

Office of Research and Evaluation
Federal Bureau of Prisons

Prison Social Climate Survey
Reliability and Validity Analyses of the Work Environment Constructs

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Prison Social Climate Survey
Reliability and Validity Analyses of the Work Environment Constructs
conducted by the Office of Research and Evaluation

Within the work environment section of the Prison Social Climate Survey there are 49 seven-point Likert scale items which are used to measure eight organizational constructs, or latent measures: institutional/organizational operations, quality of supervision, commitment to the Bureau, commitment to the institution, job satisfaction, support for and effectiveness of training, sense of efficacy in working with inmates, and job stress. The items that compose each of the constructs are listed in Appendix A.

The initial work to determine the suitability of the Likert-scale questionnaire items as indicators of the eight constructs was accomplished through statistical analyses, using the 1988 questionnaire data. An exploratory factor analysis of the items on one-half of the sample of the staff data was consistent with the theoretical structure employed during the development of the questionnaire. The reliability of this structural pattern was assessed by performing the same analyses on the second half of the sample. Although the size of the coefficients varied slightly, the same pattern of factor loadings was observed, such that the items on the second half loaded highest on the same factors as for the first half of the sample. Eigenvalues and percentages of the variance explained were similar in the two sets of analyses.

Similar analyses have been performed for 1989 through 1995 data to provide for an initial assessment of the internal reliability and consistency of the measurement model that was developed with the 1988 data. While the size of the coefficients, by factor, varied slightly across the years, the same pattern of factor loadings was observed for all years.

Recently, confirmatory factor analyses were conducted for the years between 1989 and 1995. These analyses provide a more rigorous assessment of the internal reliability and validity of the measurement model. The results in Appendixes B and C demonstrate an acceptable level of reliability for the work environment constructs and validate the theorized relationships among the PSCS Likert-scale items and the summative scales which they create for use in organizational performance monitoring and substantive analysis.

Results of the Reliability Analysis

Appendix B provides the Cronbach's alpha for each of the eight work environment constructs for the 1995 data. Cronbach's Alpha was chosen to estimate the reliability of the latent measures because the analysis involves measures for only one time period.

Cronbach's alpha does not assume that the observed measures are parallel, that is, that the observed variances are equal.

The Cronbach's alpha for each of the eight work environment constructs demonstrates an acceptable level of reliability. The survey respondents were very consistent in the way they answered the items that compose each of the latent variables.

Results of the Validity Analysis

Estimates of a constrained factor model derived from polychoric correlations confirmed the factor structure of the eight work environment constructs. The results of these analyses, which were performed for each year from 1989 to 1995, are shown in Appendix C. The first path diagram in Appendix C displays the model parameter estimates. The observed measures appear in the boxes and the latent variables appear in the ovals. The figures that are positioned between the observed and latent measures are the factor loadings. The figures that are to the left of the observed measures are the measurement errors. The figures to the right of the latent measures are the correlations among the latent measures. (These correlations are also presented in the Phi matrix that follows the squared multiple correlations in Appendix C.) The second path diagram in Appendix C displays the T-values of the model estimates and shows that the parameter estimates are large compared to their standard errors. Comparison of the estimates and their T-Values across the seven years shows that the estimates are consistent over all seven annual administrations of the questionnaire. The squared multiple correlations demonstrate that the variance shared by the observed measures and the latent measures is substantial and comparison among the seven models similarly displays consistency across the seven years.

The goodness of fit index and adjusted goodness of fit index (GFI and AGFI) for each constrained factor model, along with the other measures of goodness of fit, and the small root mean square error of approximation (RMSEA), indicate that there is an adequate level of fit to these measurement models. (For a discussion of these measures of fit see Joreskog and Sorbom, 1993, or Bollen, 1989.).

Use of the Scales for Analytic and Reporting Purposes

For reporting and analytic purposes, staff responses to the items are expressed as unweighted summative scales. That is, the questionnaire items are summed, divided by the total number of items in each dimension, and rounded to an integer, thus expressing the scales in the metric of the questionnaire items.

Appendix A
Federal Bureau of Prisons
PRISON SOCIAL CLIMATE SURVEY
Work Environment Scales

I. Institutional/Organizational Operations: This is a scale that is composed of the following 10 individual items in the work environment section of the survey.

- | | | |
|----------|-----|---|
| COMUNEFF | 1. | The information I get through formal communication channels helps me to perform my job effectively. FWE-1 |
| _UNCLEAR | 2. | In the BOP, it is often unclear who has the formal authority to make a decision. FWE-2 |
| _NOCHNGE | 3. | It's really not possible to change things in this institution. FWE-3 |
| TOLDQICK | 4. | I am told promptly when there is a change in policy, rules, or regulations that affects me. FWE-4 |
| AUTHORTY | 5. | I have the authority I need to accomplish my work objectives. FWE-5 |
| _NOINFLU | 6. | Employees do not have much opportunity to influence what goes on in the BOP. FWE-6 |
| _PROMBUM | 7. | Under the present system, promotions are seldom related to employee performance. FWE-7 |
| BOSSFLEX | 8. | Management at this institution is flexible enough to make changes when necessary. FWE_8 |
| DELEGATD | 9. | In the BOP, authority is clearly delegated. FWE-9 |
| INRUN | 10. | In general, this institution is run very well. FWE-27 |

Each question on this scale is a 7 point Likert Scale ranging from "strongly disagree" to "strongly agree". (NOTE: The negatively oriented items (#2, 3, 6, and 7) are reversed before the scale is computed).

II. Quality of Supervision: This is a scale that is composed of the following 10 individual items in the work environment section of the survey.

- | | | |
|----------|-----|---|
| BOSSHLP | 1. | My supervisor engages me in the planning process, such as developing work methods and procedures for my job. FWE-11 |
| BOSSTELL | 2. | My supervisor gives me adequate information on how well I am performing. FWE-12 |
| BOSSASKS | 3. | My supervisor asks my opinion when a work-related problem arises. FWE-13 |
| ITALK | 4. | I have a great deal of say over what has to be done on my job. FWE-14 |
| IKNOW | 5. | On my job, I know what my supervisor expects of me. FWE-15 |
| FAIRSTAN | 6. | The standards used to evaluate my performance have been fair and objective. FWE-16 |
| _LATEVAL | 7. | The information I receive about my performance usually comes too late for it to be of any use to me. FWE-17 |
| FAIREVAL | 8. | My last annual performance rating presented a fair and accurate picture of my actual job performance. FWE-18 |
| HARDWORK | 9. | My own hard work will lead to recognition as a good performer. FWE-19 |
| BACKPATS | 10. | I often receive feedback from my supervisor for good performance. FWE-21 |

Each question on this scale is a 7 point Likert Scale ranging from "strongly disagree" to "strongly agree".

