Development and Psychometric Evaluation of Redeemer's University Retirement Anxiety Scale (RURAS)

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Abstract

Despite the increasing incidence of retirement anxiety among university employees in Nigeria, there are limited psychometric instruments for assessment to aid early detection and appropriate intervention. Hence, this study aimed to develop and validate the Redeemer's University Retirement Anxiety Scale (RURAS), a 13-item instrument designed to comprehensively assess retirement anxiety in the Nigerian multi-cultural context. The study was conducted in four phases: Phases 1 and 2 involved the initial generation of 39 items through a thorough literature search, following which 21 items were retained based on expert evaluation during the instrument's face and content validity. In phase 3, a cohort of 313 non-academic staff from Nigerian universities was selected to complete the 21-item RURAS via a multistage sampling approach. The obtained data underwent both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). McDonald's Omega total (ωt) was used to assess the instrument's reliability. In phase 4, another sample of 241 non-academic staff completed RURAS, Hospital Anxiety and Depression Scale (HADS), Rosenberg Self-Esteem Scale (RSES) and the Connor-Davidson Resilience Scale-10 (CDRISC-10). The data collected were subjected to correlational analyses to establish the criterion-related validity. The EFA yielded a 3-factor model (Personal Obligation Concerns-POC, Financial Planning Concerns-FPC, and Social Detachment Concerns-SDC), and Confirmatory Factor Analysis (CFA) yielded acceptable fit indices. The internal consistencies (Omega(ω)) of the FPC, POC and SDC sub-scales were 0.75, 0.83 and 0.70, respectively, and 0.87 for the full scale. The criterion-related validity correlation coefficients of the three dimensions were adequate with HADS - Anxiety ranging between (0.49 and 0.61) and Depression (0.44 and 0.54), RSE (-0.30 and -0.49) and CDRISC-10 (-0.13 and -0.42). The study concluded that the RURAS has acceptable psychometric properties and the potential to be helpful as a screening tool for retirement anxiety among employees in Nigerian higher education and other related contexts.

Keywords: Retirement Anxiety, Scale Development, Validation, Nigeria

Introduction

Individuals go through countless transitions in their lifetime. However, the changes from being occupationally active to retirement are considered the most demanding, especially for individuals approaching retirement (Segel-Karpas & Bergman, 2022). Retirement anxiety is related to intense worry and doubt about the future following the cessation of active working life (Kiso et al., 2019; Ugwu et al., 2019). A lack of preparedness concerning retirement-related variables may induce or be associated with retirement anxiety for sick individuals. Research has established that an unprecedented number of people face retirement with fears of the unknown (Arogundade, 2016; Kiso et al., 2019; Wang &

Shultz, 2014). Nonetheless, the transition to retirement from official work does not produce the same experience for every employee (Fletcher & Hansson, 1991; Hayslip et al., 1997). The literature identified three significant areas of retirement anxiety, namely, anxiety about financial instability, personal/family obligations and social disconnections (Arogundade, 2016; Fletcher & Hansson, 1991; Ugwu et al., 2019). As documented in various studies, fear regarding the lack of financial (savings/investment/insurance) resources to fund a good standard of living during retirement tops the list of concerns among aspiring retirees (Kiso et al., 2019; Hershey & Mowen, 2000). Others include fear of losing social and work-related identity and the need to replace their work routines with other meaningful activities (Ugwu et al., 2019). Some employees are bothered about the circumstances surrounding their family life (lack of residential homes, dependents, or managing health conditions), which require substantial funding after the cessation of salary (Lahdenpera et al., 2022). Those who are insecure about their retirement future may be dissatisfied, unhappy and depressed (Gutierrez & Hershey, 2013). There is an association between anxiety with retirement and increased awareness of death (Segel-Karpas & Bergman, 2022) and a significant decline in work-related performance, which may likely affect productivity and efficiency at work (Wang & Shultz, 2014).

Most people in tertiary institutions in Nigeria retire after a statutory 35 years in service or at 65 years, except for professors who retire at 70 years irrespective of their years of service (Arogundade, 2016), after which they are entitled to lump sum gratuity and monthly pension allowance. The Nigeria Pension Reform Act 2004 regulates the administration of retirement benefits, which allows employers and employees to contribute a certain percentage of their income to a retirement saving account (RSA) from which they would derive their pension benefits after retirement. Individuals in active service have expressed concerns over the attendant challenges in the pension benefits scheme (Nweke, 2013). Aside from their fears about their employer's commitment to the RSA, employees are worried about the diverse irregularities in the

