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UTILITY OF UNIZIK RESILIENCE SCALE IN PREDICTING SELF EFFICACY AND MENTAL HEALTH AMONG UNDERGRADUATES

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Abstract

Resilience entails inherent stamina that is developed over time, which propels an individual to recover and move on seamlessly with daily routine after stressful experience or encounter. The nature and meaning of daily stress are both subjective and may be controlled by socio-cultural domain of individual's ecological systems. Thus what constitute resilience may be culturally sensitive and attached to relevant events encountered by people. While resilience is a universal term, measuring resilience may be more relevant if the contexts are considered. This study utilizes exploratory design to assess the construct validation of resilience scale among a cross section of Nigeria sample. This study demonstrates the utility of the scale in relating to other psychological outcomes (self-efficacy, and mental health) among 200 undergraduates whose ages ranged from 19 – 28 years with Mean and SD **(**23 $\pm$ 1.3). The results showed that internal consistency of the scale Cronbach Alpha α = .801. KMO and Bartlett's test = .472, P = .000. Communalities of Principal Component Analysis ranged from .715 to .928. The correlation of data from Unizik resilience scale and general self efficacy scale yielded Concurrent validity of .58, P<.000. However, depression = -.52, anxiety = -.43, and stress = -.42 P<.001 respectively yielded divergent validity when Unizik resilience scale was correlated with DASS21. Based on the findings, the scale is highly valid and reliable measure of resilience.

Keywords: Resilience, Stress, Utility, Construct, Validation,

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Introduction

Generally, resilience is a product of genetic transmission and social interaction that develops overtime (Bailey, 2017; Bronfenbrenner, 1979). One common characteristic of every individual is the inevitability to encounter challenges, which are part of daily living experiences, and they emanate from different ecology (Nwafor et al., 2021). For example, students grapple to cope with school-related expectations and responsibilities, such as peer relations, family and personal care, and health responsibilities, among others (Engels et al., 2019; Nwafor et al., 2021). The experience of challenges may have different impacts on individuals, while some persons will encounter and recover quickly from their negative experiences, others may encounter and become overwhelmed and unable to recover and function effectively thereafter (Masten, 2014). According to Masten (2014), resilience is defined as the ability to recover from adverse negative experiences. In other words, resilience can be defined as inherent stamina that is developed over time, which propels an individual to recover and move on seamlessly with their daily routine after a stressful experience or encounter. This recent definition entails that resilience has both internal and learned mechanisms of development. Internally, every individual has an inborn tendency to recover and cope with challenges. However, the inborn traits may not be equal in every individual due to the individual differences phenomenon (Khaled, 2021). The differences in inherent traits in resilience may be likened to differences in height, weight, and other physical attributes among individuals.

Similarly, individual social environments such as family interaction, school, peer relations, and play ground experience, among others, play roles in the development of behavioral patterns (Bronfenbrenner, 1979). As individuals operate in social environments, they learn new and adaptable coping mechanisms through observation, modeling, reinforcement, punishment, and personal idiosyncrasy (Bandura, 1986). The navigation processes of the environment contribute

substantially to behavioral outcomes (resilience). It is plausible that the totality of the social interactions either enhances or dampens resilience development in individuals (Bonanno et al., 2011). Theoretically, the development of resilience could be explained using some theoretical paradigms, namely, ecological systems theory (Bronfenbrenner, 1979), social learning theory (Bandura, 1986), genetic theory (Bailey, 2017), and the gene-environment hypothesis. These theories postulated explanations of behavioral (resilience) formation, sustenance, and influence other outcomes. For instance, ecological systems theory (Bronfenbrenner, 1979) averred that the social environment is divided into five levels that are interconnected and play significant role in behavior formation. The five levels of the ecological systems include the microsystem, mesosystem, exosystem, macrosystem, and chronosystem. Each of the levels contains a unique but related unit of influence that contributes to human development. It could be explained that resilience is formed through the interconnected mechanisms of the social environment (Bronfenbrenner, 1979). Similarly, social learning theory (Bandura, 1986) stated that behavior (resilience) forms through some mechanisms such as observation (the tendency of learning a behavior by watching other person(s), imitation (the act of replicating what another person is doing), reinforcement (could be negative or positive), and punishment. For instance, if an individual observes a person eulogized for being resilient, there is a tendency that such a person would attempt to replicate the same behavior in a subsequent situation. On the other hand, if a person is punished for not displaying resilience, observers would learn to manifest resilience in order to avoid such negative treatment. Thus, people could be learning resilience without knowing that learning is taking place inasmuch as they share the same environment with resilient individuals (Bandura, 1986).