(NOTE: The negatively oriented item, #7, is reversed before the scale is computed).

III. Commitment to the Bureau: This is a scale that is composed of the following 5 individual items in the work environment section of the survey.

- BOPGOOD 1. I have a good opinion of the BOP most of the time. FWE-22
- BOPRUN 2. Most of the time the BOP is run very well. FWE-23
- BOPSAT 3. I am usually satisfied with the BOP. FWE-24
- BOPBETER 4. The BOP is better than any of the other correctional agencies (e.g., State). FWE-25
- BOPONLY 5. If I remain in corrections, I would prefer to remain the BOP. FWE-26

Each question on this scale is a 7 point Likert Scale ranging from "strongly disagree" to "strongly agree".

IV. Commitment to the Institution: This is a scale that is composed of the following 3 individual items in the work environment section of the survey.

- INBETTER 1. This facility is the best in whole BOP. FWE-28
- INONLY 2. I would rather be stationed at this facility than any other I know about. FWE-30
- INWORK 3. I would like to continue to work at this facility. FWE-31

Each question on this scale is a 7 point Likert Scale ranging from "strongly disagree" to "strongly agree".

items in the work environment section of the survey.

- _TRANBMR 1. The BOP training program does not prepare me or help me deal with situations that arise on the job. FWE-53
- TRANIMPR 2. Training at this facility has improved my job skills. FWE-50
- TRANEFF 3. My BOP training has helped me to work effectively with inmates. FWE-52

Each question on this scale is a 7 point Likert Scale ranging from "strongly disagree" to "strongly agree". (NOTE: The negatively oriented item (#1) is reversed before the scale is computed).

VIII. Effectiveness in dealing with inmates: This is a scale that is composed of the following 4 individual items in the work environment section of the survey.

- GOODEAL 1. An ability to deal very effectively with the problems of inmates. FWE-54
- POSINFL 2. A feeling that you are positively influencing other people's lives through your work. FWE-55
- FEELEXHL 3. A feeling of accomplishment after working closely with inmates. FWE-58
- EZEASE 4. A feeling that you can easily create a relaxed atmosphere with inmates. FWE-60

Each question on this scale is a 7 point Likert Scale ranging from "never" to "all the time".

V. Job Satisfaction: This is a scale that is composed of the following 6 individual items in the work environment section of the survey.

- _GREENER 1. I would be more satisfied with some other job at this facility than I am with my present job. FWE-32
- JOBINT 2. My BOP job is usually interesting to me. FWE-33
- JOBSUIT 3. My BOP job suits me very well. FWE-34
- JOBWORTH 4. My BOP job is usually worthwhile. FWE-35
- _JOBCHNG 5. If I have a chance, I will change to some other job at the same rate of pay at this facility. FWE-36
- _JOBLOOK 6. I am currently looking for or considering another job outside the BOP. FWE-37

Each question on this scale is a 7 point Likert Scale ranging from "strongly disagree" to "strongly agree". (NOTE: The negatively oriented items (#1, 5, and 6) are reversed before the scale is computed).

VI. Support of Training: This is a scale that is composed of the following 2 individual items in the work environment section of the survey.

- TRANSUPR 1. I receive the kind of training that I need to perform my job well. FWE-49
- TRANSUPP 2. The facility's executive staff support the training program. FWE-51

Each question on this scale is a 7 point Likert Scale ranging from "strongly disagree" to "strongly agree".

VII. Effectiveness of Training: This is a scale that is composed of the following 3 individual

IX. Job Stress: This is a scale that is composed of the following 6 individual items in the work environment section of the survey.

- _GROWHRD 1. A feeling that you have become harsh toward people since you took this job. FWE-56
- _GROWORY 2. A feeling of worry that this job is hardening you emotionally. FWE-57
- _DRAINED 3. A feeling of being emotionally drained at the end of the workday. FWE-61
- _TREATIT 4. A feeling that you treat some inmates as if they were impersonal objects. FWE-62
- _WRKSTRN 5. A feeling that working with people all day is really a strain for you. FWE-63
- _FATIGED 6. A feeling of being fatigued when you get up in the morning and have to face another day on the job. FWE-64

Each question on this scale is a 7 point Likert Scale ranging from "never" to "all the time". (NOTE: All items in this scale are negatively oriented and are reversed before the scale is computed).

Appendix B
Results of the Reliability Analysis
1995 Prison Social Climate Survey
Work Environment Scales

<u>Scale</u>	<u>Number of Items</u>	<u>Cronbach's Alpha</u>
Institutional/Organizational Operations	10	.8700
Quality of Supervision	10	.9223
Commitment to the Bureau	5	.8972
Commitment to the Institution	3	.8312
Job Satisfaction	6	.8175
Training	5	.8468
Efficacy in Working with Inmates	4	.7727
Job Stress	6	.8582