management and disbursement of their pension benefits, which prospectively makes retirement dreadful and unappealing (Ugwu et al., 2019). Statistics reveal that about 30% of retirees might experience slight changes to their emotional well-being during retirement transition, with increased levels of despair and Depression (Pinquart & Schindler, 2007). A few studies on retirement anxiety in the Nigerian context are available, and little is known about the prevalence and psychological consequences of experiencing anxiety about retirement among Nigeria's working population (Ugwu et al., 2019). Some psychometrically validated measures are available to screen retirement anxiety among the working population. However, nearly none address the pertinent factors associated with African society's socio-cultural and occupational dynamics. Among the non-African scales is the 23-item Social Components of Retirement Anxiety Scale (SCRAS) (Fletcher & Hasson, 1991), measuring only the social aspects of retirement anxiety. Another is the Retirement Anxiety Scale (RAS) (Hayslip et al., 1997), a multidimensional 14-item instrument with distinctive contents measuring fears of declining health, income, emotional well-being, and changes in social relationships associated with retirement. The challenge with western-adapted scales is their inability to address salient issues related to the socio-cultural experience of prospective retirees in African industrial settings, especially Nigeria. For instance, the RAS does not address concerns related to caregiving obligations, considering that most African families believe in making collective contributions toward the needs of others (Olatomide, 2017). The likelihood that this cultural orientation could elicit fear regarding retirement is yet to be sufficiently established within Nigeria. Thus, this study aimed to develop and establish the psychometric suitability of an instrument (Redeemer's University Anxiety Scale (RURAS) for assessing retirement anxiety among employees in the Nigerian higher education context, with the following objectives - 1) item generation, 2) extraction of latent factors (EFA), 3) Confirmatory Factor Analysis (CFA) of the RURAS model generated with EFA, and 4) provision of evidence for internal reliability and validity of the RURAS.

Methods

Study Setting: The study was a university-based cross-sectional survey conducted in Osun State, Nigeria. The state has two public (federal and state) and five privately-owned universities. The current study was conducted among non-academic staff across four selected universities in Osun State.

Sampling and Participants: Sampling was done in two stages. In stage 1, a multistage sampling technique was utilised to draw 313 non-academic staff (male, 152, female, 161) from two (one public and one private) randomly selected universities in Osun State, Nigeria, for the EFA and CFA, using the following step, 1) the universities were stratified into public (federal and state government-owned) and privately-owned universities; 2) Using random sampling method, a public and private universities were randomly-selected by balloting for the study; 3) a sample size of three hundred and thirteen (313) was determined using utilising Kish (1965) formula $n = z^2pq/d^2$. The percentage of the target population estimated to have retirement anxiety based on Pinquart and Scinnart (2007) study was 30%. A minimum sample size of 303 was calculated to be adequate at ±10% levels of precision and 95% confidence level, but was increased to 313 to cater for the attrition rate. A total of 375 copies of the instruments were distributed to consenting participants using an accidental sampling; 337 were returned (89.87% response rate), among which 313 were appropriately completed. Of the 313, 152 (48.6%) were males, and 161 (51.4%) were females. 40 (12.8%) were junior staff, 133 (42.5%) were senior administrative, and 140 (44.7%) were senior technical staff. A total of 163 (52.1%) of the staff worked at a public university, and 150 (47.9%) worked in a private university. A total of 16 (5.1%) of the participants had spent between 6 and 10 years working, 138(44.1%) had spent between 11 and 20 years, and 159 (50.8%) had spent above 20 years. See Table 1. A fresh sample was selected to investigate the scale's psychometric properties. Two hundred and forty-one (241) non-academic senior (administrative and technical) and junior staff from two (one public and one privately-owned) universities in Osun State, Nigeria, were conveniently drawn using an online survey (Google form). The age ranged from 49 to 62 ($\bar{x} = 55.08 \pm 3.033$) years. In all, 58.1% (140) of the sample worked at a public university, while 41.9% (101) worked at a private university, out of which 45.37% (118) were males, and 54.63% (123) were females. The percentage of the junior staff was 27.8% (67), senior administrative and technical staff were 31.1% (75) and 41.1% (99), respectively. About 36(14.9%) of the participants had spent between 6 and 10 years at work, 71(29.5%) had spent between 11 and 20 years and 134 (55.6%) had spent above 20 years. See Table 1.

Inclusion/Exclusion Criteria: All non-academic staff working full-time and between the ages of 45 and 65 who were willing to participate voluntarily were included. The age bracket was within the age range used in previous studies on retirement anxiety (Arogundade, 2016; Ugwu et al., 2019). Recent studies show that younger people are experiencing increased retirement anxiety due to economic downturns and rising unemployment rates, contradicting the traditional belief that retirement anxiety is primarily experienced by older workers (Whytock, 2022). Non-academic staff working part-time and those not within the age bracket or who denied consent were excluded. Confidentiality and anonymity of responses to all the data instruments were assured.

