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DEVELOPMENT OF SOFT SKILL SCALE (SSS) FOR EDUCATIONAL AND INDUSTRIAL USE IN NIGERIA

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ABSTRACT: *Globally, soft skill is a sought-after skill in the workplace. While this is obtainable and trendy at the global level, Nigeria should not be an exception. Hence, the present study developed Soft Skill Scale (SSS) for educational and industrial use in Nigeria. Triangulation research design based on Classical test theory was used to sample 887 participants from both educational and industrial sectors in Nigeria. One hundred and fifty (150) initial items of SSS were developed. Through Principal Component Analysis (PCA), the items were reduced to 110 at pilot study and 69 at post field level. To further affirm the validity of the instrument, a post-pilot study was carried out on 347 respondents. Analysis was done with factor analysis, Pearson Product Moment Correlation as well as Cronbach Alpha method. The findings of the study showed that 69 items loaded into the five factors. This includes communication 14 items, Organization 14 items, Teamwork 21 items, Creativity 7 items and Adaptability 13 items. Subscale-total correlation at both post-field and post-pilot phases yielded 0.73/0.61, 0.83/0.84, 0.89/0.85, 0.76/0.68, and 0.65/0.63 for communication, Organization, Teamwork, Creativity and Adaptability respectively. Cronbach Alpha reliability for full SSS was .96 at post-field and 0.95 at post-pilot phase. The post-pilot validity check all affirmed that SSS was highly valid. Based on this, it was recommended among others that SSS should be recognized and used in school and industrial settings*.

KEYWORDS: Soft Skills, Validity, Reliability, Test

INTRODUCTION

It is inevitable that Soft Skills have emerged as a requisite human capital needs in organizations today. In the society today and especially in Nigeria, it is observed that for many organizations, paper and on-the-job competence (hard skills) are usually top of the list when it comes to hiring. The researcher has carefully noted that emphasis is always placed on the specific skills that are specific to the job itself, as well as the training or experience needed to perform the job well with little or no attention of underlying skills that are needed to carry others along. To be precise, while emphasis is laid on hard skills which involve the technical abilities which often come from education, the provision of certificates, training, work experiences and which can be taught, soft skills as covert as they may be seen are the real forces that make things happen both in schools and organizations. Furthermore, while these hard skills could be gotten easily through training over the years, soft skills are more personality related and which individuals though could be taught need more determination to put to use. In other words, while the importance of relevant education,

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training and job experience cannot be understated, the all-encompassing importance of soft skills is needed in achieving the goals and objectives of the organization.

Vasanthakumari (2019) observed that soft skills are a combination of people skills, social skills, communication skills, character or personality traits, attitudes, career attributes, social intelligence and emotional intelligence which individuals possess which help them to interact freely and achieve organizational objectives. In other words, soft skills primarily may be said to be people skills. This means those skills which when possessed can help the individuals to work with people irrespective of their differences. They are also a cluster of personal qualities, habits, attitudes and social graces that make someone a good employee and compatible to work with. It should be note that in organizations whether profit or non-profit making, human capital development is the bane of progress and development. In schools, hospitals, industries, and elsewhere, it can be argued that real change comes in two forms: either development or deterioration. In whatever way that may be, it is obvious that it is only through the skills, attitude, values and personal characteristics of the workers that such changes may come.

Every employee in any organization whether it is school or non-school setting are expected to possess some degree of soft skills which will make him or her contribute meaningfully to the progress of the organization. It is so evidenced that those who know best how to interact with others, understand them and socialize effectively are the ones who can bring out the best from them. Furthermore, it is the reasoning of the researchers that the personality and character of individuals in the work place are solely responsible for the smooth functioning of such individuals in the organization. According to Khiavi, Dashti, and Mokhtari **(**2016**),** individual characteristics are important factors influencing organizational commitment. There is an observation that in the current era, human resources are the most important asset of any organization. There are indications that if organizations would fully achieve their objectives, they require competent and committed human resources. It seems that irrespective of the nature of the organization, its size, desires, intrinsic as well as the extrinsic level of motivations of its employees, achieving the organizational goals will be very difficult without matching the right people with better human skills with the job. To this end, Ekeh (2018) stated that rather than what employees know in a professional capacity, soft skills focus on "Who" they are, as opposed to "What*"* they are. Put succinctly, soft skills are interpersonal skills hardwired to an individual's personality, and they characterize how they interact with other people in the workplace. Soft skills are basically the people skills, personality skills, and communication abilities any employee needs for the long-term success of the organization.