The transmission is done through a gene, which is contained in the chromosomes and consists of deoxyribonucleic acid (DNA). This line of thought was promoted by Gregor Mendel during the 1960s. From this theoretical perspective, resilience is a heritable trait that is passed from parents to children. However, one shortcoming of this theory is its explanation of behavior (resilience) formation from one direction the gene (Bailey, 2021). Furthermore, gene-environment interaction (Plomin et al., 1977) stated that resilience is developed when the two main factors of behavior formation (gene and environmental interaction) relate. That is, the resilience trait passed down from parents to offspring is modified by the prevailing environmental circumstances. This theoretical undertone suggests that both genetic and environmental factors contribute to the development of resilience. Hence, no singular factor is more dominant than the other. Thus, the gene-environment hypothesis provides a robust explanation of the mechanism of resilience better than some theories reviewed above.

Justification for the Present Study

The present study aims to assess the predictive potentials of the Unizik Resilience Scale (codenamed Unizik R). As the first indigenous measurement instrument of resilience, understanding its ability to predict other positive and desirable outcomes becomes important. Given that the socio-cultural environment contributes to the development of resilience (Bronfenbrenner, 1979), checking the relevance of the scale in the Nigerian social environment is in tandem with the International Test Commission (ITC, 2017). In Nigerian culture, resilience is inculcated and enhanced in individuals through languages and reinforcement. For instance, in Igbo language, “jisie ike” loosely translates to be persistent and remain dogged, among other positive attributes that demonstrate the rootedness of resilience in Igbo cosmology (Ugwu et al., 2023).

Therefore, the rationale for the present study is to test the utility of the scale in a cross-section of undergraduate students in Nigeria.

Methods

Research design

Exploratory and factor analyses were adopted to broaden the understanding of Unizik R. Also, predictive correlational design was utilized to test the potential of the scale in predicting other outcomes.

Participants

A sample of five hundred (500) undergraduate students selected from four (04) universities (2 government'-owned, one mission'-owned, and one privately' owned) from eastern Nigeria participated in the study. The participants consist of two hundred and fifty males (250), which represent 50% of the sample, and two hundred and fifty females (250), which represent 50% of the sample, participated in this study, respectively. The informed consent of the participants was duly obtained before administration of the instrument. The research adhered strictly to ethical principles of anonymity, among others.

Instruments

Unizik Resilience Scale (Unizik R)

The scale was originally developed by Nwafor et al. (2020). It is a fifteen (15) item scale that measures the resilience of youths in Nigeria. The Cronbach Alpha coefficient of the scale is $\alpha = .82$.

The scale is scored in a five-point response format, which ranges from strongly disagree = 1, disagree = 2, undecided = 3, agree = 4, and strongly agree = 5.

The Generalized Self-Efficacy Scale

The scale was developed by Schwarzer and Jerusalem (2010). The generalized self-efficacy scale is a ten-item scale, which has been translated from German version to English version by Mary Wegner. The scale assesses the strength of an individual's belief in his or her own ability to respond to novel or difficult situations and to deal with any challenge. It has a four-point response pattern, which ranges from exactly true = 4, moderately true = 3, barely true = 2, and not at all true = 1. The Cronbach alpha coefficient of α.82 was established.

DASS21

The scale was developed by Lovibond & Lovibond (1995). It contains twenty-one (21) items that measure the severity of mental health status of individuals. Specifically, it measures depression, anxiety, and stress. Each of them has equal items of 7. The scoring pattern of the scale ranges from: Did not apply to me at all = 0, applied to me to some degree or some of the time = 1, applied to me to a considerable degree or a good part of the time = 2, and applied to me very much or most of the time = 3. The overall Cronbach Alpha for the three subscales was α =.84.

Results

Exploratory Factor Analyses

The Kaiser-Meyer-Olkin (KMO) analysis yielded 472. It was used to assess how suited the data were for factor analysis, for which the acceptable value must be greater than.05 (Kaiser, 1974).

Also, the Bartlett test was an approximate Chi-Square of 188.6, df = 105, P =.000. The Bartlett test was used to assess whether the variables were correlated highly enough for factor analysis. The result of the Bartlett test confirms that Unizik R is in tandem with the International Test Commission's (ITC) requirement for scale acceptability (ITC, 2017; Ugwu et al., 2021).

