic performance?
3. Which of the soft skills contributes most to University undergraduates' academic performance?
4. H1: Soft skills positively affect academic performance.

Methodology

Participants

The study is a non-experimental research design that adopted survey research type. The population consists of all University undergraduates in both Public and Private Universities in Ogun State from 100 to 500 level across all courses in each University. Multistage sampling procedure was used. The Universities were classified into three types by ownership (Federal, State and Private) and purposive sampling technique was used to select a University from each class of type of University. Therefore, seven (7) Universities participated in the study. Three Universities for validation of the scale, one for pilot study and three for the utilization of the scale. The sample for utilization of the scale had a demographic profile of 360 (59.7%) males and 243 (40.3%) females. A total number of nine hundred (900) students were used in the study.

Instrumentation

A self-assessment four point scale was developed named University Undergraduate Soft Skills Self-Assessment Scale (UUSSSAS). The scale items were developed using inductive and deductive methods to generate the items. Discussion method was used to identify the relevant soft skills that can contribute to academic success and the indicators of each. Three experts were used to review the initial 30 items. 25 items survived the experts' judgment. A sample of six hundred and three (603) students were randomly selected from the three groups of Universities to establish; the factors of the scale, model fit indices, convergent validity of the items in the scale, discriminant validity and Average Variance Extracted (AVE). The completion time of the scale was about 7-8 minutes. No missing data and outliers that were found in the data collected, indicating a response rate of 100%.

Data Analysis

The study used the Statistical Package for Social Science (SPSS) and Smart Partial Least Square Structural Equation Modeling (SPLS-SEM) approach as the analytical data technique. Exploratory Factor Analysis was used to determine the number of factors in the initial 25 items. Thereafter, a pilot test of the scale was carried out in a similar University that did not participate in the study. Finally the scale was utilized on a sample of 300 students that were randomly selected from three institutions (federal, state and private). At this stage, 16 items survived from the 25 items and these items constitute the final scale, UUSSSAS. The final self-assessment scale had two sections, section A consists the bio-information of the students that participated in the study which consists of gender, age, Class level, Cumulative Grade Point Average (CGPA) and type of institution. Section B of the scale consists of the items that measured soft skills. The 25 item scale was factor analysed. The items that survived gave 5 themes and were named Communication Skills (CS), Self-Discipline (SD), Team Work (TMW), Time Management (TM) and Social Capital (SC). A sample of 604 was finally selected from the three levels of University (Federal, State and Private) to participate in the study.

SPLS was applied for the, measurement and structural analysis. The SPLS results were estimated using the two-step approach by Anderson and Gerbing (1988). First, there is an assessment of the outer model quality through reliability and validity, and second, an estimation of the inner model for hypotheses testing. The rule of thumb indicated by Hair et al. (2017) was followed in assessing the outer and inner model results. The bootstrap method was used to evaluate the significance of the hypotheses following the rule of thumb by Hair et al. (2017). Finally, UUSSSAS was modeled as the first-order reflective constructs.

RESULTS

Research Question 1: How consistent is the University Undergraduate Soft Skills Self-Assessment Scale (UUSSSAS)?

To answer this research question, the study analyzed the data using SPSS and SPLS to determine the factors, sample adequacy and the outer model of the University Undergraduate Soft Skills Self-Assessment Scale respectively. The validity and the reliability of the scale were as well determined. Sample adequacy was confirmed using Bartlett's sphericity test which revealed that the independent model chi-square test was statistically significant (X^2 = 253 df = 0.00, $p<0.05$) and the Kaiser-Meyer-Olkin (KMO) index was 0.648. This shows that the items in (USSAS) are correlated. Again, from the total variance explained, eight eigen values were greater than 1 which means that items of the scale gathered under eight components. However three components did not have up to three items that the values were up

