

AD-A135 352 A SET OF ORGANIZATIONAL-CLIMATE MEASURES: INTERNAL
CONSISTENCY FACTOR STR. (U) SCHOOL OF AEROSPACE
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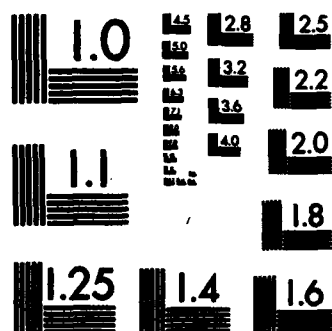
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**A SET OF ORGANIZATIONAL-CLIMATE MEASURES:
INTERNAL CONSISTENCY, FACTOR STRUCTURE,
AND PREDICTIVE POWER**

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October 1983

Final Report for Period January 1980 - December 1981

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USAF SCHOOL OF AEROSPACE MEDICINE
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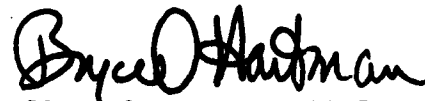
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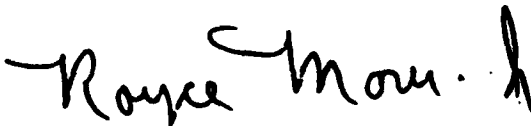
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20. ABSTRACT (Continued)

Internal consistency analysis and factor analysis were used to assess reliability and dimensional purity, while correlational analysis was used to evaluate relations with selected performance and job-satisfaction criteria. The organizational-climate measures demonstrated promising psychometric characteristics. Generally high reliabilities (.80 to .95), satisfactory factor structure, and encouraging validities provide a sound foundation for further refinement.

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A SET OF ORGANIZATIONAL-CLIMATE MEASURES: INTERNAL CONSISTENCY,
FACTOR STRUCTURE, AND PREDICTIVE POWER

INTRODUCTION

Organizational climate refers to the perceived milieu or atmosphere created within a work setting. Previous research¹ has indicated that organizational climate is created as a result of the combined interactive effects of policies, norms, leader behavior, management practices, and other organizational conditions, and can have a decisive impact on human performance and satisfaction. (See James and Jones 1974, 1976, 1980; Jones and James 1979; Mitchell 1979; and Schneider 1975, for related background information.) A major obstacle to understanding organizational behavior is the lack of highly reliable instruments to assess the principal dimensions of an organization's climate.

Over a decade ago, an effort was begun to integrate organizational research and postulate a set of organizational-climate dimensions that might have generic utility in relation to performance and personal-satisfaction criteria (Secrist, doctoral research). This initial effort culminated in four related avenues of research.

1. An intensive study of approximately 1,000 U.S. Air Force scientist-engineers was completed to provide a testbed for evaluating organizational theory, new multivariate conceptual approaches, and prototype assessment instruments (Secrist 1975).

2. Efforts were begun to identify the important dimensions of organizational climate¹ and develop a dimensional taxonomy that would classify and account for a wide variety of organizational conditions (Secrist et al. 1983).

3. A total-spectrum model of human and organizational effectiveness was developed which synthesizes the major factors influencing effectiveness within the total organizational environment^{2,3} (Secrist 1983).

¹G. E. Secrist. Scientific excellence through enlightened management and healthy organizational environments. Book submitted for publication, 1982.

²G. E. Secrist. Organizational research and organizational development. Briefing/technical presentation. Personnel Research Division, U.S. Air Force Human Resources Laboratory, Lackland AFB, Tex., Sep 1973.

³G. E. Secrist and T. M. Longridge. New training research program. Briefing/technical presentation/proposal. U.S. Air Force School of Applied Aerospace Sciences, Sheppard AFB, Tex., June 1975.

4. Work was started to develop a set of measures with high reliability, dimensional purity, and validity to assess each of the principal dimensions of organizational climate^{2,4,5} (Secrist 1975).

