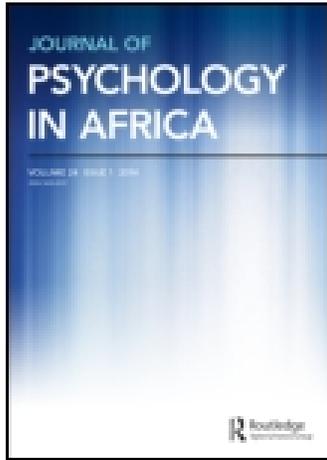


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## Journal of Psychology in Africa

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/rpia20>

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Published online: 01 May 2014.

To cite this article: Werner de Klerk, Q. Michael Temane & Alida W. Nienaber (2013) The Psychometric Properties of the Adapted and Revised Organisational Climate Description Questionnaire (AAROCDOQ), *Journal of Psychology in Africa*, 23:1, 139-143

To link to this article: <http://dx.doi.org/10.1080/14330237.2013.10820608>

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# The Psychometric Properties of the Adapted and Revised Organisational Climate Description Questionnaire (AAR OCDQ)

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**This study validated the Adapted and Revised Organisational Climate Description Questionnaire (AAR OCDQ) for school climate as experienced by teachers. Participants were 394 school teachers (72 male and 322 female) from 40 schools in South Africa. Internal consistency and factor structure were determined as well as the evidence for concurrent validity. The results of the study show that the AAR OCDQ yielded reliable scores and also indicated construct validity in a sample of South African teachers.**

*Keywords: school climate measure, wellbeing, coping, self-efficacy*

Individuals experience their workplaces uniquely based on the characteristics of those organisations. Organisations are characterised by whether they facilitate the performance of their employees (job resources) or impede their performances (job demands). A balance of job resources (social support, job enhancement opportunities, participation in decision making, and being psychological well) and job demands (workload, role ambiguity, role conflict, and stressful events) influence organisational wellbeing (Rothmann & Jordaan, 2006). According to Schaufeli and Bakker (2004), work engagement (a positive and fulfilling related state of mind that is characterised by vigour, dedication and absorption) is strongly influenced by job resources. Vigour refers to high levels of energy and mental resilience while working, dedication refers to deriving a sense of significance from one's work, and absorption is characterised by being happily immersed in one's work (Rothmann & Rothmann, 2010). High levels of psychological wellbeing and employee engagement play an important role in delivering outcomes that are associated with successful organisations (Robertson & Cooper, 2010), but the school environment also has the potential to either enhance or damage the mental wellbeing of staff and learners (Spratt, Schucksmith, Philip, & Watson, 2006).

According to Vos, Van der Westhuizen, Mentz and Ellis (2012) an ineffective organisational climate in a school can lead to a collapse in school activities and could cause a school to become dysfunctional. Jackson and Rothmann (2006) recommended that principals should pay more attention to the psychological wellbeing of educators. Systematic factors such as religious aspects, beliefs, philosophies, the vision, mission and ethos of the school, norms and values should also be taken into consideration regarding the organisational climate and organisational culture of a school (Vos et al., 2012).

In the school context, organisational climate can be defined as a "relatively enduring, pervasive quality of the internal environment of a school experienced by educators and/or learners that influences their behaviour and proceeds from their collective perceptions" (Pretorius & De Villiers, 2009, p. 33). According to Hoy and Miskel (2005, p. 185) school climate refers to the

"heart and soul of a school, psychological and institutional attributes that give a school its personality, a relatively enduring quality of the entire school experienced by members, which describes their collective perceptions of routine behaviour, and affects their attitudes and behaviour in the school". For instance, Pretorius and De Villiers (2009) reported that educators from their study perceived their relations with their principals as closed (non supportive, inflexible, interfering and controlling), while educator-educator relations were perceived as more open (meaningful, tolerant, friendly, supportive, respectful, accepting and enthusiastic). According to Pretorius and De Villiers (2009), these findings have significant implications for the implementation of change in schools, educators' job satisfaction, productivity, motivation, wellbeing and learner achievement. School climate is an environment of optimal functioning, with important positive psychological aspects such as mental health (especially emotional wellbeing) coping self-efficacy and core self-evaluations. Thus it is important to validate a scale that measures such an attribute that could have the potential to influence many outcomes for schools.