to 5.0. Hence, the factors were rejected. This did not fulfill one of the assumptions of EFA. In furtherance of the analysis of the scale, the outer model using the quality criteria for constructs as stated by Hair et al. (2017) was conducted by the means of SPLS. They include Factor Loadings (FL), Composite Reliability (CR), Average Variance Extracted (AVE) and discriminant validity. The Fornell Lacker's result showed that all the items were above the recommended cut-off score of .50, demonstrating item reliability. The CR scores, which evaluate the internal consistency reliability, were above the recommended .70. Thus, construct reliability was established. The AVEs score exceeded the cut-off mark of .50, suggesting that convergent validity was achieved. Further, discriminant validity using the Fornell-Larcker criterion showed that the constructs were conceptually distinct as each construct's AVE was higher than the inter-construct correlations. Having achieved satisfactory reliability and validity values in line with the rule of thumb by Hair et al. (2017), the study advanced to the second step to estimate the structural model.

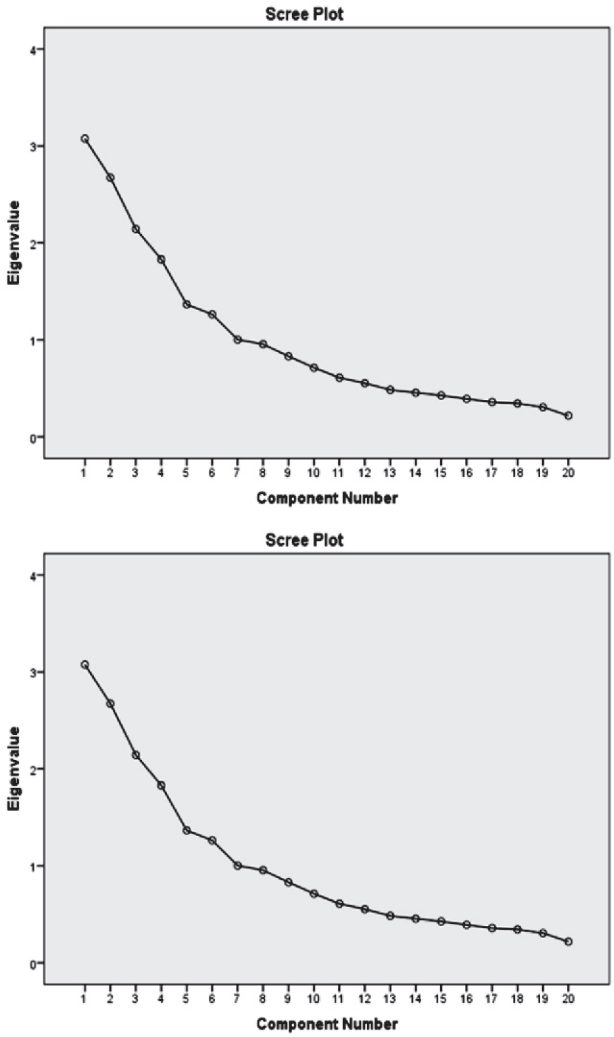

Figure 1.1: Scree plot analysis of the scale item

Figure 1.1 shows the scree plot analysis of the scale, University Undergraduate Soft Skills Self-Assessment Scale (UUSSSAS). The figure depicts that the scale has 5 factors.

Table 1.1: Measurement model of University Undergraduate Soft Skills Self-Assessment Scale (USSSSAS) outer loadings

Item	1 CM	2 SD	3 SOC	4 TM	5 TMW
I interpret examination questions correctly	0.757				
I speak English fluently	0.927				
I understand English language excellently	0.931				
I have personal timetable		0.989			
I visit Library regularly to read		0.564			
I use my Lecture note		0.989			
I have very strong social ties			0.726		
I network easily			0.772		
I have access to social capital			0.657		
I have very strong social ties			0.613		
I do my assignment regularly				0.615	
I read beyond the lecture notes given by the lecturers				0.911	
I attend all my lecture classes				0.913	
I like to read with my mates					0.744
I belong to a social group in the University					0.652
I like to attend tutorials					0.709
I like to read with my mates					-0.675