Ethical Considerations: The research involved using human participants for its analysis. The Helsinki Declaration on research ethics for human participants was observed. The approval was sought from the Redeemer's University Internal Ethics and Research Committee. An information sheet detailing the study's aims was also provided for participants, after which informed consent was obtained.

Table 1: Socio-Demographic Characteristics of Participants in both Studies

Factors	Options	Study 1: EFA/CFA (n=313)		Study 2: Validity (n=241)	
		Freq	%	Freq	%
Gender	Male	152	48.6	118	45.37
	Female	161	51.4	123	54.63
	Total	**313**	**100.0**	241	100.0
Type of Universities	Public	163	52.1	140	58.1
	Private	150	47.9	101	41.9
	Total	**313**	**100.0**	241	100.0
No. of Yrs. at work	6 – 10 years	16	5.1	36	14.9
	11 – 20 years	138	44.1	71	29.5
	Above 20 years	159	50.8	134	55.6
	Total	**313**	**100.0**	241	100.0
Designation	Senior Admin. Staff	133	42.5	75	31.1
	Senior Technical Staff	140	44.7	99	41.1
	Junior Staff	40	12.8	67	27.8
	Total	**313**	**100.0**	241	100.0
Age	Range:	45 – 63 years; Mean =55.12, SD =3.60		49 – 62 years; Mean= 55.08; SD=3.03	

*Study Measures***:** The participants completed the RURAS, Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith, 1983), Rosenberg Self-Esteem Scale (RSES) (Rosenberg, 1965) and Connor–Davidson Resilience Scale 10-Item Version (CD-RISC-10) (Connor & Davidson, 2003).

The HADS is a 14-item scale developed to screen for anxiety and depression symptoms. The anxiety and depression subscales each consist of 7 items, with each rated on a 4-point Likert scale ranging from 0 (no, not at all) to 3 (yes, definitely). A total score of >8 out of a possible 21 in any of the subscales denotes the presence of significant anxiety or depression. The Omega total (ω_t) obtained for the anxiety and depression subscales in the present study were 0.84 and 0.83, respectively.

The 10-item RSES was utilised to assess global and unidimensional self-esteem. The items were rated on a 4-point Likert scale ranging from 1 = strongly disagree to 4 = strongly agree, and scores ranged from 0-30, with high scores signifying high self-esteem. An Omega total (ω_t) of 0.87 was obtained in the present study.

The CD-RISC-10 was used to measure how well individuals thrive in stressful events. It is structured as a 5-point Likert-type cumulative instrument (1 = never to 5 = almost always). A summation of the responses to all the items yields a score that ranges from a minimum of 0 to a maximum of 40, which signifies the highest level of resilience. An Omega total (ω_t) of .89 was obtained for this study.

Data Analysis: The Statistical Package for the Social Sciences (IBM SPSS, 2020) version 27 was used to analyse the data. The RURAS was subjected to Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). The internal consistency of the items of the RURAS was tested using McDonald Omega total (ω_t) (Hayes & Coutts, 2020) reliability analysis.

The CFA was performed using the IBM SPSS Analysis of Moment Structure (AMOS) (Arbucle, 2019) software, 26th version, to investigate the construct validity of the factor structure yielded in the EFA. Confirmatory Factor Analysis was based on the satisfactory fit indices. According to Hu & Bentler (1999)

criteria, in which the Goodness of Fit Index (GFI), Comparative Fit Index (CFI), and Tucker-Lewis's Index (TLI) values approximate to 0.90 or exceed 0.95, root mean square error of approximation (RMSEA) between 0.05 and 0.08; χ^2/degree of freedom (CMIN/DF) ratio less than 2, and a non-significant P>.05, Standardised Root Mean Residual (SRMR) between 0 and 0.08.

The validity of the (RURAS) was examined by assessing the level of concurrence between the items of RURAS and other constructs such as anxiety, depression, self-esteem and resilience. For instance, the scale scores (RURAS) were correlated with the scores of existing standardised measures of anxiety and Depression (Hospital Anxiety and Depression Scale), self-esteem (Rosenberg Self-Esteem Scale) and Resilience (Connor-Davison Resilience Scale-10) utilising the Pearson's (*r*). Evidence from literature showed that anxiety and depression often co-exist (Kasper, 2001), but this relationship has been less examined within the context of this study. It is then assumed that individuals having retirement anxiety would possibly have symptoms suggestive of depression (Pinquart & Schindler, 2007). Self-esteem and resilience have also been observed to be protective against the occurrence and severity of psychological distress (Fernades et al., 2022; Noronha et al., 2009).