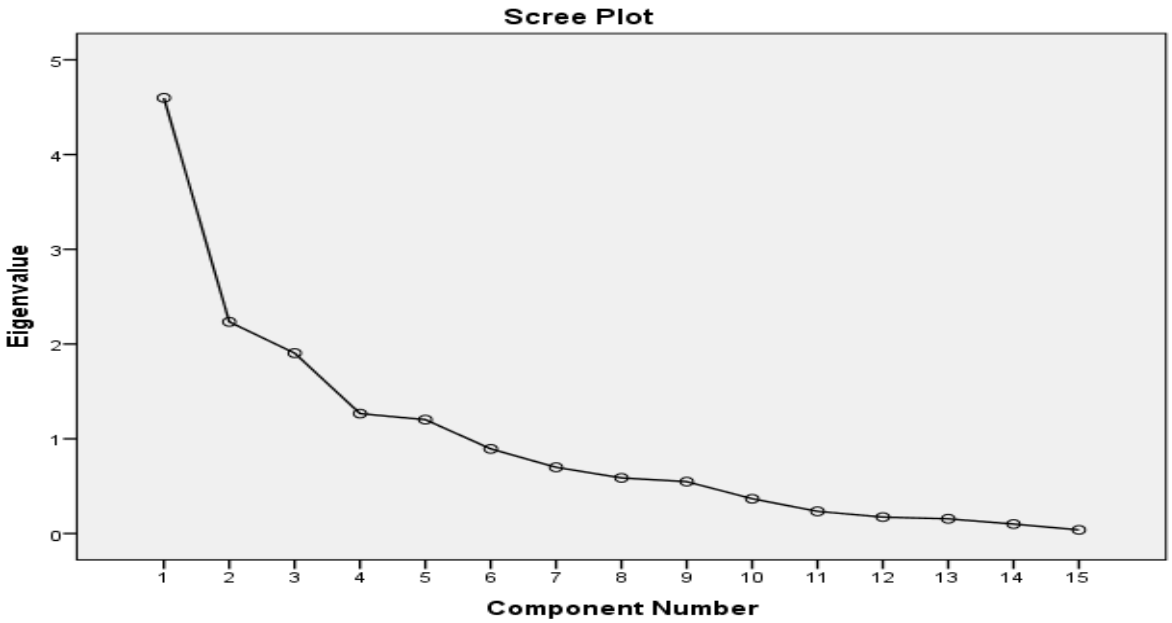


Figure 1, scree plot.

The scree plot showed one clear-cut factor loading of Unizik R. It was used to determine the appropriate number of factors to extract.

Table 1: Communalities

S/N	Unizik R Items	Communalities
1	I do overcome difficult challenges	.738
2	I encourage myself in every situation	.904
3	I always overcome hard times	.796
4	I can handle urgent situations	.928
5	I can engage on complicated tasks	.748
6	I am always happy when I remember home	.756

7	If I don't understand my school work I keep going over it until I understand it.	.838
8	I don't let low exam grade affect my confidence	.801
9	I'm good at dealing with setbacks at school	.746
10	I don't let study stress weigh me down	.784
11	I am not afraid of asking questions when faced with difficult tasks	.783
12	I have control of situations around me	.729
13	I can easily do well in any environment	.758
14	Whenever I start a task I finish it	.715
15	I see problems in my community as an opportunity to help	.780

The communalities scores of the scale ranged from .715 to .928, which showed the relatedness of the items and the acceptability of the items to be used together in assessment. The ITC (2017) recommends communalities scores to be above .35. The internal consistency of the scale was assessed using Cronbach alpha coefficient. The result showed acceptable Cronbach alpha of α = .801.

Table 2, Regression result showing predictive potential of Unizik resilience scale

Predictors	**R^2**	**df**	**F**	**Std error of Estimate**	**β**	**Sig**
	.743	4(495)	6.49	5.33574		
Self-Efficacy					.58**	.000
Depression					-.52**	.001
Anxiety					-.43**	.001
Stress					-.42**	.001

P<.005

The multiple regression result showed that Unizik resilience significantly and diversely predicted self-efficacy and mental health status. While it predicted self efficacy positively r = .58, P<.000 and it predicted dimension of DASS negatively depression r = -.52, anxiety r = -.43 and stress r = -.42, P <.001 respectively.

