Rudolf Moos' Work Environment Scale

Adopt-a-Measure Critique

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The Work Environment Scale was created by Rudolf Moos, a Professor in the Department of Psychiatry and Behavioral Sciences at Stanford University, in the 1970s (Mathison, 2005). This scale is one of nine Social Climate Scales created by Moos in the 1960s and the 1970s that seek to operationalize and measure the underlying dimensions of diverse social environments (Holahan, 2002). The Work Environment Scale was created to measure the social environments of industrial or work milieus (Moos, 1974). The theory behind the creation of this measure is that there is an "organizational concern for maintaining a good working environment" and there is thus a need to develop effective tools to properly assess this environment (Kanungo, 1985, p. 1398). The Work Environment Scale is comprised of 90 true and false statements that represent ten subscales or dimensions, which are divided into three sets: the Relationship dimension, the Personal Growth or Goal Orientation dimensions, and the System Maintenance and System Change dimensions (Palkon, 1997). The hope is that when used appropriately the Work Environment Scale can help a business evaluate productivity, assess employee satisfaction and clarify the expectations and goals of employees, which in turn, ensures a healthy work environment (mindgarden.com).

Assessments of the Work Environment Scale can be purchased online at MindGarden.com. There are no requirements or certifications needed to administer or score the Work Environment Scale assessments. Pencil and paper assessments can be bought in bulk for $2 or less each depending on the quantity, for organizations to self-administer and evaluate. Or, if preferred, an organization can choose to spend $11–$15 per assessment (again depending on quantity purchased) and Mind Garden will handle the entire process from assessment to results, and onto personal reports, online.

Furthermore, if desired an organization can pay an additional $250 for Mind Garden to put a full group report of all the participants' results together to streamline and best understand the outcomes of the assessment.

Each of the dimensions of the Work Environment Scale measure different items. The below table, Table 1, from a collaborative study between Andrew Billings and Rudolf Moos in 1982, gives a good overview and description of the ten subscales of the Work Environment Scale.

Table 1. Work Environment Scale subscale descriptions

	Relationship dimensions
1. Involvement	The extent to which employees are concerned and committed to their job
2. Peer cohesion	How friendly and supportive employees are to each other
3. Supervisor support	The extent to which management is supportive of employees and encourages employees to be supportive of each other
	Personal growth or goal orientation dimensions
4. Autonomy	How much employees are encouraged to be self-sufficient and to make their own decisions
5. Task orientation	The emphasis on good planning, efficiency and getting the job done
6. Work pressure	The degree to which the press of work and time urgency dominate the job milieu
	System maintenance and change dimensions
7. Clarity	The extent to which employees know what to expect in their daily routine and how explicitly rules and policies are communicated
8. Control	How much management uses rules and pressures to keep employees under control
9. Innovation	The emphasis on variety, change, and new approaches
10. Physical comfort	The extent to which the physical surroundings contribute to a pleasant work environment

The Relationship dimension reviews the quality of personal relationships in a setting – how involved people are, how they assist each other and how openly they express

emotions and feelings (Salkind, 2007). The Personal Growth or Goal Orientation dimensions look at how environments may encourage certain goals and procure change. Most specifically in the workplace this dimension reviews an employee's autonomy, task orientation and work pressures (Salkind, 2007). Lastly the System Maintenance and Change dimensions aim to measure the order and organization of the given environment, how clear the expectations are and how responsive the environment is to change (Salkind, 2007).

The Work Environment Scale is administered in three forms: Form R, or real, measures the employee's perception of the work environment; Form I, or ideal, measures the ideal workplace goals and values your employee has; and Form E, or expected, assesses an employee's work environment expectations (mindgarden.com).

RELIABITY

In 1994, with the release of the third edition of the Work Environment Scale Manual, new normative data for the measure was provided, and the Work Environment Scale was clouted as possessing sound psychometric properties (Palkon, 1997). According to Palkon's review, at this point the stability, or test-retest, reliability was .69 for clarity and .83 for involvement, and the internal consistencies range was from .66 to .84. The test-retest reliability is a correlation created by retesting subjects using the same measure after a designated time frame, and a high correlation between the scores indicates reliability of the measure; publishable data for acceptable intercorrelations of this form of reliability is .7 to .8. While the article fails to mention the lag time between the two test administrations, the author indicates, and other scholars would agree, that

these results make the Work Environment Scale a reliable and valid measure, that at this point was becoming viewed by many as highly practical and useful (Palkon, 1997).