It is also noted that in the educational system, the employee personal characteristics play a pivotal role in affecting the climate, attitude and reputation of their schools. They are the foundation which drives learning abilities. With the right employee characteristics and skills, schools become effective incubators of learning, places where students are not only educated but challenged, nurtured and encouraged to also develop adequate skills needed in other organizations. It is often remarked that one special teacher can make a student feel inspired, as though he can do anything in the world if he sets his mind to it. Unfortunately, this student may attend another teacher's class

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with a sense of total frustration. One teacher can make a spirit soar while the other seems destined to destroy. The difference between the two teachers may be in their soft skills and abilities.

There are many aspects of soft skills as noted earlier; these may communication skills, social intelligence and emotional intelligence, creativity, teamwork ability etc. whatever they may involve, core values like teamwork ability as well as empathy for others is the driving force of good people skills. In the organization, the ability to relate easily with people, have a listening ears, being diplomatic in the way and manner of communication and possessing the ability to see facts in the light of others opinion are expensive people skills that help people to excel individually and collectively as an organization where they belong. They are indications that differences in technical competencies are of negligible importance. But the attachment most employees have towards their job could be directly traced to their superior's level of soft skills. According to Allen (2019) "it is worth noting that sometimes, most people don't just prefer to leave their jobs, they leave their superiors/ bosses". This ugly truth however could be directly traced to the fact that those superior lack people skills nagging at them at every slight opportunity they have. Employee drive and commitment are often directly linked to the individual's relationship with management. The question to ponder about is; If competitive success is achieved through people, then doesn't it follow that the people skills of those who lead and manage are critical?

Today, in schools and industries, it could be that an employee that most effectively interact with people, maintain a cordial relationship and finally possess the right diplomatic skills are those that attain leadership position more than others. According to Rifkin (1995), in the past, it was always the person with the best technical or operational skills who moved most quickly up an organization's ladder of success. With increasing frequency in today's workplace, strong technical expertise is no longer the sole key to success. Of equal or even more importance is a leader's ability to effectively interact with people. In clear terms, equal emphasis have been laid or have been shifted from on-the-job performance now (hard skills) to the unseen skills that individuals have. This means that a worker should not be considered complete and all-rounded until such is capable of relating effectively with people (people skills) in the process of performing such. In all of these, communication remains the major skills which individuals needs to exhibit soft skills more effectively.

In organizations today, the recruitment of employees with soft skills has been a major problem. These problems are that which an effective measuring instrument can help in resolving. In education and other sciences, the identification of special traits in humans have always relied in appropriate test instrument or rating scales. Similarly, the identification of basic soft skills to a large extent will similarly depend on a well-developed and properly administered questionnaire.
To this end, Fabrigar and Ebel-Lam, (2007) stated that a questionnaire is a set of items designed to measure one or more underlying constructs or latent variables. These latent traits to a great extent are invisible to mere observation and are somewhat abstract thereby requiring special tools carefully constructed before they could be unfolded. In other words, it is a set of objective and standardized self-report questions whose responses are then summed up to yield a score.

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According to Zumbo, Gelin and Hubley (2002), the scale items are indicators of the measured construct and hence the score is also an indicator of the construct.

Chadla (2009) evinced that scale development or construction, is the act of assembling or/and writing the most appropriate items that constitute test questions for a target population. It is noted that the effective scale construction has a serious impact on the research extrapolations, touching first the quality and the size of the effects obtained and second the statistical significance of those effects or in other words the accuracy and sensitivity of the instruments (Price, 2017). According to Irwing and Hughes (2018), generally, successful tests are developed due to some combination of the three following conditions; the theoretical advances, empirical advances as well as the practical or market need. In anyway one may look at, all these procedures or purposes should be in line with a standard.