PURPOSE

The purpose of this paper is to report on the most recent efforts pertaining to the fourth avenue of research and to interface these efforts with the other three avenues specified in the Introduction. More specifically, the objectives of the efforts reported herein were to (a) verify the internal consistency and validity of the organizational-climate measures used in an exploratory study of 1,000 U.S. Air Force scientist-engineers; (b) determine the dimensional purity, internal consistency, and validity of a refined set of organizational-climate measures developed from the original measures; (c) determine the factor structure of both the original and refined sets of organizational measures; (d) evaluate the linear and curvilinear predictive power of the original and refined measures; and (e) assess the development status of the refined set of measures against a new taxonomy of organizational-climate dimensions, which was derived from a new model of human and organizational effectiveness (Secrist 1983).

The total-environment exploratory investigation on which this analysis is based focused on psychological, organizational, and environmental factors associated with the performance and job satisfaction of scientist-engineers working in military research and development (Secrist 1975). Descriptions of the research sample, variables and measurement instruments, data collection procedures, and data analyses and evaluation follow.

METHODOLOGY

Research Sample

The research population involved scientist-engineers working in organizations concerned with research and development (R&D) of Air Force space and missile systems. These organizations are responsible for the R&D, tests, and engineering related to military and civilian satellite programs, space boosters, ballistic missile systems, space probes, reentry systems, and other projects supporting specific Air Force and National Aeronautics and Space Administration (NASA) programs.

⁴G. E. Secrist. A multivariate total-spectrum assessment of scientist-engineer performance and satisfaction. Manuscript in preparation, 1983.

⁵G. E. Secrist and G. Germadnik. The development of dimensionally pure measures of organizational climate. (Briefing report/unpublished research) Personnel Research Division, U.S. Air Force Human Resources Laboratory, Lackland AFB, Tex., 1973.

The scientist-engineers comprising the research sample were located at five separate West Coast space and missile laboratories and test centers. They were all U.S. Air Force commissioned officers serving, for the most part, in the grades of lieutenant through lieutenant colonel. The research sample can be characterized as predominantly young (91% under the age of 43) and composed mostly (about 88%) of officers in the grade of major and below.

The education, in level and diversity, of these scientists-engineers was impressive. Over 70% of the officers had either advanced degrees or at least some work beyond the baccalaureate in academic fields such as astronautical engineering, aeronautical engineering, physics, chemistry, electrical engineering, mechanical engineering, bioastronautics, human factors engineering, engineering psychology, or computer sciences.

Specific methodological approaches included saturation and dense sample techniques (Coleman 1958-59, Scott 1965), open and direct measurement procedures, and participation by the research population. The saturation sampling technique was effective. Of the 1,093 scientist-engineers present for duty during the data collection period, at least partial data were obtained on 1,031 (94.3%). The rationale behind saturation sampling has been shown in studies of volunteer vs. nonvolunteer subjects in psychological experimentation and between respondents and nonrespondents in survey research (Gannon et al. 1971, Moser 1958, Rosnow 1971). In general, these studies indicated that willing participants have different psychological characteristics than those who are reluctant to become involved in experiments or participate in surveys.

The overall data collection methodology emphasized candid information exchange and the involvement and cooperation of the scientist-engineers themselves. This was an articulate and intelligent group, and the insights provided by their perceptions of various aspects of their total work environment yielded particularly meaningful data.

Variables and Measurement Instruments

Table 1 gives the type and number of measures used in the total environment exploratory investigation. Measurement instruments and data collection devices were developed using a variety of scalar techniques. Wherever possible, the measurement instruments were based on work of prominent researchers and adapted for use in the U.S. Air Force R&D occupational settings under investigation. In all, 594 items of total environment and criterion data were gathered on each scientist-engineer. Performance data were obtained from R&D supervisory personnel, peers, the scientist-engineers themselves, and official organizational records.

Measurement-instrument structure, content, and scalar qualities were varied to reduce boredom and to tailor the assessment to the subject matter. The utility of different kinds of item structure and scale format for future research were also evaluated. The scaling formats used included forced choice, semantic differential, Likert, hybrid Likert and semantic differential, rating scales, rank-order assessments, and judgmental categorization.