## Goals of the Study

The study aimed to determine the psychometric properties of the Adapted and Revised Organisational Climate Description Questionnaire (AAR OCDQ), which is a measure of school climate. The following question guided the study:

What are the psychometric properties of the Adapted and Revised Organisational Climate Description Questionnaire (AAR OCDQ)?

## Method

### Research Design

A cross-sectional survey design was implemented in this study relative to the main aim of the study. In cross-sectional studies variables of interest in a sample of subjects are assayed once and the relationships between them are determined (Creswell, 2009; Hopkins, 2000).

## Participants

Participants were a convenience sample of 394 teachers (72 male and 322 female) from 40 South African schools (see Table 1 for demographics).

## Measuring Instruments

Participants completed the following four measuring instruments: the Adapted and Revised Organisational Climate Description Questionnaire (AAROCQ), the Mental Health Continuum – Short Form (MHC-SF), the Core Self-Evaluation Scale (CSES), and the Coping Self-Efficacy Scale (CSE). These are described next.

*The Adapted and Revised Organisational Climate Description Questionnaire (AAROCQ).* The AAROCQ is a 40-item 4-point Likert-type rating scale (1 = occurs rarely, 2 = occurs sometimes, 3 = occurs often, 4 = occurs very frequently). The short version of the AAROCQ comprises 20-items, and is the case for validation in this study.

*The Mental Health Continuum – Short Form (MHC-SF):* Keyes et al., 2008; Keyes, 2005, 2007) is a 14 items measure of emotional wellbeing (EWB), social wellbeing (SWB) and psychological wellbeing (PWB). The total scale range (0 - 70). Low scores suggest low levels of wellbeing and high scores suggest high levels of wellbeing (and not the distinction made by Keyes et al. (2008) of flourishing/languishing). In a previous study the internal reliability of the overall MHC-SF Scale was 0.74 (Keyes et al., 2008). The reliability of scores from the MHC-SF Scale in this study was 0.89.

*The Core Self-Evaluation Scale (CSES:* Gardner & Pierce, 2009; Tsaousis, Nikolaou, Serdaris, & Judge, 2006) is a 12-item scale to measure a dispositional state of the individual regarding their personality, namely global self-esteem, generalised self-efficacy, and neuroticism (Gardner & Pierce, 2009). Sample items are “I am confident I get the success I deserve in Life” and “when I try, I generally succeed.” It is scored on a 5-point Likert-type scale. The total scale range (0 - 60). Low scores indicate low levels of functioning on their self-evaluations and high scores indicate high levels of self-evaluation. In the study of Tsaousis et al. (2006) the alpha coefficient score for CSES was 0.80. The reliability of scores from the CSES in this study was 0.83.

*The Coping Self-Efficacy Scale (CSE:* Chesney, Folkman, & Chambers, 1996; Wei, 2009) is a 26-item scale measure to measure individual’s self-efficacy to cope with life stressors (Chesney et al., 1996). Responses to the self-efficacy scale are based on an 11-point Likert-type scale (0 = cannot do at all; to 10 = certainly can do). A coping self-efficacy score can be created by summing the item ratings; higher scores indicate higher self-efficacy. The total scale range (0 - 260). The alpha coefficient ( $\alpha$ ) for Chesney et al. study was 0.95. The reliability of scores from the CSE in this study was 0.94.