References

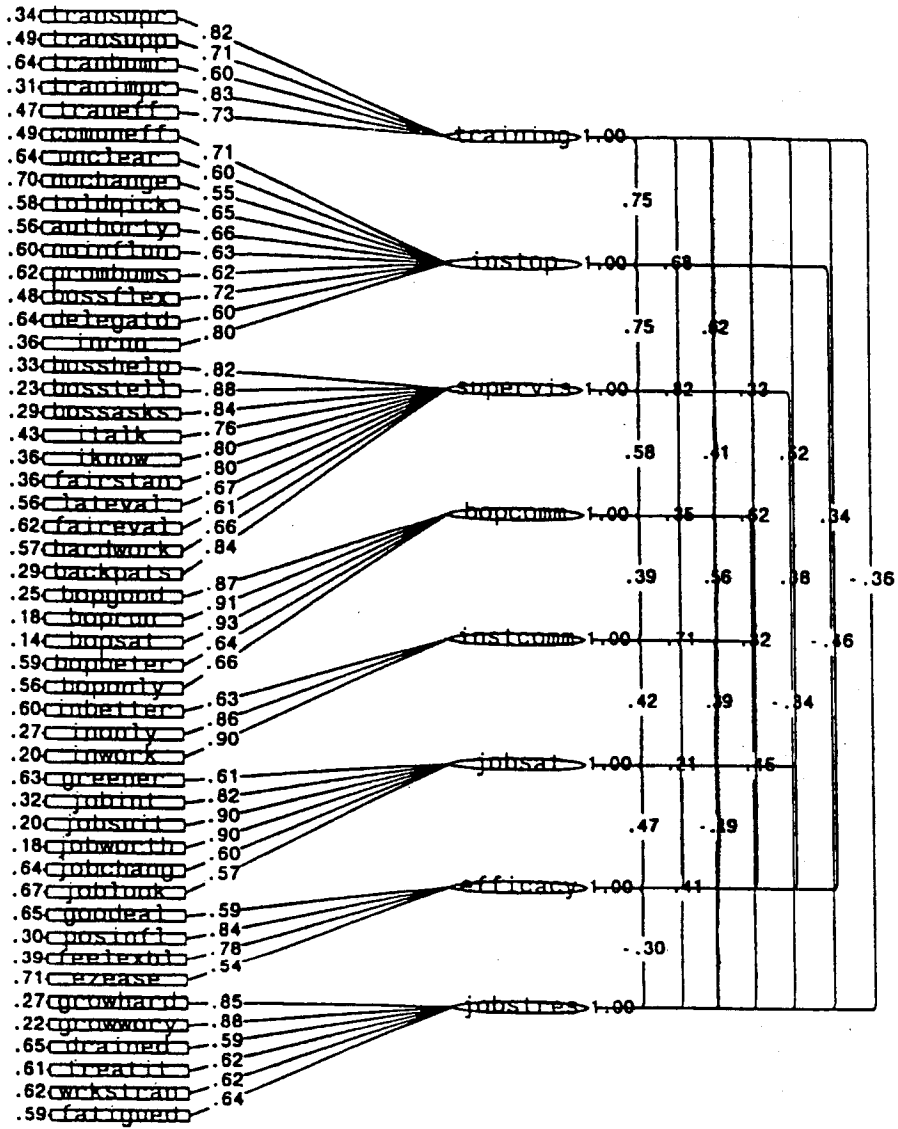
- Bollen, K. (1989) *Structural Equations with Latent Variables*. New York: John Wiley & Sons.
- Joreskog, K. & Sorbom, D. (1993) *Lisrel8: Structural Equation Modeling with the SIMPLIS Command Language*. Hillsdale, N.J.: Lawrence Erlbaum Associates Publishers.

Appendix C
Results of the Constrained Factor Model
of
Estimates Derived from Polychoric Correlations

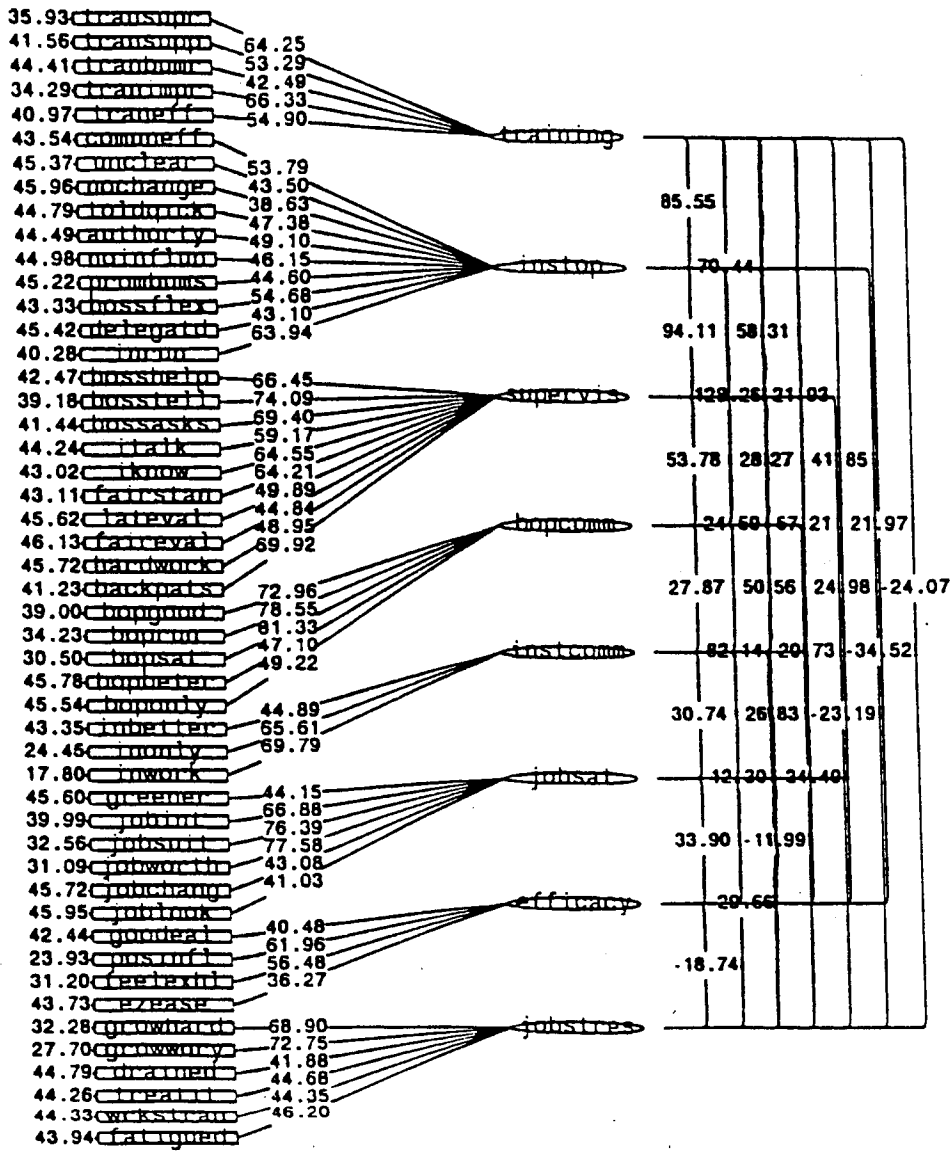
For each year, the following tables are provided.