TABLE 1. SUMMARY OF TOTAL ENVIRONMENT MEASURES

Area and Type of Measure	Measures	Items	Principal References ^a
<u>Personal or Psychological Characteristics</u>			
Life history experiences	8	85	Ellison et al. 1970; Taylor & Ellison 1964, 1967
Personality	8	76	Gordon 1963a, 1963b
Present life situation	1	7	Pelz & Andrews 1966
Motivation ^{c,d}	3	36 ^b	Porter & Lawler 1968
<u>Organizational Environment</u>			
Leader/Supervisor competence ^d	2	40	Fiedler 1967; Stogdill & Coons 1957
Organizational climate ^d	8	105	Ellison et al. 1968, Hemphill 1967; Kahn et al. 1964; Litwin & Stringer 1968; Pelz & Andrews 1966; Porter & Lawler 1968; Tagiuri & Litwin 1968
<u>Physical Environment</u>			
Quality of physical environment	1	54	Altman & Haythorn 1967; Barker 1968; Taylor et al. 1966, 1967; Sommer 1969; Wells 1967
Condition of primary and support equipment	2	86	
Control over physical environment	2	12	

Criteria

Performance	10	28	Ellison et al. 1968; James 1970; Ronan & Prien 1966; Taylor & Ellison 1967
Perceived satisfaction in work environment	6	63	Alderfer 1972; Hoppock 1935; Maslow 1970; Porter 1961, 1962, 1963a, 1963b, 1963c
Global job satisfaction	1	2	Porter & Lawler 1964; Porter & Mitchell 1967; Ronan 1970; Wolf 1970
TOTAL	52	594	

aMain references on which original measures were based. Complete reference citation can be found in Secrist 1975.

bMultiscale items.

cMotivation measures in original set of total environment variables are virtually identical to the organizational reward system measures in the refined set of organizational climate measures.
dDenotes the types of variables included in the secondary analyses as a basis for developing the refined set of organizational climate measures.

Note. This report concentrates on the subset of organizational and criterion variables annotated with the letter "d" in Table 1. A more detailed explanation of this subset of variables is furnished in Table 2, including the type of scaling, number of items, score derivation model, and potential raw-score range for each measure.

TABLE 2. PRIMARY FOCUS OF SECONDARY ANALYSES

Dimension/Specific Measure	Type Scaling ^a	Items	Score Deri- vation Model ^b	Potential Raw Score Range
<u>Organizational Climate</u>				
Leader/Supervisor task competence	Semantic differential	20	Additive	20-100
Leader/Supervisor personal relations competence	Semantic differential	20	Additive	20-100
Organizational vs. individual control	Likert	12	Additive	12-60
Participation	Likert	10	Additive	10-50
Organizational stress	Likert	32	Additive	32-160
Satisfaction with work group	Likert	15	Additive	15-75
Teamwork	Likert	14	Additive	14-70
Cohesiveness of work group	Likert	9	Additive	9-45
Personal closeness of work group	Likert	5	Additive	5-25
Homogeneity of work group	Likert	8	Additive	8-40
Organizational incentive reward system ^c	Hybrid (Likert & semantic differential)	36 ^d	Multiplicative summations	36-900

Criteria (Performance)

Scientist-Engineer overall effectiveness	Multiplicative combination of supervisor ratings and rank-order assessments	3	Multiplicative combinations	13-783
Official organizational-records assessment of overall effectiveness	Effectiveness ratings and promotion-potential categorization	2	Five-category classification	1-5
Self-assessment of overall effectiveness	Likert	1	Five-category classification	1-5

Criteria (Individual Satisfaction)

Need-satisfaction Composite	Hybrid (Likert & semantic differential)	63	Multiplicative summations	0-1680
Global job satisfaction	Likert	2	Multiplicative	1-25
	TOTAL	252		

^aAll scaling was accomplished on 5-part scales except the Scientist-Engineer overall effectiveness performance criterion which used multiplicative combinations of 9-part rating scales and forced-choice rank-order assessments. (Examples of all scales can be found in Secrist 1975.)

^bFormulas contained in Secrist 1975.