Table 4. Form R Internal Consistencies, Corrected Average Item-Subscale Correlations, and One-Month Test-Retest Reliability

Subscale	Internal Consistency		Corrected Average Item-Subscale Correlations (N = 1,045)	One-Month Test-Retest Reliability (N = 75)
	Initial Sample (N=1,045)	Subsequent Sample (N=742)		
Relationship Dimensions				
Involvement	.84	.80	.52	.83
Coworker Cohesion	.69	.68	.36	.71
Supervisor Support	.77	.77	.44	.82
Personal Growth/ Goal Orientation Dimensions				
Autonomy	.73	.72	.39	.77
Task Orientation	.76	.76	.42	.73
Work Pressure	.80	.78	.47	.76
System Maintenance/ Change Dimensions				
Clarity	.79	.74	.45	.69
Managerial Control	.76	.75	.41	.79
Innovation	.86	.82	53	.75
Physical Comfort	.81	.76	.49	.78

Fourteen years later, in 2008, Rudolf Moos' Fourth Edition of the Work Environment Scale Manual was released. The above table, table 4, is from this next edition of the manual, and showcases the internal consistencies for all 10 subscales of the Work Environment Scale in Form R. This data was collected by retesting the initial

sample one month after the original test date. In this study the data gathered led to intercorrelations of the 10 subscales that range from .69 to .83, which demonstrates an acceptable range to indicate reliability (Moos, 2008). In this case all but one of the 10 subscales falls within the acceptable range, with the lowest of .69 in clarity scale, falling just below this acceptable numerical value.

Table 5. Form R Subscale Intercorrelations (N = 1,045)

Subscales	INV	CC	SS	AU	TO	WP	CL	MC	INN	PC
Involvement	—	53	47	48	54	-03	37	-07	50	30
Coworker Cohesion		—	50	37	36	-12	38	-08	37	22
Supervisor Support			—	50	29	-19	45	-19	43	28
Autonomy				—	27	-08	24	-27	51	19
Task Orientation					—	14	47	22	33	23
Work Pressure						—	-20	19	-03	-23
Clarity							—	23	23	39
Managerial Control								—	-22	08
Innovation										23
Physical Comfort										—

Note. Decimals are omitted.

Furthermore, pulled from the same fourth edition of the Work Environment Scale Manual, the above table, table 5, intercorrelated a subgroup of 1,045 employees in general and health care work groups. According to Moos the categories of involvement, coworker cohesion, and supervisor support are positively related to each other as well as to the subscales of autonomy and task orientation. It is important to note that the intercorrelations displayed in this table account for less than 10 percent of the subscale variance (Moos, 2008).

An interesting study presented by Abraham and Foley used a sample that consisted of 153 junior nursing students, completing the same 9-week rotation, which gives a very similar experience level to each individual being tested. The below two tables, table 1 and table 2, show the alpha coefficients of short forms of two similar tests:

Rudolf Moos' Work Environment Scale that we have been reviewing through the length of this paper, as well as the Ward Atmosphere Scale (Abraham & Foley, 1984). While it seems the goal of this study was to obtain convergent validity for these measures, the proper data is not presented to draw that conclusion. Convergent validity testing is done by giving the same group of subjects two measures that are used to test the same thing; the results must then show high correlation in order to prove this validity. In this instance the researchers broke down each measure into a short form that asked similar questions, about similar topics, in different ways – a nearly perfect research construction to prove convergent validity. This method brought about 13 subscales and one overall score that the researchers could compare.

TABLE 1

ALPHA COEFFICIENTS FOR THE WORK ENVIRONMENT SCALE (40 ITEMS)

Over-all	.94
Major Dimensions	
Relationships	.88
Personal Growth	.75
System Maintenance and Change	.85
Subscales	
Involvement	.73
Peer Cohesion	.63
Supervisor Support	.71
Autonomy	.56
Task Orientation	.75
Work Pressure	.04
Clarity	.63
Control	.41
Innovation	.80
Physical Comfort	.58

TABLE 2

ALPHA COEFFICIENTS FOR THE WARD ATMOSPHERE SCALE (40 ITEMS)

Over-all	.93
Major Dimensions	
Relationships	.85
Treatment Programming	.82
Administrative Structure	.80
Subscales	
Involvement	.74
Support	.69
Spontaneity	.66
Autonomy	.79
Practical Orientation	.74
Personal Problem Orientation	.65
Anger and Aggression	.55
Order and Organization	.76
Program Clarity	.66
Staff Control	.45

The results of these two tests, administered in the final hours of the subjects' last day of clinical practice, produced many high alpha coefficients in several of the subscales (Abraham & Foley, 1984). While there is variance between the scores, this can be attributed to a variety of factors, and it is presumed that giving these tests in their full forms, as both the true/false form and the Likert-scale format, would clear up some of these minor discrepancies (Abraham & Foley, 1984). As mentioned previously, I believe the authors of this study were hoping to prove convergent validity, as all steps were taken in the correct direction to accomplish this, but the researchers fail to share the correct data, the Pearson r, to make this point. However, all is not lost with this research, as there is considerable evidence presented that shows many of the subscales had fairly high alpha coefficients that further demonstrate the inter-item reliability of the Work Environment Scale.