Estimates
T-Values for Estimates
Squared Multiple Correlations
Phi Matrix
Goodness of Fit Statistics

Office of Research and Evaluation



Estimates of 1989
 Prison Social Climate Survey
 Work Environment Measurement Models
 Estimated by Constrained Factor Analysis of Polychoric Correlations.



T-values For Estimates of 1989
 Prison Social Climate Survey
 Work Environment Measurement
 Models Estimated by Constrained
 Factor Analysis of Polychoric Correlations.

GOODNESS OF FIT STATISTICS

CHI-SQUARE WITH 1099 DEGREES OF FREEDOM = 23238.00 (P = 0.0)

ESTIMATED NON-CENTRALITY PARAMETER (NCP) = 22139.00

MINIMUM FIT FUNCTION VALUE = 5.11

POPULATION DISCREPANCY FUNCTION VALUE (FO) = 4.87

ROOT MEAN SQUARE ERROR OF APPROXIMATION (RMSEA) = 0.067

P-VALUE FOR TEST OF CLOSE FIT (RMSEA < 0.05) = 1.00

EXPECTED CROSS-VALIDATION INDEX (ECVI) = 5.17

ECVI FOR SATURATED MODEL = 0.54

ECVI FOR INDEPENDENCE MODEL = 32.46

CHI-SQUARE FOR INDEPENDENCE MODEL WITH 1176 DEGREES OF FREEDOM = 147430.04

INDEPENDENCE AIC = 147528.04

MODEL AIC = 23490.00

SATURATED AIC = 2450.00

INDEPENDENCE CAIC = 147891.72

MODEL CAIC = 24425.17

SATURATED CAIC = 11541.95

ROOT MEAN SQUARE RESIDUAL (RMR) = 0.064

STANDARDIZED RMR = 0.064

GOODNESS OF FIT INDEX (GFI) = 0.81

ADJUSTED GOODNESS OF FIT INDEX (AGFI) = 0.79

PARSIMONY GOODNESS OF FIT INDEX (PGFI) = 0.73

NORMED FIT INDEX (NFI) = 0.84

NON-NORMED FIT INDEX (NNFI) = 0.84

PARSIMONY NORMED FIT INDEX (PNFI) = 0.79

COMPARATIVE FIT INDEX (CFI) = 0.85

INCREMENTAL FIT INDEX (IFI) = 0.85

RELATIVE FIT INDEX (RFI) = 0.83

CRITICAL N (CN) = 237.85

1989 Prison Social Climate Survey

Work Environment Scales

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

transupr	transupp	tranbumr	tranimpr	traneff	comuneff
0.66	0.51	0.36	0.69	0.53	0.51

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

unclear	nochange	toldqick	authority	noinflun	prombums
0.36	0.30	0.42	0.44	0.40	0.38