Through the observation of the researcher generally, there are several educational and industrial testing programmes that take place every year. In Nigeria in particular, these educational and vocational placement test are often too dependent on the cognitive domain of the individual. Experts have suggested that effective measurement include that which tests the all-round development and competence of an individual especially with regards to the purpose of such a test. As stated before, over the years, it has been carefully observed by the researcher that educational sector as well as industries upon hiring of their employees lay much emphasis on hard skills. These unceasing quests for cognitive superiority in employees have consciously or unconsciously eroded affective abilities of the employees. In schools and industries presently, it is a common occurrence where employees get so busy at the sight of superiors only to drop such zeal for work when he is away. Instances abound where employees no longer feel comfortable with the fellow colleagues at work. In all these, the problem of using the right tool in determining employees for certain jobs and position have continued to remain unattended.

These have resulted in situations where companies have depended solely on mere aptitude test which deals only with the cognitive domain of the employees. The consequential effect of this is the production of intelligent, highly skilled but poor affective workers. In relation to the educational sector, this has led to a staff population of academic intellectuals who lack the ability to communicate what they know well to the students. In this regard, comment like “he is intelligent but cannot transfer the knowledge” is common among students. In the industries as well, poor management-staff relationship have defined the activities of the employees.

To this end, the effect of this us that many industries have folded. Some have achieved limited targets while some have struggled to retain their staff after few months of employment. This unwise or poor recruitment option of “just” cognitive ability have from year to year cost organizations millions of naira through constantly re-advertisement, re-recruiting and retraining of staffs. Probably this problem could have been avoided if there was an effective instrument that can measure this important skill.

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The differences between this unattained reality of having "beautiful intellectuals" in schools and industries while there is an observed increase in hiring and firing of staffs as well as voluntary resignation, the observed lack of localized scale to the best of the researchers knowledge as well as the ignorance of employers of labour to this all important skill all are indicators to the huge gap created and the urgent need to fill such a gap.

Keeping in view of the importance of soft skills to the work place environment, the inappropriateness or total unavailability of a localized and current soft-skills test placement instruments as well as the paucity of research in the development of such an affective scale compared to other domains in Nigeria, the researcher is motivated to develop Soft Skill Scale (SSS) for use in educational and other industrial organizations.
Based on the aforementioned reasons, the researchers aimed at developing Soft Skill Scale (SSS) for use in educational and industrial organizations in Nigeria. To be specific, the study had the following objectives;

1. Determination of the sub-scales of SSS via Principal Component Analysis.
2. Determine the construct validity of the Soft Skill Scale (SSS) using Sub-scale total correlation.
3. Determine the internal consistency of the entire Soft Skill Scale (SSS) using Cronbach Alpha method.
4. Validate SSS using post pilot Group

The following research questions guided the researchers in the study;

1. What are the sub-scales of SSS based on factor analysis via PCA?
2. What is the construct validity of SSS using Sub-scale total correlation?
3. What is the internal consistency of SSS using Cronbach Alpha method?
4. How valid is SSS using Post Pilot Study?

METHODOLOGY

The current study adopted triangulation research design in carrying out the study. As Kpolovie (2010) stated, this design uses "multiple research methodologies, measurement instruments and statistical tools that are related to the theoretical construct of interest to more comprehensively investigate a particular phenomenon". In particular, the study involves both theoretical, space and methodological triangulation design. These designs involve using more than one theoretical scheme, more than one category of respondents and more than one method in gathering data for the study. The area of the study is Nigeria. The study area was considered vast enough and with wide variety of sample characteristics which proofs important in the goal of achieving a wider generalization of the result of the study. The population of the study covered a wide range of individuals including teachers and students of secondary and tertiary institutions as well as workers from industries across the six geo-political zones in the Nigeria. Hence, the age range of the population is 15 to 60 years. As released by the National Bereau of Statistics (NBS, 2020), individuals between this age range in these geo-political zones were 31,228,145.

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A sample size of 887 was used was used for the study. The researcher used the multi-stage sampling procedure to draw the sample from the study. First the researcher used simple random sampling technique through balloting to draw the three geographical zones in the study. They included the North-central, south-south and South-East. Also, convenience sampling technique was used to draw two states which included North-central; Abuja (FCT) and Benue State, South-South: Rivers state and Akwa-Ibom and South-East: Imo State and Abia States. The researcher also applied disproportionate sampling technique to draw three institutions (2 educational and 1 industrial) from each of the state giving a total of eighteen (18) institutions (12 educational and 6 industrial institutions). Similar non-proportionate sampling technique was used in selecting 60 respondents from educational institution. This means that each state has 120 respondents while each zone has 240 respondents from educational institution. This gives a total of 720 respondents from educational institutions across the three geo-political zones drawn. In similar manner, the researcher also drew fifty workers from one industry from each state. This meant that each zone had 100 respondents from an industry giving a total of 300 respondents.