## Procedure and Ethical Consideration

Ethical approval was obtained from the Ethics Committee of the North-West University (Potchefstroom Campus: NWU-0072-08-S1). Written consent was obtained from the school principals of each school as well as all the participants to voluntarily participate in the study. The participants were in-

Table 1  
*Characteristics of Participants*

Variable		Frequency	Percent
Gender	Male	72	18.0
	Female	322	82.0
	Total	394	100.0
Categories of Age	21-34	111	28.2
	35-49	155	39.3
	50-65	113	28.7
	66 and above	15	3.8
	Total	394	100.0
Nature of employment	Permanent	298	75.6
	Temporary	23	5.8
	GB appointed	71	18.1
	Total	392	99.5
Teaching qualifications	Diploma	265	67.2
	Bachelors (B.Ed.)	115	28.3
	Total	380	96.4
Highest academic qualifications	Diploma	166	42.1
	Bachelors	162	41.1
	Honours	50	12.7
	Masters	9	2.3
	PhD	1	0.3
Total	388	98.5	

Note. Not all the participants completed, therefore the differences in frequencies; GB=Governing Body

formed that their identity would be protected and that they could withdraw from the research project at any time.

### Data Analysis

Descriptive statistics (means, standard deviation) of the study measures are indicated including psychometric properties (internal consistency, inter-item correlations and fit indices) of the main variable were calculated. To attest to the construct validity of the main study measure, AAROCDDQ is correlated with MHC-SF, CSES and CSE. The effect sizes of the correlations are also reported according to guidelines given by Field (2005). Factor analysis (both explanatory and confirmatory) was conducted to assess the structure of the AAROCDDQ. Eigen values and the scree plot were used to assess the structure of AAROCDDQ and fit indices (RMSEA, GFI,  $\chi^2$ ) will be used to confirm the structure. As the groups of male and females differ substantially the factor structure of the groups will also be studied separately. Therefore we expect differences in individuals testing fit for males and females (Type I error).

## Results

### Internal Consistency and Other Correlational Measures

The descriptive statistics of the AAROCDDQ were calculated. The table below summarises the statistics of all study measures.

The internal consistency ( $\alpha$ ) as a measure of reliability of the AAROCDDQ reduced scale for the total group was 0.89 (males  $\alpha = 0.91$ ; females  $\alpha = 0.89$ ). According to Pietersen and Maree (2009) the acceptable Cronbach alpha coefficient is 0.70 (low reliability), 0.80 (moderate reliability), and 0.90 (high reliability). Therefore  $\alpha = 0.89$  of the AAROCDDQ is considered as a level of high reliability.

The AAROCDDQ correlates positively with the other three main scales in the study (MHC-SF  $r = 0.47$  significant at 1 % level, CSE  $r = 0.30$  significant at 1 % level, and CSES  $r = 0.32$  significant at 1 % level). The effect sizes of these correlations reflect large to medium effect sizes (Field, 2005). The significant correlations of the AAROCDDQ and other measures of optimal functioning indicate construct validity.

### Construct Validity

Table 3 presents factor loadings and item-total correlations of a reduced model of the AAROCDDQ. The items explain 36.19% of the variance based on this reduced model.

Confirmatory factor analysis was implemented with the program Statistica (version 8) to test model fit of the 20-item model. Three models were tested, with the first one comprising of both males and females (total model), the second model with females only and the third model with males only to further attest to issues of equivalence. All three models indicated poor fit as indicated in table 4 below based on suggested fit indices by Browne and Cudeck (1992). The split of the model by gender was necessitated by the ratio of males to females in the study (322 females and 72 males).

## Discussion

The results of the study show that the reliability of scores from the shortened AAROCDDQ was high for the sample of teachers in this study. The AAROCDDQ demonstrated evidence of construct validity based on its positive correlations with other measures of optimal functioning such as the Mental Health Continuum-Short Form, Coping Self-Efficacy Scale and Core Self-Evaluations Scale.

The results also show, however, that the reduced scale has a poor fit with the data. Firstly, all models were significant based on the size of  $\chi^2$  and its p-value. Although the interpretation of the  $\chi^2$  test is susceptible to sample sizes and can influence interpretation, a significant value indicates a poor fit (Mulaik et al., 1989) as was the case in this study. Secondly, the point estimate (RMSEA) was well above the threshold suggested by Browne and Cudeck (1992), who benchmark this parameter at least at 0.05 or below, thus indicating poor fit. This finding was the same for the reduced model, and the models for females and males with the latter as the worst fit. The overall fit of the total was consistent for the separate models for males and females on the same data indicating a level of equivalence (Rothmann & Rothmann, 2010).