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

bossflex	delegatd	inrun	bosshep	bosstell	bossasks
0.52	0.36	0.64	0.67	0.77	0.71

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

italk	iknow	fairstan	lateval	faireval	hardwork
0.57	0.64	0.64	0.44	0.38	0.43

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

backpats	bopgood	boprun	bopsat	bopbeter	boponly
0.71	0.75	0.82	0.86	0.41	0.44

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

inbeter	inonly	inwork	greener	jobint	jobsuit
0.40	0.73	0.80	0.37	0.68	0.80

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

jobworth	jobchang	joblook	goodeal	posinfl	feelexhl
0.82	0.36	0.33	0.35	0.70	0.61

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

ezease	growhard	growwory	drained	treatit	wrkstran
0.29	0.73	0.78	0.35	0.39	0.38

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

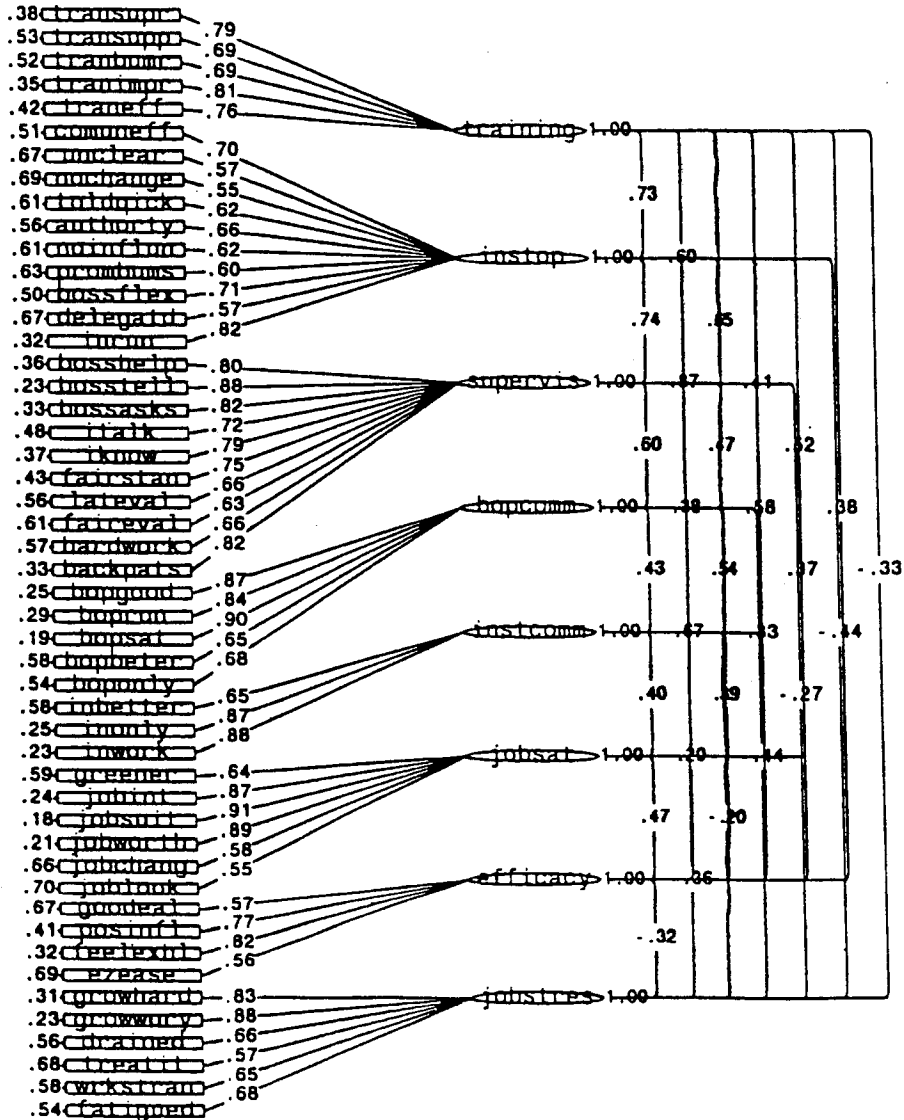
fatigued
0.41

PHI

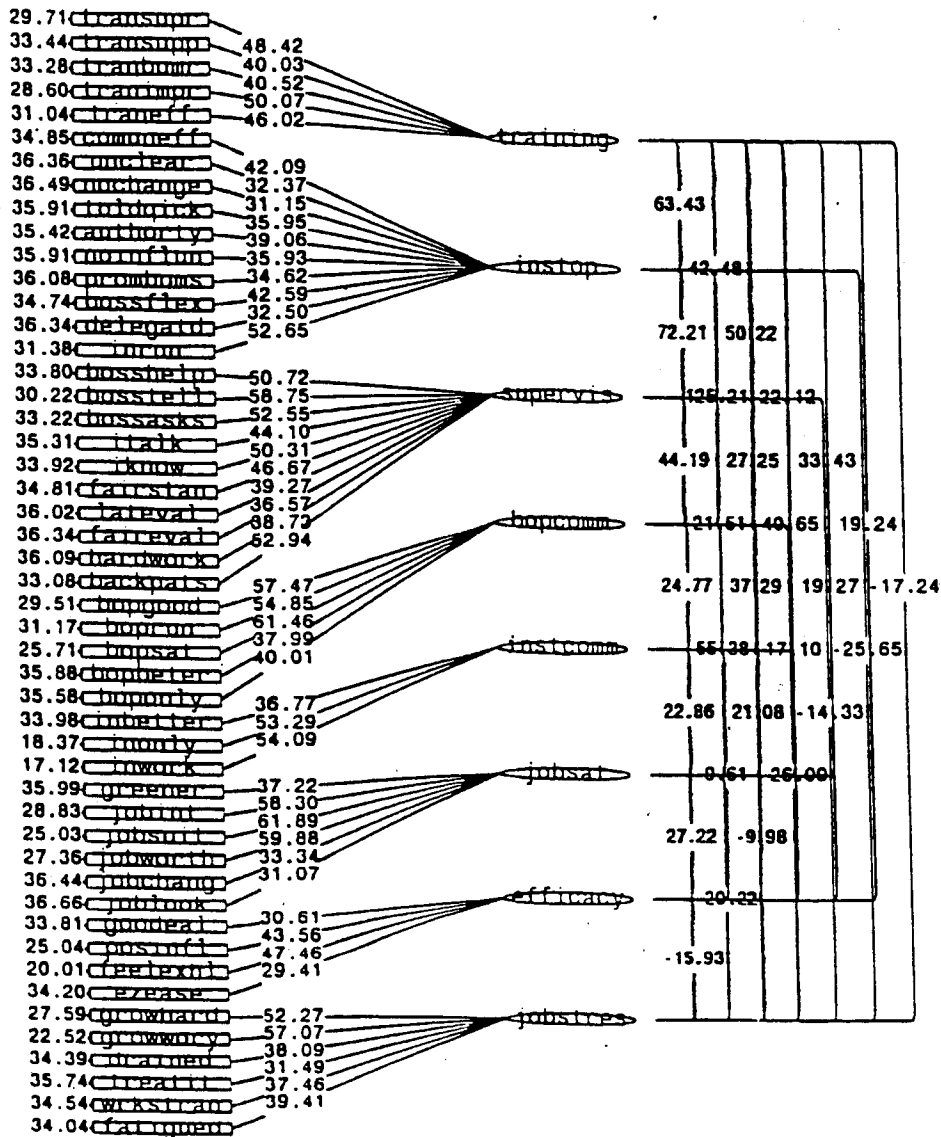
	training	instop	supervis	bopcomm	instcomm	jobsat
	-----	-----	-----	-----	-----	-----
training	1.00					
instop	0.75 (0.01) 85.55	1.00				
supervis	0.68 (0.01) 70.44	0.75 (0.01) 94.11	1.00			
bopcomm	0.62 (0.01) 58.31	0.82 (0.01) 128.26	0.58 (0.01) 53.78	1.00		
instcomm	0.33 (0.02) 21.93	0.41 (0.01) 28.27	0.35 (0.01) 24.59	0.39 (0.01) 27.87	1.00	
jobsat	0.52 (0.01) 41.85	0.62 (0.01) 57.21	0.56 (0.01) 50.56	0.71 (0.01) 82.14	0.42 (0.01) 30.74	1.00
efficacy	0.34 (0.02) 21.97	0.38 (0.02) 24.98	0.32 (0.02) 20.73	0.39 (0.01) 26.83	0.21 (0.02) 12.30	0.47 (0.01) 33.90
jobstres	-0.36 (0.01) -24.07	-0.46 (0.01) -34.52	-0.34 (0.01) -23.19	-0.45 (0.01) -34.49	-0.19 (0.02) -11.99	-0.41 (0.01) -29.66

PHI

	efficacy	jobstres
	-----	-----
efficacy	1.00	
jobstres	-0.30 (0.02) -18.74	1.00



Estimates of 1990
 Prison Social Climate Survey
 Work Environment Measurement Models
 Estimated by Constrained Factor Analysis of Polychoric Correlations.



T-values For Estimates of 1990
 Prison Social Climate Survey
 Work Environment Measurement
 Models Estimated by Constrained
 Factor Analysis of Polychoric Correlations.