In planning and development of the soft skills, the items were done under communication, organization, teamwork, creativity as well as adaptability sub-scales. In general, SSS adopted the Never (N), Rarely (R), Sometimes (S), Often (O) and Always (A) Likert scale which was divided into two sections (A and B). Section A of the instrument contains personal details of the respondents including, their tribe, age range, gender, educational level, place of work as well as organizational level. Trail testing of the item was carried out with 100 respondents with a total of 150 items generated. After trial analysis, the items were reduces to 110 items. Sub-scale total correlation coefficients at the pilot stage rage from .61 to .83. Cronbach Reliability ranged from .54 to .74 while the overall reliability was .88.

RESULTS

Research Question One: What are the sub-scales of SSS based on factor analysis via Principal Components Analysis (PCA)?

Before this analysis, the KMO test of sample adequacy was performed to endure the adequacy of the items in order to proceed with factor analysis. Kpolovie (2021) stated that the Bartletts Test of Sphericity must be statistically significant at less than 0.0005 alpha. From analysis KMO was .92 and Bartletts Test of Sphericity (5995, $p < .0005$) had confirmed the appropriateness of the data for proceeding with factor analysis.

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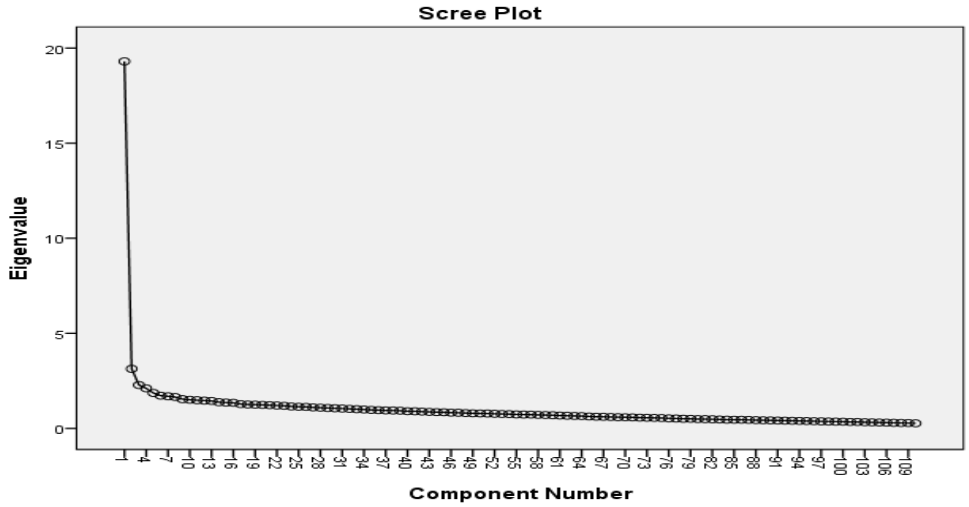
Table 1: A brief section showing Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	19.300	17.545	17.545	19.300	17.545	17.545	9.983	9.076	9.076
2	3.132	2.847	20.392	3.132	2.847	20.392	8.968	8.153	17.229
3	2.281	2.073	22.465	2.281	2.073	22.465	3.813	3.467	20.696
4	2.108	1.916	24.382	2.108	1.916	24.382	3.396	3.087	23.783
5	1.861	1.692	26.074	1.861	1.692	26.074	2.520	2.291	26.074
6	1.719	1.563	27.636						
7	1.687	1.534	29.170						
8	1.648	1.498	30.668						
9	1.535	1.396	32.064						

The various components of soft skills scales were investigated. With Principal Component Analysis, five underlying factors were forced on the basis of scree test and eigenvalues greater than 1 criterion. The five extracted factors had Extracted Sum of Squared Loadings Cummulative % of 26.074. The factor 1, factor 2, factor 3, factor 4 and factor 5 had 19.30, 3,132, 2,281, 2.108 and 1.86 Total Extracted Sum of Square Loadings that respectively accounted for 17.545, 2.847, 2.073, 1.916 and 1.692 percent of the total variance explain before the Varimax orthogonal rotation. The Rotation Sum of Squared Loading Total and % of Variance explained were respectively were 9.983 and 9.076 for factor 1, 8.968 and 8.15 for factor 2, 3.81 and 3.467 for factor 3, 3.39 and 3.087 for factor 4 and finally 2.52 and 2.291 for factor 5. Which amounted to 26.074 Cumulative % of total variance explained by the five rotated factors.