^cIdentified as Motivation on Table 1.

^dMultiscale items.

A subset of organizational variables (Table 2) was selected for intensive secondary analyses to serve as a foundation for the further development and refinement of an advanced set of organizational-climate measures. Several kinds of performance and individual-satisfaction variables were included to evaluate the validity of this refined set of measures.

Data Collection Procedures

The original data were collected from instruments assembled into individual, self-contained assessment packages. The principal investigator, who functioned in a "live-in" status with the R&D organizations under investigation, collected the data. Considerable effort was expended toward establishing rapport with key R&D management personnel and the scientist-engineers themselves. Special procedures were established to protect the anonymity of participating scientist-engineers and to exclude organizational management personnel from the data collection process.

In short, a single strategy unified the data collection procedure. The rationale was to combine the strengths of field research, total-spectrum variables (psychological, organizational, and environmental), multivariate assessment and analyses, and the participative involvement of nearly the entire research population to insure an appropriate methodological foundation.

Data Analyses and Evaluation

Primary analyses. Multivariate, computerized data analyses were used for the 52 variables listed in Table 1, for approximately 1,000 scientist-engineers. These variables involved total environment variables (personal-psychological, organizational, and physical environment) and performance and satisfaction.

Primary analysis included converting nearly 600,000 items of raw data to computer-tape format and EDP cards, preparing and debugging computer programs for the derivation of scores on the 52 individual measures, comprehensive descriptive and distributive analysis, item analysis with double cross-validation, correlational analysis, and multiple correlation/regression analysis (Secrist 1975).

Secondary analyses. The secondary analyses involved internal consistency and factor analyses to assess reliability and dimensional purity. They also involved additional linear and curvilinear correlational analyses to evaluate the predictive power of organizational-climate measures against a selected set of performance and individual-satisfaction criteria. A comparative evaluation was made to assess the relative efficiency of the refined set of organizational-climate measures versus the original set used in the exploratory investigation.

The results of both the primary and secondary analyses were used to reevaluate the original organizational-climate measures and develop a refined set. The original and refined measures were analyzed for internal consistency

using coefficient alpha (Cronback 1951), and for dimensional purity and orthogonality through minimum residual factor analysis with varimax rotation (Harmon 1967). A linear and curvilinear correlation analysis (Kirk 1968, Winer 1962) was also made to determine the nature of relationships between the refined set of organizational-climate measures and selected performance and satisfaction criteria.

RESULTS

The internal consistency reliability and factor structure of the 11 original and 8 refined organizational-climate measures are shown in Table 3. The coefficient alphas for the original measures ranged from .50 to .97 (mean = .83); for the refined measures, from .80 to .95 (mean = .89). Hence, the refined measures had a reduced range of reliabilities and increased mean reliability. Because of the substantial reduction in the number of items on which the refined measures were based, a slight reduction of reliability occurred at the high end of the range. However, this insignificant reduction is more than offset by greater efficiency and the reliability gained across all refined measures as a result of increased dimensional purity. This improved purity markedly raised both the low end of the range of reliabilities and the mean reliability.

Three of the original measures regarding the work group (cohesiveness, personal closeness, and homogeneity) were not selected for further refinement because of their multifactor structure and low reliability (lack of sufficient internal consistency). Five of the original dimension measures (leader task competence, leader personal-relations competence, organizational stress, satisfaction with the work group, and teamwork) were tailored into refined measures that were substantially shorter and virtually equal in reliability (internal consistency).

A number of items from two original measures (organizational vs. individual control, and participation) were combined into one refined organizational-control dimension with an internal consistency slightly higher than either of the two original measures. The original "organizational reward system" was split into two refined measures (intrinsic and extrinsic reward) using subsets of the original items. The intrinsic reward measure had an internal consistency about the same as the original measure, but the extrinsic reward measure requires further development to reach an acceptable level of reliability.

The refined set of organizational-climate measures was included in a factor analysis with the satisfaction criteria and psychological and environmental measures of the original total-environment exploratory investigation. This factor analysis was accomplished to verify that the refined organizational-climate measures were essentially independent of psychological characteristics (life history experiences and personality), job and need satisfaction, and the physical work environment.