GOODNESS OF FIT STATISTICS

CHI-SQUARE WITH 1099 DEGREES OF FREEDOM = 15279.56 (P = 0.0)

ESTIMATED NON-CENTRALITY PARAMETER (NCP) = 14180.56

MINIMUM FIT FUNCTION VALUE = 5.34

POPULATION DISCREPANCY FUNCTION VALUE (FO) = 4.96

ROOT MEAN SQUARE ERROR OF APPROXIMATION (RMSEA) = 0.067

P-VALUE FOR TEST OF CLOSE FIT (RMSEA < 0.05) = 1.00

EXPECTED CROSS-VALIDATION INDEX (ECVI) = 5.43

ECVI FOR SATURATED MODEL = 0.86

ECVI FOR INDEPENDENCE MODEL = 31.76

CHI-SQUARE FOR INDEPENDENCE MODEL WITH 1176 DEGREES OF FREEDOM = 90753.78

INDEPENDENCE AIC = 90851.78

MODEL AIC = 15531.56

SATURATED AIC = 2450.00

INDEPENDENCE CAIC = 91192.78

MODEL CAIC = 16408.42

SATURATED CAIC = 10975.11

ROOT MEAN SQUARE RESIDUAL (RMR) = 0.064

STANDARDIZED RMR = 0.064

GOODNESS OF FIT INDEX (GFI) = 0.81

ADJUSTED GOODNESS OF FIT INDEX (AGFI) = 0.79

PARSIMONY GOODNESS OF FIT INDEX (PGFI) = 0.73

NORMED FIT INDEX (NFI) = 0.83

NON-NORMED FIT INDEX (NNFI) = 0.83

PARSIMONY NORMED FIT INDEX (PNFI) = 0.78

COMPARATIVE FIT INDEX (CFI) = 0.84

INCREMENTAL FIT INDEX (IFI) = 0.84

RELATIVE FIT INDEX (RFI) = 0.82

CRITICAL N (CN) = 227.75

1990 Prison Social Climate Survey

Work Environment Scales

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

transupr	transupp	tranbumr	tranimpr	traneff	comuneff
0.62	0.47	0.48	0.65	0.58	0.49

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

unclear	nochange	toldqick	authority	noinflun	prombums
0.33	0.31	0.39	0.44	0.39	0.37

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

bossflex	delegatd	inrun	bosshelp	bosstell	bossasks
0.50	0.33	0.68	0.64	0.77	0.67

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

italk	iknow	fairstan	lateval	faireval	hardwork
0.52	0.63	0.57	0.44	0.39	0.43

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

backpats	bopgood	boprun	bopsat	bopbeter	boonly
0.67	0.75	0.71	0.81	0.42	0.46

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

inbetter	inonly	inwork	greener	jobint	jobsuit
0.42	0.75	0.77	0.41	0.76	0.82

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

jobworth	jobchang	joblook	goodeal	posinfl	feelexhl
0.79	0.34	0.30	0.33	0.59	0.68

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

ezease	growhard	growwory	drained	treatit	wrkstran
0.31	0.69	0.77	0.44	0.32	0.42

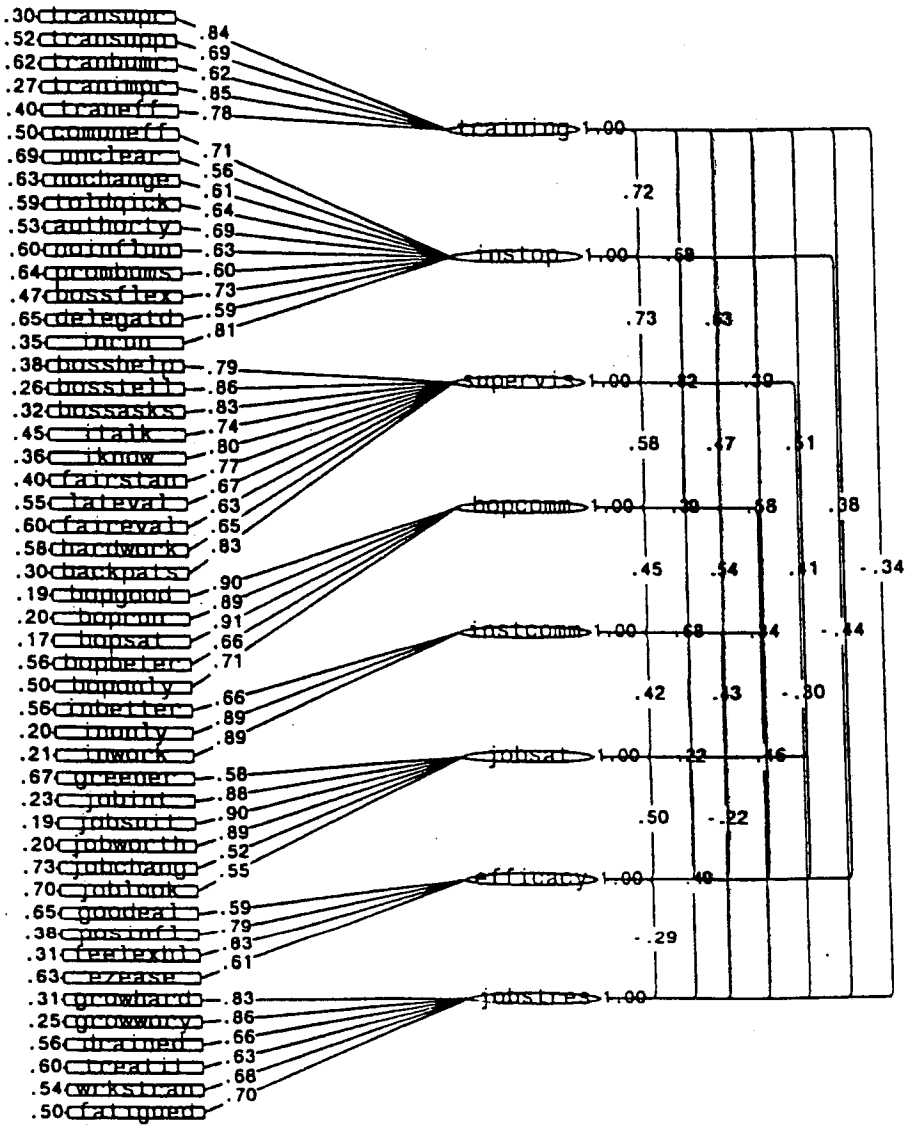
SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