Results

Item Generation for Redeemer's University-Retirement Anxiety Scale (RURAS): As Saw and Ng (2001) recommended, the initial pool of items was generated through a series of literature reviews and an examination of related measures. The literature search was performed on relevant databases (PubMed, Google Scholar, Scopus) to ascertain key definitions and domains of retirement concerns. The keywords included *retirement*, *retirement worry/anxiety*, *pre-retirement transition*, *financial obligation* and *retirement planning*. The following scales were consulted for developing the items of RURAS, the RAS (Hayslip et al., 1997), SCRAS (Fletcher & Hansson, 1991), and the Process of Retirement Planning Scale (PRePS) (Rafalski et al., 2017).

Thirty-nine items were deductively generated to develop the RURAS with three proposed dimensions: financial planning, personal obligation, and social detachment. The items cover specific dimensions of retirement anxiety similar to the ones used in previous scales (Rafalski et al., 2017; Ugwu et al., 2019). Ten experts in different fields (psychiatry, psychology and sociology) reviewed the generated items. The experts were requested to assess items' content clarity, coverage, adequacy and relevancy to the proposed dimensions. The rationale was that expert evaluation is an acceptable technique for content validity (Hinkin et al., 1997; Irwing & Hughes, 2018). Twenty-one items (at 0.70% uniformity/agreement for an item to be included), were generally endorsed and agreed upon by the experts. In that regard, the 21 items endorsed by experts were subjected to an item refinement process.

Item Refinement: The sample (n=313) was randomly divided into two halves before refinement. Exploratory Factor Analysis (EFA) was performed on the 21 items of the proposed RURAS using the first half of the sample (sample 1, n=156). A factorial analysis approach similar to the methods adopted in other studies (Gutierres et al., 2000).

At the initial stage of EFA using Kaiser's benchmark Kaiser (1974), the statistics of the factor structure with eigenvalues > 1 were evaluated, based on Stevens (2009) recommended least factor loading criteria of 0.45. Items with factor loading < 0.45 or those reflecting redundancy (between item correlations > 0.80) on the items of RURAS were deleted to enhance the interpretability. The factors were rotated using the varimax (orthogonal) rotation technique to facilitate interpretation.

Exploratory Factor Analysis: Drawing on the guidelines provided by Cabrera-Nguyen (2019), to ascertain the suitability of factor analysis, Bartlett's Test of Sphericity should be significant (BTS = p< 0.05) and, with 0 to 1 range for the Kaiser-Meyer-Olkin (KMO) index, and the least value acceptable for factor analysis was set as ≥0.70.

Table 2: Total Variance Explained on the factorability of the 21-item measure for RURAS.

Components	Eigenvalues	% of Variance	Cumulative %
1	3.376	16.078	16.078
2	2.950	14.046	30.124
3	2.506	11.933	42.057
4	2.278	10.849	52.906
5	1.342	6.392	59.298

Table 2 shows the eigenvalues of the five components extracted after rotation. The eigenvalues of the five components explained (59.298%) of the total variation. The first component accounted for only 16.078 of the total variation compared with the other four components (14.046%, 11.933%, 10.8495, and 6.92%), respectively. The loadings of the proposed RURAS 21 items were across the five components. However, only 13 items loaded best (within the ≥0.45 cut-off point) across three components, indicating just three relevant dimensions for the construct. Analysis of the Kaiser–Meyer Olkin (KMO) test of sampling adequacy (KMO = 0.868) was statistically appropriate (Stevens, 2009). The Bartlett's Test of Sphericity was significant ($\chi 2$ = 709.273, df = 78,

p < .000). Thus, these findings endorse the factorability of the correlation matrices, and hence the principal component analysis (PCA) was conducted. The principal component extraction method analysis summary showed five components extracted with eigenvalues > 1, and presented in Table 3. Of the extracted five components, four items loaded best in the first, 5 in the second, and 4 in the third component. Three items (items 15, 19 and 21) loaded with a value less than the 0.45 cut-off point criterion for valid items inclusion, while items (14, 16, and 18) in the fourth, third and fifth components yielded a negative coefficient value were dropped. Due to this, 13 items were retained, as summarised in Table 3.

Table 3: Summary of the 13-Item RURAS factors loadings

Item	Subscale Name	Factor loadings	Mean (SD)	Corrected item-total correlation	McDonald's Omega if item is deleted
	Personal Obligation Concern (POC)				
RURAS 11	I feel bothered about my housing arrangement after retiring	.803	1.46(1.44)	0.81	0.91
RURAS 6	I am concerned about meeting up with my responsibilities after my retirement, i.e. extended family, social and religious	.766	1.51(1.32)	0.71	0.92
RURAS 7	I feel uncertain whenever I want to do something positive about my retirement.	.748	1.51(1.39)	0.72	0.91
RURAS 9	I am concerned about not having enough to send my children through higher education before or after my retirement	.640	1.44(1.41)	0.65	0.92
	Financial Planning Concern (FPC)				0.92
RURAS 4	I feel disturbed by the thoughts of running out of money after retiring.	.767	1.64(1.40)	0.61	0.92