This study also adds to pertinent arguments in psychometrics that not all reliable measures can be valid (Gravetter & Forzano, 2009; Mitchell & Jolley, 2010). It is concluded that future studies could further analyse the scale on an

Table 2

### Descriptive Statistics and Correlations of Measures

Variables	Dimension	Mean	SD	1	2	3	4	5	6	7	8	9	10
AAROCDDQ_Tot		61.14	8.86	1.00									
MHC-SF_Tot		50.16	9.80	.47**	1.00								
	EWB	11.51	2.48	.47**	.80**	1.00							
	SWB	15.24	4.84	.40**	.86**	.53**	1.00						
	PWB	23.46	4.20	.35**	.86**	.64**	.54**	1.00					
CSE_Tot		182.81	33.82	.30**	.65**	.54**	.47**	.65**	1.00				
	PFC	85.30	16.01	.30**	.62**	.52**	.45**	.60**	.94**	1.00			
	SUE	63.74	13.17	.28**	.59**	.51**	.42**	.59**	.94**	.84**	1.00		
	SFF	34.25	7.97	.26**	.56**	.43**	.41**	.58**	.79**	.62**	.67**	1.00	
CSES_Tot		43.61	6.64	.32**	.60**	.58**	.39**	.61**	.61**	.59**	.58**	.46**	1.00

Note. NB: AAROCDDQ = Adapted and Revised Organisational Climate Description Questionnaire (reduced scale), MHC-SF = Mental Health Continuum-Short Form, EWB = Emotional Wellbeing, SWB = Social Wellbeing, PWB = Psychological Wellbeing, CSE = Coping Self-Efficacy Scale, PFC = Problem focused coping, SUE = Stop unpleasant emotions and thoughts, SFF = Support from friends and family, CSES = Core Self-Evaluations Scale, \*\*Correlation is significant at 1% level.

Table 3  
*The Factor Loading and Item Total Correlation of Reduced Model*

Item	Factor Loading	Item total correlation
Teachers really enjoy working at the school	0.76	0.70
The teachers are committed to the school's goals	0.73	0.61
Teachers are proud of their school	0.73	0.76
This school achieves its goals and objectives	0.70	0.82
Teachers respect the professional competence of their colleagues	0.69	0.85
Decisions made in this school are carried out effectively	0.68	0.94
The professional development planning in the school takes into account my individual needs and interests	0.66	0.80
Learners are treated as responsible people in this school	0.66	0.75
The teachers accomplish their work with energy, vigour and pleasure	0.62	0.68
Learners make teaching at this school enjoyable	0.61	0.73
Teachers frequently discuss and share teaching methods and strategies with each other	0.59	0.73
New teachers are readily accepted by colleagues	0.56	0.94
I am encouraged to pursue further professional development	0.55	0.67
There are usually opposing sides among teachers on issues of importance at the school	0.54	0.60
I am happy with the quality of feedback I receive on my work performance	0.54	0.76
Learners come prepared to class	0.52	0.55
Teachers have fun socializing together during school breaks	0.49	0.84
Teachers are frequently asked to participate in decisions concerning administrative policies and procedures at the school	0.48	0.76
The principal sets an example by working hard himself/herself	0.43	0.60
Staff meetings do not achieve their objectives	0.40	0.49

Note. Eigenvalue = 7.23; % variance explained = 36.19; F = 52.21, df = 19/363; p = 0.01

Table 4  
*Confirmatory Factor Analysis: Model Fit Indices*

Model	$\chi^2$	df	p	RMSEA	GFI
Total	3585.83	170	0.01	0.2	0.58
Females	3776.24	170	0.01	0.21	0.55
Males	2077.75	170	0.01	0.25	0.43

Note. NB: Total = AAROCQ reduced model,  $\chi^2$  = Chi-Square, df = degrees of freedom, p = p-value, RMSEA = Root Mean Square Error of Approximation, GFI = Goodness-of-fit.

item level using procedures such as Differential Item Functioning (DIF) to improve the possibility of validity among subgroups.

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