The results of the factor analysis, conducted on a total of 35 measures, yielded seven meaningful factors (Table 4). No organizational-climate

TABLE 3. INTERNAL CONSISTENCY AND FACTOR STRUCTURE OF ORIGINAL AND REFINED ORGANIZATIONAL-CLIMATE MEASURES

Measure	Original Set				Refined Set			
	Sample Size	Items	Sub-factors ^a	Alpha ^b	Sample Size	Items	Sub-factors ^a	Alpha ^b
Leader task competence	701	20	1	.94	707	8	1	.93
Leader-personal relations competence	702	20	1	.97	705	8	1	.95
Organizational vs. individual control	921	12	2	.73	--919	11	3	.86
Participation	921	10	2	.83				
Organizational stress	915	32	2	.91	920	15	1	.91
Satisfaction with work group	924	15	1	.90	924	10	1	.90
Teamwork	919	14	2	.89	921	8	1	.90
Cohesiveness of work group	924	9	2	.80	c	c	c	c
Personal closeness of work group	923	5	1	.75	c	c	c	c
Homogeneity of work group	922	8	1	.50	c	c	c	c
Organizational reward system	914	36	3	.91	I 924 ^d E 923 ^e	9 9	1 2	.90 .80

^aSubfactors defined through factor analysis; selection determined by clusters of variables with factor loadings of .40 or greater.

^bCoefficient alpha determined by calculation of true alpha per Cronbach (1951).

^cRelationship not evaluated; measure not sufficiently promising to develop refined measure.

^dIntrinsic reward expectancy.

^eExtrinsic reward expectancy.

TABLE 4. FACTOR STRUCTURE OF ORIGINAL TOTAL ENVIRONMENT VARIABLES
AND REFINED ORGANIZATIONAL-CLIMATE MEASURES

Factor	Measures		Factor Loadings	
	Number	(Type)	Range	Mean
I. Life history experiences	7 Measures	(life history)	.69-.97	.84
II. Personality (drive and intensity)	3 Measures	(personality)	.43-.79	.66
III. Personality (emotional stability and mental health)	4 Measures	(personality)	.43-.61	.54
IV. Need satisfaction in the work environment	10 Measures	(6--need satisfaction 1--job satisfaction 3--organizational climate)	.42-.97	.62
V. Quality and control of physical work environment	4 Measures	(physical environment)	.47-.64	.56
VI. Organizational climate (quality)	5 Measures	(organizational climate)	.62-.74	.66
VII. Organizational climate (incentive and reward system)	2 Measures	(organizational climate)	.69-.73	.71

Note. Only measures with factor loadings above .40 were included in the factor clusters. The seven-factor solution accounted for 32 of the 35 measures. Three measures loaded on more than one factor (three organizational climate measures each loaded on factors IV and VI). Three measures failed to load on any of the seven factors (one life-history measure, one personality measure, and one organizational-climate measure).

measures were confounded with the psychological characteristics of the respondents nor with the properties of the physical environment. Rather, the organizational-climate measures clustered into two distinct general climate factors: one concerned with leader competence, stress, control, and satisfaction with the immediate work group; and a second concerned with the effectiveness of the organization's reward system. Three of the climate measures also loaded on the need-satisfaction factor (satisfaction with the work group, organizational stress, and organizational control). This is a very logical finding as a person's need satisfaction would be expected to be influenced by satisfaction with that individual's work group, the stringency of organizational control, and the amount of stress generated within the organization.

The relative correlative strength of the original and refined sets of organizational-climate measures is shown with the selected performance and satisfaction criteria in Table 5. The results of the correlation analysis revealed that the shorter, more reliable (refined) measures demonstrated stronger associations with most criteria. This analysis also showed that the linear relationship between climate measures and the various criterion variables accounted for most of the variance. Only on rare occasions did the curvilinear correlation coefficient add significantly to the linear correlation coefficient, and in nearly all cases the increased correlation strength was too small to be of practical significance. As a result, only the linear correlation coefficients are displayed in Table 5.