RURAS 13	I am concerned about what to do for a living after my retirement.	.686	1.77(1.31)	0.64	0.92
RURAS 12	I feel bothered that I do not have enough insurance cover /investment for my retirement.	.680	1.73(1.43)	0.65	0.92
RURAS 1	I feel bothered about providing for my basic needs after my retirement.	.566	1.75(1.31)	0.67	0.92
RURAS 3	I feel concerned about my organisation not doing enough for my retirement.	.554	1.75(1.34)	0.59	0.92
Social Detachment Concerns (SDC)					0.92
RURAS 2	I am bothered about my productivity after leaving active service.	.805	1.62(1.37)	0.65	0.92
RURAS 5	I feel uncertain about the activities to engage in or spend my time after retirement (i.e. hobbies, leisure).	.738	1.86(1.39)	0.60	0.92
RURAS 8	I am concerned about the loss of connections with friends and colleagues after my retirement.	.498	1.51(1.41)	0.66	0.92
RURAS 10	I feel disturbed by the thought of my approaching retirement	.445	1.79(1.46)	0.71	0.92
	Eigenvalues	2.795	2.579	2.095	
	% of variance	21.503	19.836	16.114	
	% Cumulative	21.503	41.339	57.452	

Analysis information, F1= Personal Obligation Concerns F2= Financial Concerns, F3= Social Detachment Concerns, Determinant = .009, Barlett's test, $\chi2$ (78) = 709.273, p = 0.00, Kaiser-Myer-Olkin (KMO) of sampling adequacy = 0.868.

Table 3 shows the component loadings of the final 13 items RURAS. Four items on the first dimension (Personal Obligation Concerns – 6,7,9 and 11), 5 items loaded on the second dimension (Financial Planning Concerns – 1,3,4,12 and 13) and 4 items loaded on the third dimension (Social Detachment Concerns – 2,5,8 and 10).

Reliability of the Redeemer's University Retirement Anxiety Scale (RURAS): The values of the corrected item-total correlations used to establish discriminations in the items on the scale range between 0.59 and 0.81. This indicates that the items have adequate discrimination and should be retained (Cabrera-Nguyen, 2010). As indicated, it can also be observed that the deletion of any of the items from the scale did not significantly increase the total reliability. The internal consistency for the overall RURAS was acceptable (ω_t – 0.87), representing an adequate reliability coefficient (Zinbarg et al., 2005). There was no evidence of multicollinearity among the

13 items of the RURAS. Collinearity statistics revealed tolerance values close to 1.0 for all the items. The internal consistencies of the dimension's items, personal obligation, financial planning and social detachment, had Omega total (ω_t) values of 0.83, 0.76, and 0.72, respectively. (See Table 3)

Confirmatory Factor Analysis (CFA) of the RURAS items (n=157): The second half (n=157) was used to investigate the factor structure of the 13-item RURAS scale developed during EFA, a common technique for scale construction (Gutierres et al., 2000). Different fit indices, including the Comparative Fit Index (CFI), Incremental Fit Index (IFI), Normed Fit Index (NFI), Standardized Root Mean Square Residual (SRMR), and the Root Mean Square Error of Approximation (RMSEA), were utilised to examine the RURAS model fit indices (Hu & Bentler, 1999; Kline, 2015), for the CFA model were based on the criteria in (See Table 4).

Table 4: Model Fit Index for RURAS

Model Fit Index	Measures	Abbreviated	Accepted Value	RURAS Model Value
Absolute Fit Index	Goodness of Fit Index	GFI	≥0.90	0.921
	Chi-square/Degree of Freedom	CMIN/DF	≥3.0	1.529
	Standardised Root Mean Residual	SRMR	<0.05	0.0518
	Root Mean Square error of approximation	RMSEA	=.05 to .08	0.058
Incremental Fit Index	Comparative Fit Index	CFI	≥0.90	0.950
	Tucker-Lewis Index	TLI	≥0.90	0.937
	Normed Fit Index	NFI	≥0.90	0.901
Parsimony Fit Index	Parsimony Comparative Fit Index	PCFI	≥0.50	0.604