Extraction Method: Principal Axis Factoring, Rotation Method: Promax with Kaiser, Normalization

***CM = Communication skill, SD = Self-Discipline, SOC = Social Capital, TM = Time Management, TMW = Team Work**

Table 1.1 depicts the retained factors with the items that loaded on each. The reveals the five (5) factors and the value of each item ranged from 0.5 above. This shows that the items loaded very well on the factor. Each factor was scrutinised and named as above.

Table 1.2: Construct Reliability and Validity of University Undergraduate Soft Skills Self-Assessment Scale (USSSSAS)

Construct	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
CM	0.841	0.907	0.766
SD	0.969	0.858	0.696
SOC	0.657	0.787	0.530
TM	0.74	0.861	0.681
TMW	0.64	0.598	0.540

Table 1.2 shows the composite reliability and the Average Variance Extracted (AVE) using SmartPLS. Using Fornell and Lacker method of finding AVE of the factors, the AVE of each factor is greater than 0.5; it ranges from 0.53 and 0.76. This means that the factors correlate within their parent factor. This can be interpreted that the convergent validity is adequate. The composite reliability of each factor is above 0.5. CM, SD, SOC, TM and TMW have 0.90, 0.85, 0.78, 0.86 and 0.59 respectively.

Table 1.3: Discriminant Validity of University Undergraduate Soft Skills Self-Assessment Scale (USSSSAS)

CM	**0.875**				
SD	0.342	**0.835**			
SOC	0.166	0.196	**0.695**		
TM	0.062	0.177	0.137	**0.825**	
TMW	0.262	0.306	0.077	0.269	**0.696**

Table 1.3 shows the evidences of the UUSSS sub scales' discriminant validity. This shows that the measure in each of the sub scale is different from each other. The discriminant validity of each sub scale is as follows: CM = 0.875, SD = 0.835, SOC = 0.695, TM = 0.825 and TMW = 0.696 and the correlation square are: 0.765, 0.697, 0.483, 0.680 and 0.484 respectively. The AVE values are higher than the correlation. Thus the discriminant validity established.

Research Question 2: What are the composite and relative contributions of the identified soft skills; a) Communication skills b) Self-Discipline c) Time Management d) Teamwork e) Social Capital to academic performance?

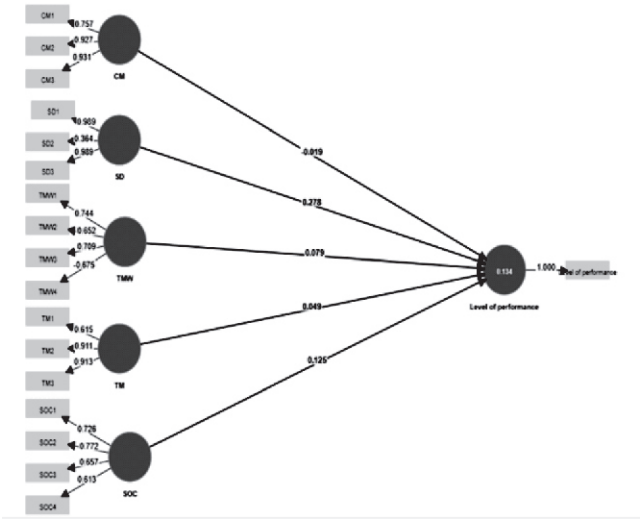

Figure 2: Structural Model with Path Co-efficient of University Undergraduate Soft skills Scale

Source: Adapted from Smart Partial Least Square Package Result

To determine the composite and relative contributions of the identified soft skills; a) Communication skills b) Self-Discipline c) Time Management d) Teamwork e) Social Capital to academic performance, SmartPLS was employed to build the outer and structural models. The analysis of the outer model reveals the convergent validity and established the factor loadings of the reflective indicators with acceptable AVE which are above 0.5.