fatigued
0.46

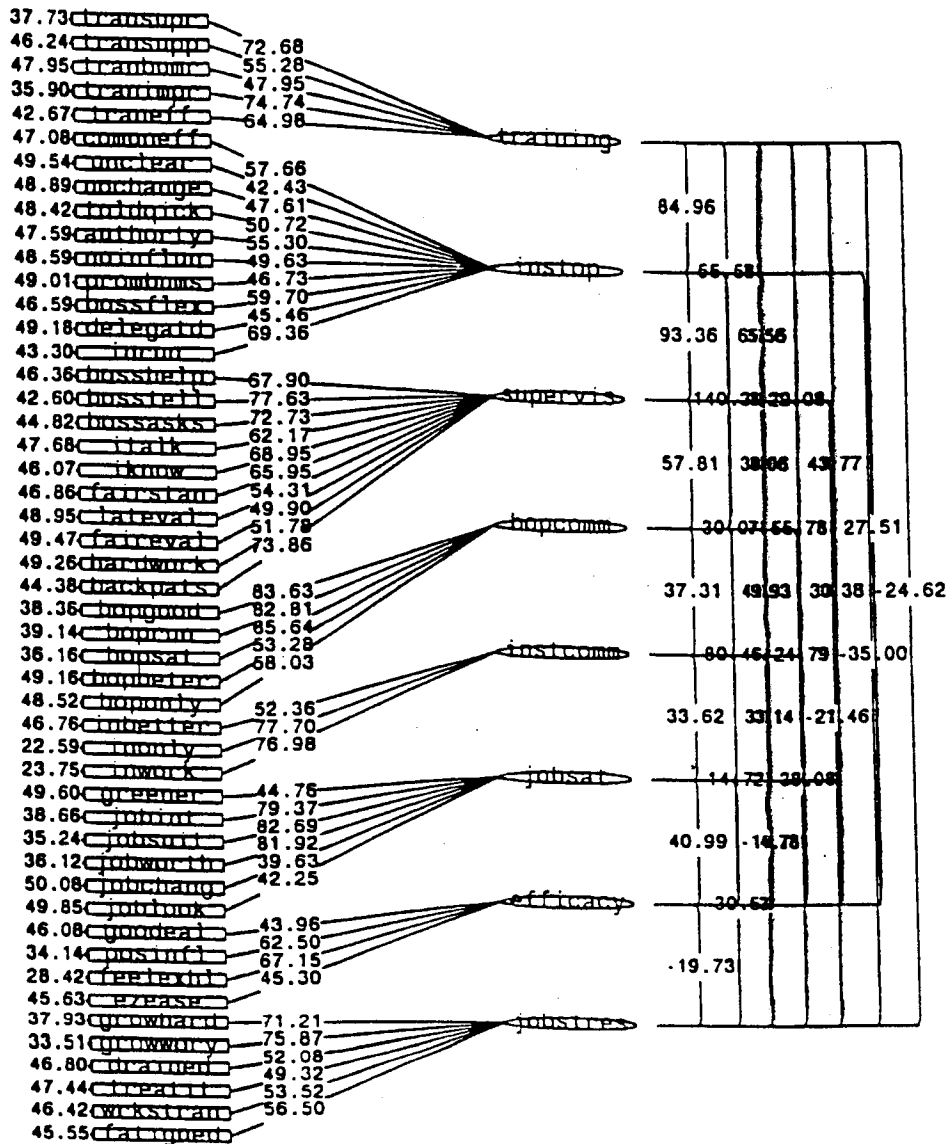
PHI						
	training	instop	supervis	bopcomm	instcomm	jobsat
	-----	-----	-----	-----	-----	-----
training	1.00					
instop	0.73 (0.01) 63.43	1.00				
supervis	0.60 (0.01) 42.48	0.74 (0.01) 72.21	1.00			
bopcomm	0.65 (0.01) 50.22	0.87 (0.01) 125.21	0.60 (0.01) 44.19	1.00		
instcomm	0.41 (0.02) 22.12	0.47 (0.02) 27.25	0.38 (0.02) 21.51	0.43 (0.02) 24.77	1.00	
jobsat	0.52 (0.02) 33.43	0.58 (0.01) 40.65	0.54 (0.01) 37.29	0.67 (0.01) 55.38	0.40 (0.02) 22.86	1.00
efficacy	0.38 (0.02) 19.24	0.37 (0.02) 19.27	0.33 (0.02) 17.10	0.39 (0.02) 21.08	0.20 (0.02) 9.61	0.47 (0.02) 27.22
jobstres	-0.33 (0.02) -17.24	-0.44 (0.02) -25.65	-0.27 (0.02) -14.33	-0.44 (0.02) -26.09	-0.20 (0.02) -9.98	-0.36 (0.02) -20.22

PHI	
	efficacy jobstres

efficacy	1.00
jobstres	-0.32 (0.02) -15.93



Estimates of 1991
 Prison Social Climate Survey
 Work Environment Measurement Models
 Estimated by Constrained Factor Analysis of Polychoric Correlations.



T-values For Estimates of 1991
 Prison Social Climate Survey
 Work Environment Measurement
 Models Estimated by Constrained
 Factor Analysis of Polychoric Correlations.

GOODNESS OF FIT STATISTICS

CHI-SQUARE WITH 1099 DEGREES OF FREEDOM = 25097.16 (P = 0.0)

ESTIMATED NON-CENTRALITY PARAMETER (NCP) = 23998.16

MINIMUM FIT FUNCTION VALUE = 4.73

POPULATION DISCREPANCY FUNCTION VALUE (FO) = 4.53

ROOT MEAN SQUARE ERROR OF APPROXIMATION (RMSEA) = 0.064

P-VALUE FOR TEST OF CLOSE FIT (RMSEA < 0.05) = 1.00

EXPECTED CROSS-VALIDATION INDEX (ECVI) = 4.78

ECVI FOR SATURATED MODEL = 0.46

ECVI FOR INDEPENDENCE MODEL = 32.41

CHI-SQUARE FOR INDEPENDENCE MODEL WITH 1176 DEGREES OF FREEDOM = 171773.44

INDEPENDENCE AIC = 171871.44

MODEL AIC = 25349.16

SATURATED AIC = 2450.00

INDEPENDENCE CAIC = 172242.68

MODEL CAIC = 26303.77

SATURATED CAIC = 11730.87

ROOT MEAN SQUARE RESIDUAL (RMR) = 0.060

STANDARDIZED RMR = 0.060

GOODNESS OF FIT INDEX (GFI) = 0.83

ADJUSTED GOODNESS OF FIT INDEX (AGFI) = 0.81

PARSIMONY GOODNESS OF FIT INDEX (PGFI) = 0.74

NORMED FIT INDEX (NFI) = 0.85

NON-NORMED FIT INDEX (NNFI) = 0.85

PARSIMONY NORMED FIT INDEX (PNFI) = 0.80

COMPARATIVE FIT INDEX (CFI) = 0.86

INCREMENTAL FIT INDEX (IFI) = 0.86

RELATIVE FIT INDEX (RFI) = 0.84

CRITICAL N (CN) = 256.88

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1991 Prison Social Climate Survey