Based on the foregoing analyses, a final selection of items was made for each of the refined organizational-climate measures. (See the appendix.) Several considerations guided the item selection process: (a) the desire to reduce administration time (minimize the total number of items) without sacrificing reliability and validity, and (b) the need to enhance the content or information value of the items related to each measure.

The extent that the number of measures and items for the refined set of organizational-climate measures has been reduced as compared with the original set is evident from Table 6. Over 30% fewer dimensions and nearly 60% fewer items are contained in the refined measures. At the same time, both reliability and validity were enhanced as indicated in Tables 3 and 5. Table 6 portrays this comparison of original and refined climate measures within the framework of a new taxonomy of organizational-climate dimensions based on the senior author's total-spectrum model of human and organizational effectiveness (Secrist 1983). (For ease of reference, Table 7 presents the climate taxonomy and describes each of the eight major dimensions identified in Table 6.)

Table 6 also summarizes the development status of the climate measures from the perspective of the organizational-climate dimension taxonomy. As can be seen, the development progress has reached the advanced stage on measures representing four of the eight dimensions, while measures related to another dimension are at the intermediate level. Measures for the remaining three dimensions are at an early stage of exploratory development.

TABLE 5. STRENGTH OF LINEAR CORRELATIONS--ORIGINAL AND REFINED ORGANIZATIONAL-CLIMATE MEASURES WITH SELECTED PERFORMANCE AND SATISFACTION CRITERIA

Measure	PC-1 ^a	PC-2 ^b	PC-3 ^c	SC-1 ^d	SC-2 ^e
Leader task competence					
Original	ns	ns	ns	.32	.32
Refined	ns	ns	ns	.30	.30
Leader personal-relations competence					
Original	.14	.18	ns	.30	.29
Refined	.15	.18	ns	.33	.30
Organizational control					
Original	-.14	-.12	ns	-.40	-.36
Refined	-.23	-.22	-.17	-.57	-.53
Organizational stress					
Original	-.14	-.15	ns	-.51	-.47
Refined	-.21	-.21	-.15	-.58	-.55
Satisfaction with work group					
Original	.20	.21	.14	.60	.65
Refined	.17	.18	ns	.59	.66
Teamwork					
Original	ns	ns	ns	.38	.37
Refined	ns	ns	ns	.33	.34
Organizational incentive or reward system					
Original	.17	.16	.14	.50	.48
Refined intrinsic	.16	.16	.13	.51	.47
Refined extrinsic	.16	.15	ns	.47	.39

Note. Only organizational-climate dimensions on which both original and refined measures were developed are listed. Correlation values listed are significant beyond the .001 level (ns indicates not reaching that level).

^aPC-1--Multiplicative combination supervisor ratings and rank-order assessments of overall scientific-engineering effectiveness.

^bPC-2--Official-records reflection of overall performance and promotion potential.

^cPC-3--Self-assessment of overall scientific-engineering effectiveness.

^dSC-1--Need-satisfaction composite criterion.

^eSC-2--Global-job-satisfaction criterion.

TABLE 6. STATUS OF DEVELOPMENT OF ORGANIZATIONAL-CLIMATE MEASURES FROM PERSPECTIVE OF THE SECRIST TAXONOMY

Taxonomy Dimension	Efficiency of Measurement				Status of Development ^a
	Original Measures		Refined Measures		
	<u>Number</u>	<u>Items</u>	<u>Number</u>	<u>Items</u>	
I. Leader/Supervisor Competence	2	40	2	16	Advanced
II. Organizational vs. Individual Control	2	22	1	11	Advanced
III. Organizational Stress	1	32	1	15	Advanced
IV. Quality of Inter-personal Relations	5	51	2	18	Advanced
V. Standards and Goals	None	None	b	b	Exploratory
VI. Communications Effectiveness	None	None	b	b	Exploratory
VII. Organizational Incentive or Reward System	3	36 ^c	3	18 ^c	Intermediate
VIII. Physical Environment	5	152	b	b	Exploratory
Comparative Totals -- (Excludes dimension VIII)	13	181	9	78	

^aStatus of Development:

Advanced--Measures are near completion and have demonstrated high reliability and promising validity against meaningful criteria.