The composite contribution was assessed by estimating the path coefficients in the structural model in figure 2. The model reveals that Self Discipline (SD) (0.278) has the strongest effect on level of performance followed by Social Capital (SOC) (0.125). Other factors: CM, TMW and TM have -0.019, 0.079 and 0.049 respectively. The five factors. That is skills jointly explain R2 value of 13.4% of the variance in level of performance.

Research Question 3: Which of the soft skills contributes most to University undergraduates' academic performance?

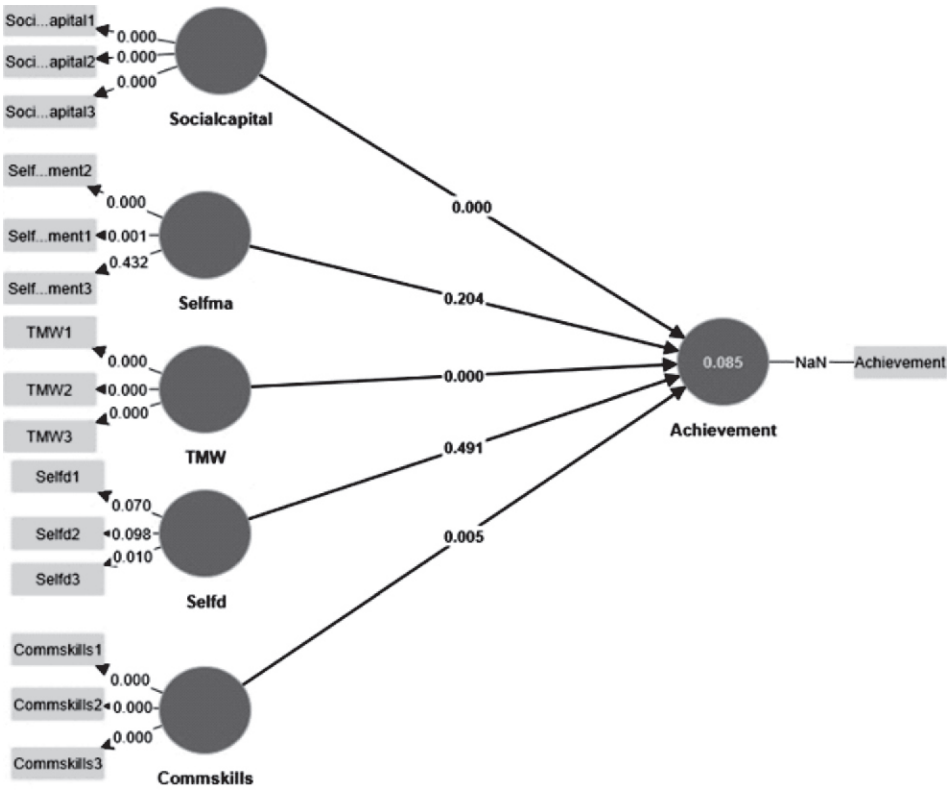

Figure 3: Structural Model with T Values of the Sub-Scale of USSSAS
Source: Adapted from Smart Partial Least Square Package Result

The path coefficients of the model were subjected to test of significance at 0.05 level of significance with two tails to establish the relative contributions of the soft skills. The result of the analysis is shown in figure 3. It reveals that only the Communication path to achievement is significant to achievement. That is, communication has more influence on academic achievement.