Fig. 1.1 Shows condensed version of the scree-plot of the analysis



The scree-plot above depicts that the number of critically extracted underlying factors above the point of discrimination is five telling us that the five components overwhelmingly explains or account for the total variance when all the 110 items were considered. The point on the scree-plot that is a little below 20 eigenvalues is the factor 1 (Component Number 1), the point on the scree-

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plot that is a little above 3 eigenvalues is the factor 2 (Component Number 2) while the three point following it closely represents factor 3, 4 and 5 respectively. It is only these five critically extracted factors that were subjected to the ultimate factor analysis process chiefly factor rotation

Table 2 Showing merged Rotated Component Matric of ONLY items into the various Factors. Note: Non-selected items were deleted from the table

Factors	Sub-Scales	Loaded Items	Coefficient Range
1	**Communication**	**84, 51, 57, 71, 82, 56, 83, 64, 81, 70, 58, 52, 72, 69, 68, 73, 75, 50, 65, 60, 67, 54, 63, 85, 66, 74, 80, 86 and 76**	**.40-.51**
2	**Organization**	**18, 40, 41, 26, 24, 16, 32, 39, 27, 35, 36, 34, 28, 19, 31, 25, 42, 29, 17, 9, 15 and 37**	**.41-.51**
3	**Teamwork**	**107, 106, 108, 110, 99, 105 and 98**	**.41-.52**
4	**Creativity**	**95, 94, 92, 93 and 96**	**.45-.58**
5	**Adaptability**	**5, 6, 7, 8 and 4**	**.43-.53**

The Varimax Orthogonal Rotated Component Matrix revealed that the 29 items loaded highest in factor 1. Twenty two (22) items including in factor 2, eight items in factor 3. Five items in factor 4 and five items in factor 5. On the other hand, 41 did not load in any of the factors. In summary, this means that 69 items met up the .40 criterion loading mark and as such were suitable for inclusion in the SSS for educational and industrial use in Nigeria while 41 were dropped for lack of meeting the criteria.

Research Question Two: What is the construct validity of SSS Via;

a. Sub-scale Total Correlation

Table 3: summary of the sub-scale total correlation (r) coefficients

Sub-scales	r-Coefficients	Remarks
Communication	.73	Good Correlation
Organization	.84	Very Good Correlation
Teamwork	.89	Very Good Correlation
Creativity	.76	Good Correlation
Adaptability	.65	Fair Correlation

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From table 3 above, sub-scales total correlation revealed that communication sub-scale had a good correlation of .73. Organization and Teamwork had a very good correlation of .84 and .89 respectively. Creativity ability had a good correlation of .76 while Adaptability had a fair correlation of .65. In all these correlation coefficients are good indices that the sub-scales are all indicated good construct validity and suitable for educational and industrial use in Nigeria.

Research Question Three: What is the internal consistency of SSS using Cronbach Alpha method?

Table 4 below shows Cronbach Coefficient Alpha Reliability

Reliability Statistics

Cronbach's Alpha	N of Items	Valid N of Cases	Excluded Cases	Total N of Cases	% of Representation	Remark
.953	110	886	1	887	99.9%	Very High Coefficient

From table 1.8 above, Cronbach Alpha correlation coefficient was .95. This value was remarked to be very high and according to Kpolovie (2010) is good enough to guarantee the reliability of the overall SSS.

Research Question Five: How valid is SSS as Confirmed by Post-Pilot Study?