Intermediate--Measures are well into development but not yet complete.

Exploratory--Measures are at a formative state of development; incomplete and untested.

^bNot fully developed.

^cMultiscale items.

TABLE 7. SECRIST TAXONOMY OF ORGANIZATIONAL-CLIMATE DIMENSIONS

Dimension	Title	Description
I	Leader/Supervisor	Two major aspects of leader or supervisory competence: (a) task competence--level of knowledge and competence in performing the primary job/task functions of the work group. (b) personal-relations competence--the extent of interpersonal-relations knowledge and skill in providing a fair, supportive, and harmonious work environment.
II	Organization versus Individual Control	Extent to which behavior is controlled by the organization vis-a-vis the individual; related to degree of organizational control, structure, or stringency of policies, rules, and regulations vis-a-vis self-control, flexibility, independence, or autonomy.
III	Organizational Incentive or Reward System	Quantity and type of stress induced by the organization, including role conflict, role ambiguity, interpersonal friction, management pressure, and other sources of dysfunctional stress within the work environment.
IV	Quality of Interpersonal Relations	Quality and supportiveness of relations among peers, subordinates, superiors, work groups, interfacing subunits, and organizations; degree of work group (team) cohesiveness and solidarity.
V	Standards and Goals	Degree of challenge of job goals, objectives, and work assignments; level of difficulty and clarity of goals, standards, and job/task functions.
VI	Communications Effectiveness	Extent to which organizational and interpersonal communications are accurate, undistorted, unbiased, and complete; degree to which open, honest, easy two-way information exchange exists between organization members and the leadership or management.
VII	Organizational Incentive or Reward System	Quality, quantity, and equity of rewards or incentives; also, extent to which rewards are contingent on level of performance and contribution to the organization.

TABLE 7 (Continued).

Dimension	Title	Description
VIII	Physical Environment	Quality, adequacy, and supportiveness of the immediate physical work space and facilities. Extent to which the physical-architectural work space conforms to individual preferences and degree to which the individual is free to modify or adapt the immediate physical-architectural work space to suit personal characteristics and job requirements.

DISCUSSION

Our efforts have been to improve the precision of a set of organizational-climate measures grounded on a theoretical-conceptual model of human and organizational effectiveness and developed from a related taxonomy of organizational-climate dimensions. These measures are being shaped and refined toward a comprehensive, yet highly efficient and parsimonious, set of instruments that meet stringent standards of reliability, validity, generality, and utility.

An improved set of organizational-climate measures has been evaluated. This refined set of measures is more sharply focused, more efficient, and demonstrates greater reliability than an earlier, prototype, set of measures. Moreover, the refined set exhibits modest improvements in validity as measured by slightly higher correlations with selected performance and individual satisfaction criteria.

The results of the factor analysis and internal consistency analysis of the refined climate measures provide confidence that they have sufficient dimensional purity to warrant greater refinement. Further, the factor structure of the climate measures, when analyzed with other variables, indicates that the climate measures are largely distinct from measures of life history experiences, personality, and the characteristics of the physical work environment.

A particularly salient finding was that the reliability and validity of the refined set of organizational-climate measures were either improved or maintained while substantially greater efficiency was achieved. The efficiency was improved by the elimination of four measures and 103 items from the original set of measures.

Finally, the refined set of organizational-climate measures is more finely tuned to an advanced theoretical-conceptual model of human behavior in work organizations (Secrist 1983). This model and its related organizational-climate taxonomy comprise a useful framework for future organizational research and the development of a new generation of organizational assessment tools.