Table 4 summarises the 3-dimensional model of the 13-item RURAS using Sample 2 (n = 157). The fit indices derived after subjecting the 13-item of the RURAS to CFA indicated a modesty and acceptable level of fitness ($\chi2$=94.794, df=62, CMIN/DF=1.529, P=.005, GFI=0.921, TLI=0.937, NFI=0.901, CFI=0.950, RMSEA=0.058, SRMR= 0.0518), as all were within the recommended criteria (Hu & Bentler, 1999).
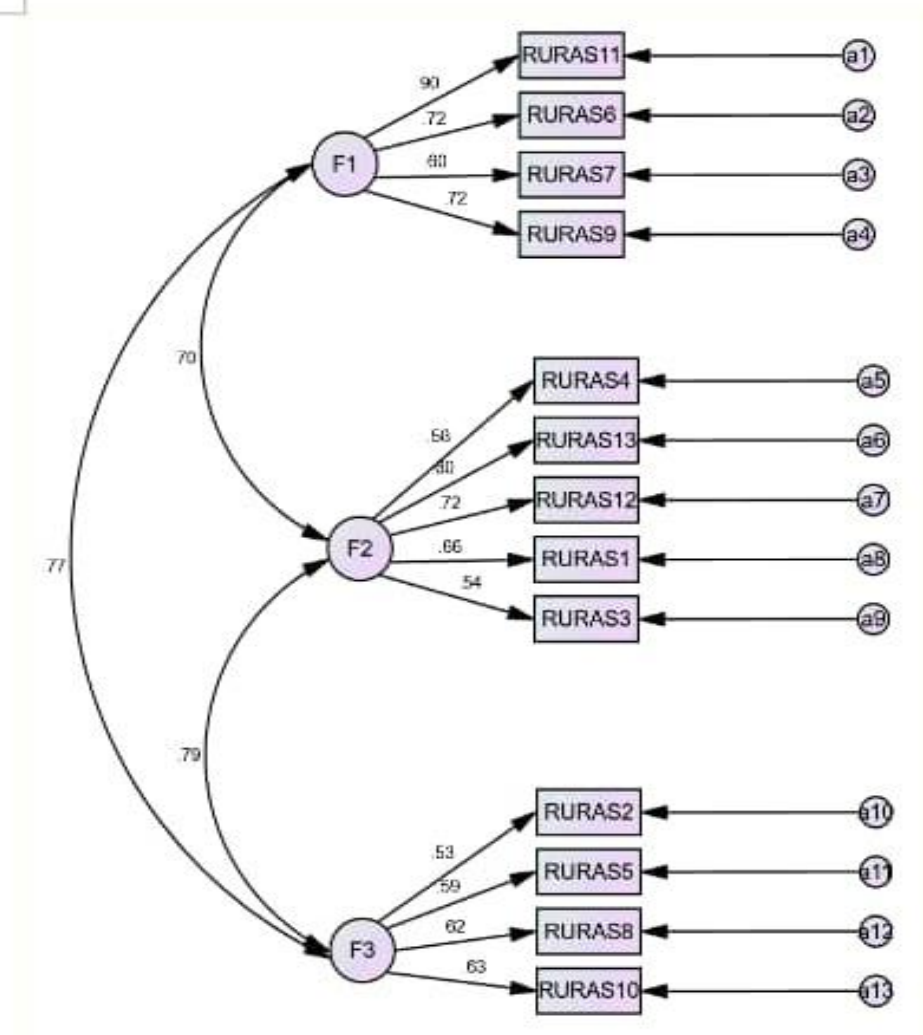
Figure 1 *reveals the CFA path analysis result, comprising the standardised model coefficients for each item, all values ranging from 0.53 to 0.90. Item loadings on the RURAS subscales are between 0.60 to 0.90 for the FI (Personal Obligation) subscale, 0.54 to 0.80 for the F2 (Financial Planning) subscale, 0.53 to 0.63 for the F3 (Social Detachment) subscale.*

Validity of the Redeemer's University Retirement Anxiety Scale (RURAS): Evidence of the criterion validity of RURAS was tested with other constructs (anxiety and depression) and (self-esteem and resilience). Significant positive correlation coefficients were observed between the RURAS subscales (POC, FPC, SDC) with HADS-Anxiety (=0.59, 0.49, 0.61, 0.56), respectively and between the RURAS subscales with HADS-Depression (=0.54, 0.44, 0.54, 0.53), respectively. That is, a moderately strong correlation was observed between RURAS and anxiety. Relatedly, the relationships between RURAS and Depression revealed that the presence of retirement anxiety may cause the emergence of depressive symptoms. Similarly,

the result showed that RURAS validly measures retirement anxiety among a general population of higher education employees facing or contemplating retirement within the Nigerian workforce. Further examination of the divergent validity of RURAS scales with self-esteem and resilience showed a statistically significant negative correlation between the RURAS subscales and the composite scores of RSES and CD-RISC. The results revealed a low to moderate negative correlation coefficient between the RURAS and its subscales, with RSE (=-0.49, -0.30, -0.41, -0.44, $P<.001$) and CDRISC-10 (= -0.24, -0.19, -0.13, -0.42, $P<.001$), respectively. The correlation matrix of the validity is summarised in Table 5.