Table 5 Shows A brief section showing Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.563	18.207	18.207	12.563	18.207	18.207	7.185	10.413	10.413
2	2.622	3.800	22.007	2.622	3.800	22.007	6.537	9.474	19.886
3	2.150	3.116	25.123	2.150	3.116	25.123	2.762	4.002	23.889
4	2.007	2.908	28.031	2.007	2.908	28.031	2.606	3.776	27.665
5	1.763	2.555	30.585	1.763	2.555	30.585	2.015	2.920	30.585
6	1.707	2.474	33.060						
7	1.565	2.268	35.328						
8	1.530	2.217	37.545						
9	1.506	2.182	39.727						

Once again, the various components of soft skills scales were investigated. With Principal Component Factor Analysis, five underlying factors were similarly forced on the basis of scree test and eigenvalues greater than 1 criterion. The five extracted factors had Extracted Sum of Squared Loadings Cummulative % of 30.58. The factor 1, factor 2, factor 3, factor 4 and factor 5 had 18.20, 3.80, 3.11, 2.90 and 2.55 % of the total variance explain before the Varimax orthogonal rotation. The Rotation Sum of Squared Loading Total and % of Variance explained were respectively were 7.18 and 10.41 for factor 1, 6.53 and 9.47 for factor 2, 2.76 and 4.00 for factor

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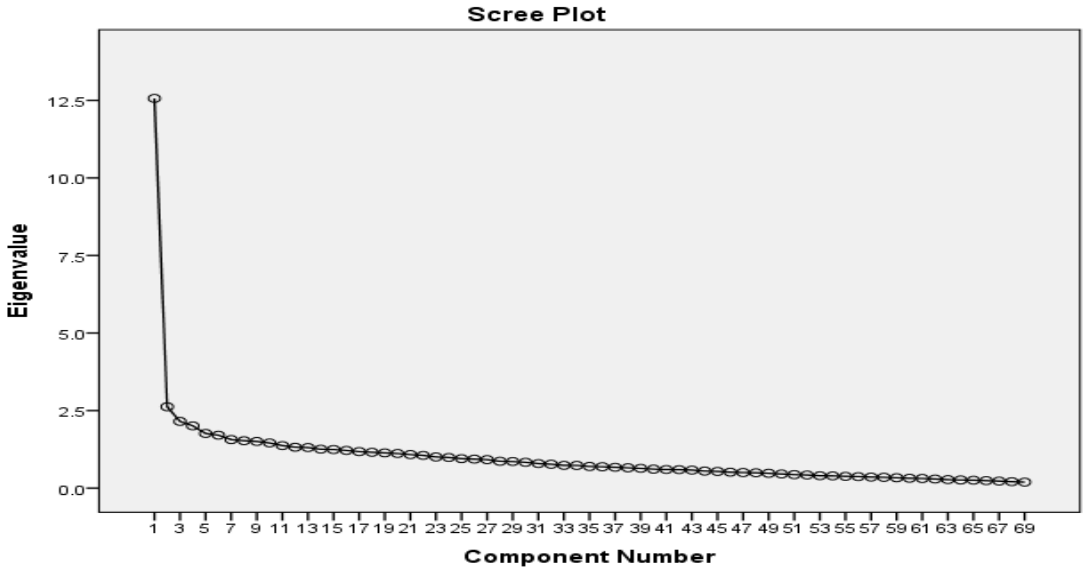
3, 2.60 and 3.77 for factor 4 and finally 2.01 and 2.92 for factor 5. Which amounted to 30.58 Cumulative % of total variance explained by the five rotated factors.



The scree-plot above depicts that the number of critically extracted underlying factors above the point of discrimination is five telling us that the five components overwhelmingly explains or account for the total variance when all the 69 items were considered. The point on the scree-plot that is a above 12.5 eigenvalues is the factor 1 (Component Number 1), the point on the scree-plot that is a little above 2.5 eigenvalues is the factor 2 (Component Number 2) while the three point following it closely represents factor 3, 4 and 5 respectively exactly similar to that during the post test.

Validity Check 1:

Table 6 Showing merged Rotated Component Matric of ONLY items into the various Factors. Note: Non-selected items were deleted from the table

Factors	Sub-Scales	Loaded Items	Coefficient Range
1	**Communication**	33, 48, 41, 34, 54, 35, 44, 40, 29, 42, 38, 45, 47, 56, 53, 46, 31, 30 and 39	0.41-.057
2	**Organization**	26, 14, 25, 8, 12, 15, 13, 18, 21, 16, 22, 19, 10 17, 24, 9 and 20	0.40-0.58
3	**Teamwork**	58, 60, 59 and 61	0.51-0.56
4	**Creativity**	69, 67, 66, 68, 65 and 62	0.43-0.56
5	**Adaptability**	3, 2, 4, 5 and 1	0.40-0.69

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Major highlight here that has validated SSS further is the fact that majority of the items that were valid still maintained their validity to be included in the SSS final draft despite the fact that some drifted from one sub-scale due to variations in numbers, to the other which were manually sorted back into their original sub-scales.