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APPENDIX

REFINED ORGANIZATIONAL-CLIMATE MEASURES: ITEMS AND SCALING

Leader/Supervisor Task Competence

1. Ineffective	ABCDE	Effective
2. Unproductive	ABCDE	Productive
3. Inefficient	ABCDE	Efficient
4. Unconvincing	ABCDE	Convincing
5. Follows	ABCDE	Leads
6. Hesitant	ABCDE	Confident
7. Unimaginative	ABCDE	Imaginative
8. Indecisive	ABCDE	Decisive

Leader/Supervisor Personal-Relations Competence

1. Uncooperative	ABCDE	Cooperative
2. Hostile	ABCDE	Supportive
3. Discourages	ABCDE	Encourages
4. Antagonizes	ABCDE	Helps
5. Unfair	ABCDE	Fair
6. Inconsiderate	ABCDE	Considerate

7. Unappreciative	A B C D E	Appreciative
8. Rejecting	A B C D E	Accepting

Two types of scales, as appropriate, were used for the next six organizational climate measures

Type 1 Likert scale

Definitely False	Mostly False	Don't Know	Mostly True	Definitely True

Type 2 Likert scale

Never	Rarely	Don't Know	Often	Always

Organizational vs. Individual Control

1. Provided with the opportunity to participate in job-related decisions
2. Suggestions and recommendations are considered fairly
3. Made to feel an essential part of the work group
4. Given the opportunity to participate in the formulation of policy
5. Management is receptive to suggestions
6. Seldom able to use my judgment in performance of work
7. Ideas may be expressed freely
8. Allowed to modify work hours to meet changing requirements
9. Provided with freedom to establish my work schedule
10. Procedures and regulations are overly restrictive
11. Work is closely supervised

Organizational Stress

1. This organization's way of using resources (men, money, or material) is frustrating
2. Confusion exists in the planning and organization of work projects
3. Conflict between work objectives is typical
4. This organization generates a lot of pressure
5. Unclear of the scope and responsibilities of my job
6. Not sure of what is expected of me
7. Excessive attention is given to unimportant details
8. Too little authority to carry out my responsibilities
9. Unable to satisfy the conflicting demands of management
10. Can't get the information needed to perform effectively
11. Expected to do things which conflict with the basic principles I believe in
12. Required to do things that are against my better judgment
13. Progress on the job is not what it should be
14. Considerable pressure to look busy
15. Unable to influence actions that affect me

Satisfaction with Work Group

1. This work group does its job with no great pleasure
2. Working in this group is enjoyable
3. Most of my fellow workers would like to be transferred
4. My fellow workers complain about the work they do
5. My dissatisfaction with my work group is too small to mention
6. Management is concerned about the working environment
7. A feeling of failure prevails in this work group

8. This work group takes care of its people
9. Individuals in this work group are seldom recognized for their efforts
10. This work group has high status in the organization

Teamwork

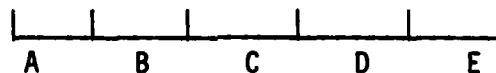
1. Certain individuals in this work group are responsible for petty quarrels and bad feelings
2. Tensions among some individuals interfere with work group effectiveness
3. Some individuals are hostile to others in the work group
4. Some individuals are unable to work as part of a team
5. Certain members of the work group are uncooperative
6. Members of this work group get along well together
7. This work group is a highly coordinated team
8. This work group takes care of its members

Organizational Incentive or Reward System

The final organizational climate measures concerned aspects of the organizational reward system. These measures utilized two types of scales to assess each item.

Expectancy Scale

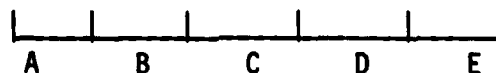
Definitely
False



Definitely
True

Importance Scale

Definitely
Dislike



Definitely
Like

Intrinsic Incentive or Reward System (Intrinsic consequences of effective performance)

1. More challenging assignments
2. Greater responsibilities
3. Increased opportunity to advance to more important work
4. More interesting work assignments
5. Greater involvement in important decisions
6. Faster promotion
7. More difficult work assignments
8. Greater volume of work
9. More freedom in deciding how to accomplish work

Extrinsic Incentive or Reward System (Extrinsic consequences of effective performance)

1. Greater influence with superiors
2. Supervisors impressed with my work
3. Better performance ratings
4. Compliments, recognition, and praise
5. Faster promotion
6. Considered competent
7. Higher pay
8. Increased job security
9. Supervisors check on my work less often

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