Table 6. Form R Subscale Stabilities for Intervals from 1 Year to 10 Years

Subscale	1 Year (N = 756)	3-4Years (N = 449)	6 Years (N = 225)	9-10 Years (N = 192)
Relationship Dimensions				
Involvement	.63	.47	.57	.41
Coworker Cohesion	.56	.43	.56	.32
Supervisor Support	.57	.37	.48	.45
Personal Growth/ Goal Orientation Dimensions				
Autonomy	.55	.41	.53	.37
Task Orientation	.56	.44	.46	.39
Work Pressure	.62	.53	.46	.34
System Maintenance/ Change Dimensions				
Clarity	.60	.49	.50	.39
Managerial Control	.63	.52	.51	.53
Innovation	.59	.51	54	.44
Physical Comfort	.64	.54	.57	.56

Note. When respondents completed the WES at both intervals (that is, at both 3 and 4 years or at both 9 and 10 years), both sets of results are included.

Longitudinal testing and research is not as common in the field of Creative Studies as we would like, but table 6, displayed above, demonstrates Moos' ability to compare an original sample of subjects at 4 intervals over a decade (Moos, 2008). As would be expected, the stability of results degrade over more and more time, and of course the subject pool decreases as individuals change positions or companies (Moos, 2008). However, there are interesting conclusions and insights that can be considered and drawn from this data, even though the intercorrelation values have dropped to a range of

.32 to .64. This most likely simply indicates adjustments in the work environment, which is a variable that cannot be controlled by the researcher.

VALIDITY

Rudolf Moos' Fourth Edition of the Work Environment Scale Manual states that "After describing a conceptual framework to guide a review of relevant research, we discuss how the Work Environment Scale has been used to describe and compare work environments and to focus on their determinants and outcomes. In general, the findings support the construct, concurrent, and predictive validity of the Scale (Moos, 2008, p. 52)." Several pages of the manual go on to discuss the applications of the Work Environment Scale in different types of work settings from social service agencies and correctional facilities, and on to educational settings and hospitals (Moos, 2008). While the research, and to some degree the summary of the findings, for each is presented, there are no hard facts or resultive data presented to the reader that justifies any form of construct, concurrent, and predictive validity. This seems incredibly curious to me, there are pages and pages of the manual that attempts to outline and discuss the validity of the Work Environment Scale, yet nothing can completely convince the reader that this has actually been accomplished.

In line with this view is Kanungo's 1985 Review of the Work Environment Scale. It is stated "The questions of construct and criterion-related validity of the Work Environment Scale have not been properly answered in the manual (Kanungo, 1985, p. 1398)." As I found through my research, Kanungo agrees that there are many references to research and clinical studies that utilized the Work Environment Scale, yet none of

them either proved validity or gave enough information to support these efforts. It is very interesting that there seems to have been many attempts, by many researchers, to prove the validity of the Work Environment Scale, yet there are no hard results to allow a conclusion of validity to be drawn.

USEFULNESS

The Work Environment Scale is designed in an incredibly, user-friendly manner. The instructions are displayed in a short, easy-to-read manner and the true/false questions that are used through the entirety of the measure make it easy and simple for the user to work through quickly. Each form in it's own right does not take long to complete, but to complete all three forms, the Real, the Ideal and the Expected, in totality would probably take approximately an hour for the average user to finish. While there is no certification necessary to properly score the Work Environment Scale, I personally found the method slightly confusing, and had to read the instructions several times to ensure I was using it properly. The manual does provide a simple set of norms with which to relate your scores. The information that is created by the results of the Work Environment Scale, when reviewed and used appropriately can be very useful to the administration of an organization.

CONCLUSION

Overall I have found researching the Work Environment Scale to be very interesting. Personally, I often have a lot of questions about my own work environment; in everything from the support I receive, to the physical workspace. It was wonderful to

see a measure that's intent is to seek answers from employees that best describe their feelings day in and day about their work place. It is however, not a very creative assessment in my opinion. The point of the assessment is not to create a descriptive profile of the employees, or seek their strengths and weaknesses in any particular tasks or abilities. The creativity portion would come in how the administrators use the data collected to seek better solutions and ways to improve the environment they provide to their associates. In this sense creativity, seeking unique and novel solutions to the problems the assessment discovers, becomes very prevalent.

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