Validity Check 2

What is the Construct Validity Using Sub-scale Total Correlation of SSS at Post Pilot Compared to the Post Field?

Table 7: Sub-scales and r coefficients of Post Pilot study in Comparism Post-Field Coefficients

Sub-scales	Post-field r-Coefficients	Post-Pilot r-Coefficients	Diff	Remarks
Communication	.73	.61	.12	Good
Organization	.84	.84	0	Very Good
Teamwork	.89	.85	.05	Very Good
Creativity	.76	.68	.10	Good
Adaptability	.65	.63	.02	Good

From the table, it is observed that sub-scales total correlation for both administration were all within acceptable range revealed that communication, Organization, Teamwork, Creativity and Adaptability sub-scales had acceptable coefficient in both administrations and are good indices re-affirming its suitable for educational and industrial use in Nigeria. Hence, any differences which may lead to an insufficient index realized by a second user can only be attributed to either error in the sampling process or population used. In order to confirm this, the researcher quickly ran a t-test in the scores of both co-efficients and a p-value of .43 was realized indicating an insignificant difference between the post-field and the post pilot coefficient sets.

Validity Check 3

What is the Internal Consistency of SSS at post pilot using Cronbach Alpha?

Table 8: Cronbach Reliability coefficients reliability

Cronbach's Alpha		Remarks
Postfeild N=887	**Post Pilot N=347**	
.953	0.92	Very High Coefficient and seeming insignificant differences in indices of both posttest and post-pilot

From the table, the first Cronbach coefficient in the post field administration was 0.95 while that of the post pilot is .92. These values have both indicated a high reliability and a seeming insignificant difference in the indices reported earlier.

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DISCUSSIONS

The current study dealt with the development of Soft Skill Scale (SSS) which is a new instrument develop in Nigeria for both educational and industrial use. The final scale contains 69 items with five factors or subscales. These sub-scales consisted of Communication, Organization, Teamwork, Creativity as well as Adaptability. As noted earlier, the scale can generally be used in both educational and industrial settings. From finding one, it was noted that most items were force out of the factors which was conducted via Principal Component Analysis (PCA). These items included item 78, 79, 53, 62, 55, 61, 59, 77, 49, 46, 48, 43, 10, 38, 33, 45, 44, 11, 88, 30, 23, 87, 103, 20, 13, 100, 104, 101, 102, 97, 91, 90, 12, 21, 2, 1, 47, 3, and 14. These items were eliminated from the final structures of the PCA for basically one reason. This is the inability to meet up with their expected Factor loading which was set on 0.40.

As said earlier, 69 items including items 84, 51, 57, 71, 82, 56, 83, 64, 81, 70, 58, 52, 72, 69, 68, 73, 75, 50, 65, 60, 67, 54, 63, 85, 66, 74, 80, 86, 76, 18, 40, 41, 26, 24, 16, 32, 39, 27, 35, 36, 34, 28, 19, 31, 25, 42, 29, 17, 9, 15, 37, 107, 106, 108, 110, 99, 105, 98, 95, 94, 92, 93, 96, 5, 6, 7, 8 and 4 were included as components. Among these, 14 items loaded comfortably in sub-scale 1 which is **Communication**. Sub-scale 2 which was **Organisation** had 14 items well loaded into it. Subscale 3 which was **Teamwork** had 21 items loaded. Sub-scale 4 which was **Creativity** had seven items loaded and finally sub-scale 5 tagged **Adaptability** had 13 items loaded comfortably into it. From this loading, it is seen that Teamwork/Social skills prevail the most when the skills of both industrial and educational setting workers are assessed. On the other hand, Creativity had less loading. This means that these skills are less possessed by industrial and educational setting workers. The reason for this high skill in terms of teamwork and social skill in both educational and industrial sectors may be explained by a number of reasons. This could be because many of the industrial workers especially in Nigeria always organized themselves into unions, teams, clubs and societies which makes them to have a conscious or unconsciously development in the skills of teamwork, collaboration, and social attitudes. On the other hand, it could be that the reason why the educational and industrial setting workers perform poorly in critical thinking and creativity skill could be because of the lack of positive attitude for critical thinking as well as thinking out solutions for things. It could be that respondent in these two sectors have neglected critical thinking skills and creativity. For those in the industrial setting, it could be that because they have already gained employment and has a meaningful source of livelihood, they may have less need to be creative or think critically outside the box. On the part of the student, it could also be that the lack of attitude for reading, lack of attitude for excellence and lack of attitude for positive achievement could also be a reason why they do not score high in Creativity and Critical. Factors like high compromise in the educational sector as well the relegation of excellence and the downward trend in educational values may also contribute to why those in the educational sector develop less skill for creativity and critical thinking. However, it was somehow surprising to the researcher that communication skills which seem to be a common skill have less factors loaded into it.