Table: 2. Structural Model Path Coefficient

	Original sample b (O)	Sample mean (M)	Standard deviation	T statistics	P values
Commskills-> Achievement	-0.074	-0.08	0.029	2.567	0.005
Selfd -> Achievement	-0.002	0.008	0.064	0.024	0.491
Selfma -> Achievement	0.066	0.071	0.08	0.827	0.204
Socialcapital-> Achievement	0.191	0.205	0.058	3.306	0
TMW -> Achievement	0.2	0.257	0.046	5.406	0

The composite contribution of the soft skills was assessed by estimating the path coefficients in the structural model in figure 2.2 The result indicate that all the soft skills jointly explain R2 value 13.4% of the variance in soft skills. The implication is that five soft skills contribute a total of 13.4% to academic performance and out of the five skills …. (0……)Has the strongest effect on academic performance followed by (0…)

Hypothesis H1: Soft skills positively affect academic performance.

Table 3: Cumulative Grade Point Average (CGPA) of University Undergraduates Academic Performance

CGPA	Frequency	Percentage
1.00 - 1.49	9	1.5
2.40 - 3.49	140	23.2
3.50 - 4.49	255	42.3
4.50 - 5.00	199	33.0
Total	**603**	**100.0**

Table 3 shows the performance of the students based on their Cumulative Grade Point Aggregate (CGPA). Students with third class, Second Class Lower, Second Class Upper and First Class are 1.5%, 23.2%, 42.3% and 33.0% of the sample respectively. This depicts that most of the students are on Second Class Upper with 42.3% followed by first class with 33% Second class lower 23.2%. This means that most of the students performed very well academically. Only 1.5% is on third class.

Discussion

The positive relation of 13% between soft skills and academic performance of University undergraduate students agreed with the opinion of Jordan (2020) which states that individual pe4rformance is impacted by some emotional intelligence more than some areas because emotional intelligence composed of different branches. That concurred with Shaheen, Zhang, Shen and Siti (2012) that report that students do not possess the relevant soft skills needed to improve their academic performance. However, considering the performance of the students in this study and level of the self-assessment of the skills that contribute to their performance, students have shown that there are some other factors that contribute to their performance. This is in support of the walberg theory of performance. This indicates that soft skills are not the only factors that contribute to academic success among University Undergraduates. There are other factors that contribute to academic achievement as posit by Walberg.

Again the contribution of the soft skills that were measured to performance varies from each other because soft skills entail various branches. This agrees with the opinion of Jordan (2020) which states that individual performance is impacted by some emotional intelligence more than some areas because emotional intelligence composed of different branches.

Besides, the structural model reveals that all the skills that were modeled do not have predictive association with performance. The implication of this on the University undergraduates in Ogun State is that the students do not possess the necessary skills that could positively aid their academic achievement. This finding is in tandem with the finding of Shaheen, Zhang, Shen and Siti (2012) that revealed that students do not possess the relevant soft skills needed to improve their academic performance.

Conclusion

The purpose of this study was to model the impact of soft skills on academic performance of the undergraduate students in Ogun State universities. This study strongly supported the theoretical model of academic achievement posited by Walberg. The theory classified eleven 11 influential domains of variables that influence academic achievement which social-behavioral attributes is one of the variables. The current findings suggest that academic achievement among University undergraduate students in Ogun State is not largely associated with possession of soft skills which deals with the social-behavioural attitude because it contributed 13% influence to academic performance. This is suffice to conclude that students' behaviours and attitude that constitute soft skills cannot in isolation

determine academic performance of students and that other factors as revealed by Walberg's theory contribute to students' academic performance. Again, this study revealed that amid the soft skills that were modeled and contributed a total of 13.3% influence in this study, Self-Discipline and Social Capital contributed more to students' academic performance with 27 % and 12% respectively.

Recommendation

Based on these findings, the study recommends that University policy makers should introduce teaching and assessment of soft skills into the University curriculum to enable the University students to acquire the soft skills that are needed to be more successful in their academics and invariably employable in the labour market at the end of their programme from the University. In spite of the 13% of the contribution of soft skills to academic performance, Students should be encouraged to be self-disciplined and interact with their course mates and other students more, since self-discipline and social capital contributes more to academic achievement than other soft skills that were assessed in this study.

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