Table 5: Bivariate correlation between RURAS scales, HADS-Anxiety, HADS-Depression, self-esteem and resilience among the sample (n=241)

Variable	1	2	3	4	5	6	7	8
1 RURAS	1							
2 Personal Obligation Concerns	0.94**	1						
3 Financial Planning Concerns	0.94**	0.72**	1					
4 Social Detachment Concerns	0.93**	0.71**	0.82**	1				
5 HADS-Anxiety	0.59**	0.49**	0.61**	0.56**	1			
6 HADS-Depression	0.54**	0.44**	0.54**	0.53**	0.79**	1		
7 RSES	-0.49**	-0.30**	-0.41**	-0.44**	-0.75**	-0.70**	1	
8 CD-RISC	-0.24**	-0.19*	-0.13*	-0.42**	-0.53**	-0.49**	0.66**	1
Mean	23.21	6.63	9.22	7.34	8.26	8.56	17.98	22.87
SD	12.37	4.27	4.89	4.09	4.72	4.87	6.32	8.68

*p<.01 level, *p <.05 level, RURAS, Redeemer's University-Retirement Anxiety Scale, HADS, Hospital Anxiety and Depression Scale; RSES=Rosenberg Self-Esteem Scale, CD-RISC = Connor-Davison Resilience Scale

Discussion

This study developed and validated a 13-item Redeemer's University Retirement Anxiety Scale (RURAS) assessing domains of anxiety-related to

retirement among non-academic university employees in Nigeria, using the steps for scale development as suggested by Irwing and Hughes (2018). The development process of RURAS

supported its content validation, which formed the basis for further examination of its factor structure, validity and internal consistency. This process lends additional support to addressing a valid and seemingly under-researched aspect of the retirement experience in higher institutions.

The newly validated 13-item multidimensional RURAS possessed satisfactory EFA and CFA results with acceptable psychometric properties, suggesting that the scale is suitable for measuring retirement anxiety among the general population of higher education employees within the Nigeria context and similar work settings in other African countries. This study revealed comparable levels of internal consistency compared to RAS (Hayslip et al., 1997). Using the Omega total reliability coefficient (Zinbarg et al., 2005), the reliability coefficients produced a robust internal consistency for RURAS and the Omega (ω) scores were not too high to render any of the items redundant (Hayes & Cotts, 2020). The internal consistency for the overall RURAS and its subscales were excellent. In summary, the McDonald's Omega reliability coefficient (ω_t) of (0.87) for the full scale (RURAS) and its subscales: 0.83 (personal obligation), 0.76 (financial planning) and 0.72 (social detachment), respectively, were observed. The factor structure of RURAS is consistent with the conceptualisation of retirement anxiety as a multidimensional construct as found in similar scales (RAS) by Hayslip et al. (1997). However, it is distinct from it because the personal obligation concern dimension measures the concern about perceived incapability to fulfil future responsibility after retirement. Most Africans believe in social norms of mutual interest and care for others (Olatomide, 2017). Financial obligations to family/dependents may elicit fear concerning retirement among the working class due to the need to execute some of these demands amid the current global economic constraints and depleting income (Kiso et al., 2019; Hershey & Mowen, 2000).

Usually, Western instruments designed to study retirement anxiety ignore the obligations aspect of concerns, despite past and recent studies citing the roles of childcare and family responsibilities as some of the significant sources of financial worry for those transitioning to retirement (Arogundade, 2016; Kiso et al., 2019). The scale also comprised of items that measure concern about activities planning of individuals, especially with the inclusion of items that examine whether the individuals are concerned about other activities to engage in for both income generation and leisure's after leaving work, "*I am concerned about what to do for living after my retirement*". The item examines a crucial aspect of retirement, relating to the need to replace excess time of retirement with activity that could facilitate socialisation and income generation after active service (Paul, & Batinic, 2010). Since it is common knowledge that work provides employees with a stimulating experience and enhances their identity, the absence of work may trigger a sense of boredom and loneliness (Hansson et al., 2019; Choi et al., 2013; Fenwick-Smith et al., 2018). It is opined that creating or planning to replace work-role activities with new ones in retirement is crucial to prospective retirees' well-being and mental health. Regarding the concerns about activity planning, Ryser and Wernli (2017) argued that the pre-retirement phase will likely generate stress and worry for individuals without a meaningful activity to replace their former work roles. Other findings supported early planning and preparation for engaging activities such as volunteering and bridge jobs to help the pre-retirees sustain their lifestyles and the structure of their daily routines, including incomes, social networking, participation in leisure activities, and sense of identity (Beehr & Bennett, 2015; Fenwick-Smith et al., 2018).