Discussion

Importantly, results of the five different psychometric properties of Unizik Resilience Scale explored in the study showed promising outcomes. The acceptable outcomes are critical to the utility of the scale among youth population (Alexandrova & Haybron, 2016). The basis behind the versatility use of the scale in measuring general youth population is deducible from the results. Specifically, other measurement instruments used for concurrent and divergent validity in this study such as DASS21 (Lovinbond & Lovinbond, 1995) and generalized self-efficacy scale (Schwarzer & Jerusalem, 2010) are used to measure general population psychological idiosyncrasies. The ability of the three scales namely, Unizik R., Dass21, and Generalized self-efficacy to correlate significantly with diverse direction is a ground to assert that Unizik R has potential to assess general youth population (Cartwright & Norman, 2011). The explanation became timely not to limit the use of the scale to students' population only; though, participants in this study were only students, which was a result of convenience. However, the psychometric properties provided invaluable insight and support for its utility in different youth ecology.

Specifically, the five major areas of the scale assessed include exploratory factor, confirmatory factor, internal consistency, convergent validity, and divergent validity. For instance, the KMO and Bartlet properties were adequate for continual use of the scale (Kaizer, 1974). The communalities and item analysis, and scree plot results showed significantly high relatedness of the items and a clear factor loading as demonstrated by the eigenvalues (ITC, 2017). The internal

consistency of the scale was sufficient, as confirmed by the Cronbach alpha coefficient score (Cronbach & Meehl, 1955). The convergent validity of a scale is established by checking the direction of the relationship between two related constructs (ITC, 2017). In the present study, the relationship between self-efficacy and resilience was examined and found to be significantly positive related (Eagan et al., 200). On the other hand, divergent validity of a scale is conducted by assessing relationships between or among unrelated or opposing constructs. In this case, relationships among resilience, depression, anxiety, and stress were tested and found to be negative, which implies that a unit increase in resilience leads to a unit decrease in depression, anxiety, or stress. It showed the potential of Unizik R to reveal divergent validity (Ugwu et al., 2021).

It gladdens the heart that first indigenous scale for measuring resilience has emerged. Resilience is a desirable positive and universal construct but has peculiarities in its manifestation in different localities (Baguma, 2021). For instance, in Igbo cultural worldview, resilience is inculcated into the children from childhood till old-age period. It is done through encouraging people to persevere in whatever circumstance they find themselves (Ugwu et al, 2023). The usefulness of resilience could be understood by the early enculturation of the traits on children and through the life course. Thus, having a reliable and valid measurement contributes hugely to deep understanding of the construct and its importance in evaluating adjustment and functioning (Ercikan et al., 2013; Gregoire & Hambleton, 2009). The phenomena of individual flourishing, adjustment and coping are embedded in resilience (Ugwu, 2021); hence they would be better understood by exploring resilience. It further validates that the high concurrent score of Unizik R and generalized self-efficacy was not accidental but scientific (Hambleton & Patsula, 1999).

Conclusion

The study is timely because it has established the scale as a useful measure of resilience with potential to predict concurrent and discriminate constructs. Notably, the need to understand youths' resilience has become increasingly pivotal due to undesirable life events prevalent in the environment. The scale can be used in different settings for different reasons, namely school admission, clinics, recruitment exercises, psychological intervention, apprenticeship workshops, and other environments where youths operate. The overwhelming relevance of resilience in the daily life of every individual is the reason for the versatile utility of the Unizik resilience scale in different milieus.

Appendix

UNIZIK Resilience Scale

Instruction: Using the response options below tick (√) how often each statement applies to you.

Response pattern: Strongly Disagree =1, Disagree =2, Undecided = 3, Agree = 4, and Strongly Agree = 5

S/N		Strongly Disagree	Disagree	undecided	Agree	Strongly Agree
1	I do overcome difficult challenges	1	2	3	4	5
2	I encourage myself in every situation	1	2	3	4	5
3	I always overcome hard times	1	2	3	4	5
4	I can handle urgent situations	1	2	3	4	5
5	I can engage on complicated tasks	1	2	3	4	5
6	I am always happy when I remember home	1	2	3	4	5
7	If I don't understand my school work I keep going over it until I understand it.	1	2	3	4	5
8	I don't let low exam grade affect my confidence	1	2	3	4	5
9	I'm good at dealing with setbacks at school	1	2	3	4	5
10	I don't let study stress weigh me down	1	2	3	4	5
11	I am not afraid of asking questions when faced with difficult tasks	1	2	3	4	5
12	I have control of situations around me	1	2	3	4	5

13	I can easily do well in any environment	1	2	3	4	5
14	Whenever I start a task I finish it	1	2	3	4	5
15	I see problems in my community as an opportunity to help	1	2	3	4	5

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