From research findings two, it was established that subscale total correlation for *communication* was 0.73, *organization* = 0.84, *teamwork* = 0.89, *creativity* = 0.76 while *adaptability* = 0.65. In all

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of these reliability indices, it is seen that all have a high reliability except for Adaptability which have an average reliability index of 0.65. These reliability indices indicated that the instrument is valid. This sub-scale index as investigated is same as reported by Lee and Lee (2011), this reliability index is within the range suggested by Kpolovie (2010). The Split-half reliability also revealed a reliability index of 0.86. This also indicated that the scale was reliable. This is in line with the findings of Bob and Roisin (2010) who also indicated high reliability of soft skills scale.

From research findings three, it is seen that SSS had Cronbach Alpha reliability up 0.96. This reliability Index indicated that SSS have a very high reliability index. This index is similar to that reported by Aworanti, Taiwao and Iluobe (2015) who reported a reliability index of 0.95. Also, a split half reliability index of 0.87 was reported against similar one which was reported by Al-Sharadgah (2014) who reported an index of 0.81. The reason for these high indices however could be because of the larger sample size which the researcher ensured that there are five times greater than the number of items as stated by Kpolovie (2021).

Research question five findings concerning how valid SSS is have shown that all the analysis done earlier which were redone for purpose of establishing and reaffirming validity have all shown insignificant differences compared to that which was done during the post-field phase of the study. This simply means that there is no difference between all the findings reported at the post-field stages and that reported by the post-pilot stages. This further means that SSS is adjudge to be valid even with the few samples used in the post-pilot phase. As stated earlier, this affirmation implies that SSS is very valid and anywhere the instrument is used with a similar population and sample, it is expected that similar result will be gotten. Hence any difference observed can only be attributed to an error by the second user and not as a result of errors made in the process of development.

CONCLUSION

Based on the findings of the study, the following conclusions are made;

1. The SSS is a 69 item instruments for assessing soft skills of individuals in both educational and industries in Nigeria.

2. In terms of validity, the SSS possess indices relatively high in all its sub-scales to guarantee a high validity especially as reaffirmed through the post pilot study.

3. SSS has high reliability in terms of Cronbach in both post field and post pilot administrations.

4. There is high validity of SSS as compared between the post field and post pilot study as there are similar results.

Recommendations

Based on the findings of the study, it is recommended that;

1. Based on the findings that SSS factors are suitable, it is recommended that SSS should be recognized and used in both admission process into all school level in Nigeria as well as in job

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recruitment in industries in Nigeria due to its ability to identify and detects those with requisite people skill.

2. It is recommended that test developers should rise above just development of cognitive instruments. In fact, it was seen during the literature review that IQ and EI are fading away. What is paramount now is SI (Social Intelligence) which is the people-skills or 21ist century skills. It has over take hard skills which are mere paper qualifications.

3. It is recommended that developers of similar scales should use SSS to determine the reliability of their instruments since it has been establish that SSS has high Cronbach Alpha reliability.

4. Having established the efficacy of SSS using a post pilot study, it is recommended that other researchers and users should ensure that the sample characteristics they used are similar if they are to achieve a positive result as any difference in such characteristics may give them a different result and this can only be blames on errors associated in the second users sample..

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