Furthermore, the correlations conducted in the course of the validation of the RURAS scales revealed a significant modest positive association between the RURAS (Financial Planning Concerns, Personal Obligation Concerns, and Social Detachment Concerns) and HADS (anxiety and depression) subscales. Therefore, the concurrent validity of the new scale (RURAS) is confirmed. These findings indicate that retirement anxiety could be seen as a form of anxiety, as it relates to an anticipatory fear of the consequences of disengagement from work, which has served as a significant influence on the personality and lifestyles of intending retirees.

The association between retirement anxiety and distinctive constructs (anxiety and depression) are in keeping with past results (Segel-Karpas & Bergman, 2020; Lahdenpera et al., 2022; Pinquart & Schindler, 2007). Past studies examining the effect of the transitions to retirement have found an association between retirement anxiety and depressive symptoms, pessimism and negative affect (Pinquart & Schindler, 2007; Kim & Moen, 2002). Also, it is opined that an individual's negative perception of the circumstances surrounding their impending retirement can induce anxiety and possibly impede their quality of life after exiting active work (Dang et al., 2022; Pabon-Carrasco et al., 2020). Relatedly, individuals experiencing anxiety-related issues in the pre-retirement phase have been observed to be at higher risk of trouble adjusting to retirement (Choi et al., 2013), resulting in severe physical and psychological health problems in old age (Froidevaux et al., 2018; van der Heide et al., 2013).

In addition, retirement has been observed to be a factor that can influence the risk of depression among intending retirees (Froidevaux et al., 2018; Kim & Moen, 2002). The findings of this study reveal a significant correlation between RURAS and the HADS-depression subscale, which also inadvertently contributed to the construct validity of the RURAS. Although some studies assert that depression should not be regarded as a shared experience of the pre-retirement phase (Dang et al., 2022), the present findings showed otherwise. This study supported the assertion that anxiety and depression tend to co-exist (Kasper, 2001). In their meta-analysis, Pabón-Carrasco (2020) found the incidence rate of depression to be 28% among retirees. At the same time, individuals with impending retirement exhibited more significant levels of negative emotions, among which are different psycho-emotional reactions suggestive of depressive symptoms.

Further examination of the concurrence validity of the RURAS sub-scales with the RSES (Rosenberg, 1965) and CDRISC (Connor & Davidson, 2003) was in keeping with the construct validity of RURAS. The observed significant negative correlation of RURAS scales with self-esteem and resilience suggested that individuals who have low self-esteem or are less resilient will experience higher levels of anxiety about retirement. This result further confirms the importance of resilience and positive self-esteem as mitigating factors against retirement-related concerns (Reitzes et al., 1996; Noronha et al., 2009). For instance, Hansson et al. (2019) opined that individuals approaching retirement might experience low self-esteem because of the imminent separation from the status and identity that employment gives to them. Conventionally, resilience has been regarded as man's capacity to positively adjust to and draw strength from unfavourable circumstances or risks (Noronha et al., 2009); it is the ability to pull through a significant difficulty that challenges the individual stability (Fenwick-Smith et al., 2018; Diachnco et al., 2021), resilience plays a vital role in inhibiting the severity and negative impact of psychological disorders (Ryser & Wernli, 2017). Thus, the association between RURAS scales with resilience in this study is consistent with previous findings (Beehr & Bennett, 2015; Diachenko et al., 2021; Fenwick-Smith et al., 2018). This possibly means that resilient individuals possess the capacity to cognitively reappraise the situations surrounding their retirement transition in a manner that will help them cope positively with the disruptions that follow it (Ryser &Wernli, 2017).

Limitations of the Study and Suggestions for Future Research

The present study has a few limitations considering the use of only four universities in southwestern Nigeria, which may not be an appreciable sample size for the generalisation of the result. Further research can test the instrument's factorial structure and reliability using a large sample size of employees in other work settings. Part of the limitation was that this study did not establish the discriminant validity and other reliability indexes, like test-retest reliability. Additional studies are needed to examine and confirm the factor structure and other psychometric properties, such as the scale's test-retest reliability, discriminant and predictive validity, among other working populations in sub-Saharan Africa. A future study might need to

use a longitudinal approach to understand how pre-retirees fared during navigation to retirement and their retirement outcomes against the cross-sectional approach used in this study. Generalising the findings of this research in other cultures should be done with caution since the study was carried out among non-academic staff in southwestern Nigeria. There is a need to re-establish its reliabilities and validity in other countries, considering that the Nigerian working population has distinctive socio-cultural experiences that may differ widely from other countries. However, the likelihood of variations in psychometric properties of the RURAS among other employees with similar socio-demographic characteristics in other parts of Nigeria is not likely.

Conclusions
The study provided evidence to support the validity and reliability of the RURAS among a sample of non-academic employees working in the Nigerian higher education setting. The RURAS can be utilised to assess retirement anxiety in cross-sectional surveys and to give information on the incidence and severity of retirement anxiety among employees in higher education institutions in Nigeria and related work contexts in Africa.

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