Work Environment Scales

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

transupr	transupp	tranbumr	tranimpr	traneff	comuneff
.....
0.70	0.48	0.38	0.73	0.60	0.50

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

unclear	nochange	toldqick	authorhy	noinflun	prombums
.....
0.31	0.37	0.41	0.47	0.40	0.36

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

bossflex	delegatd	inrun	bosshelp	bosstell	bossasks
.....
0.53	0.35	0.65	0.62	0.74	0.68

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

italk	iknow	fairstan	lateval	faireval	hardwork
.....
0.55	0.64	0.60	0.45	0.40	0.42

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

backpats	bopgood	boprun	bopsat	bopbeter	boponly
.....
0.70	0.81	0.80	0.83	0.44	0.50

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

inbetter	inonly	inwork	greener	jobint	jobsuit
.....
0.44	0.80	0.79	0.33	0.77	0.81

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

jobworth	jobchang	joblook	goodeal	posinfl	feelexhl
.....
0.80	0.27	0.30	0.35	0.62	0.69

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

ezease	growhard	growwory	drained	treatit	wrkstran
.....
0.37	0.69	0.75	0.44	0.40	0.46

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

fatigued
.....
0.50

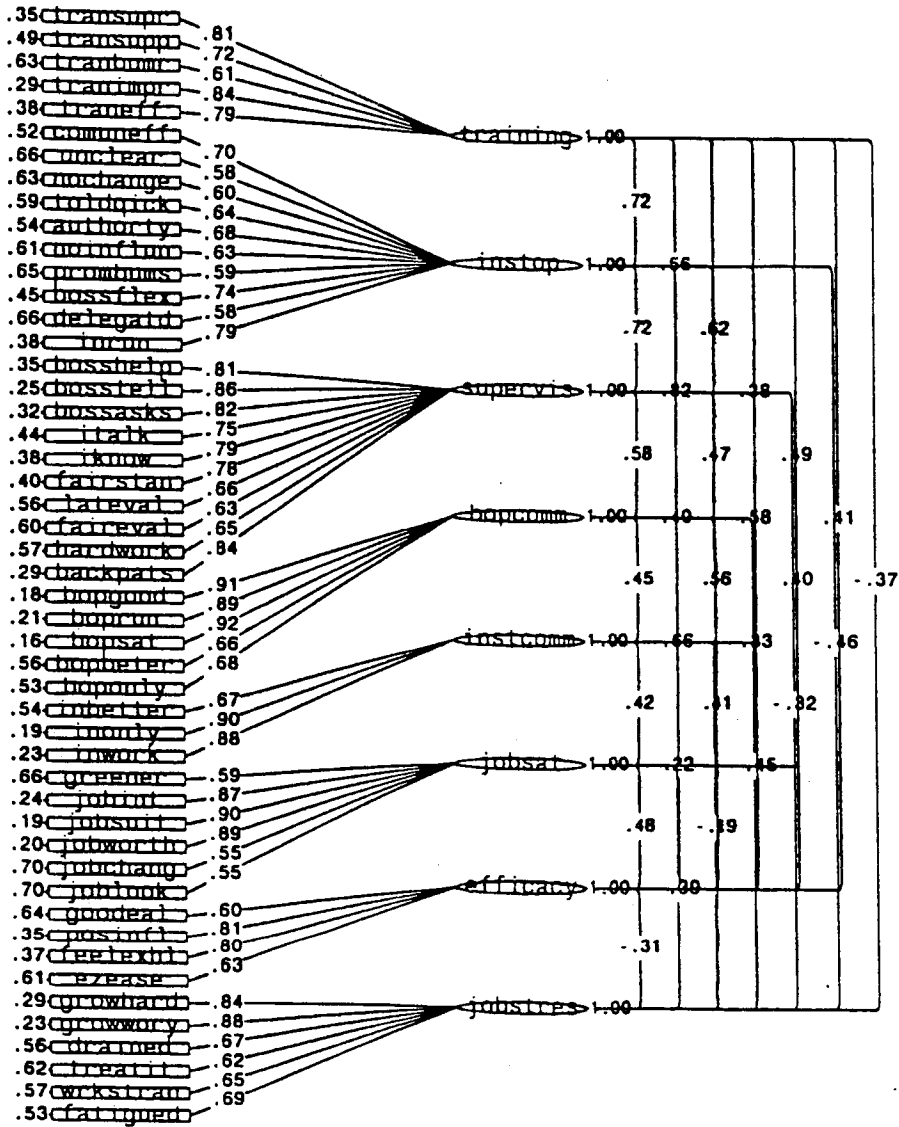
PHI

	training	instop	supervis	bopcomm	instcomm	jobsat
	-----	-----	-----	-----	-----	-----
training	1.00					
instop	0.72 (0.01) 84.96	1.00				
supervis	0.58 (0.01) 55.58	0.73 (0.01) 93.36	1.00			
bopcomm	0.63 (0.01) 65.56	0.82 (0.01) 140.38	0.58 (0.01) 57.81	1.00		
instcomm	0.39 (0.01) 29.08	0.47 (0.01) 38.06	0.39 (0.01) 30.07	0.45 (0.01) 37.31	1.00	
jobsat	0.51 (0.01) 43.77	0.58 (0.01) 55.78	0.54 (0.01) 49.93	0.68 (0.01) 80.46	0.42 (0.01) 33.62	1.00
efficacy	0.38 (0.01) 27.51	0.41 (0.01) 30.38	0.34 (0.01) 24.79	0.43 (0.01) 33.14	0.22 (0.02) 14.72	0.50 (0.01) 40.99
jobstres	-0.34 (0.01) -24.62	-0.44 (0.01) -35.00	-0.30 (0.01) -21.46	-0.46 (0.01) -38.08	-0.22 (0.01) -14.78	-0.40 (0.01) -30.53

PHI

	efficacy	jobstres
	-----	-----
efficacy	1.00	
jobstres	-0.29 (0.01) -19.73	1.00

25



Estimates of 1992
 Prison Social Climate Survey
 Work Environment Measurement Models
 Estimated by Constrained Factor Analysis of Polychoric Correlations.

26

GOODNESS OF FIT STATISTICS

CHI-SQUARE WITH 1099 DEGREES OF FREEDOM = 38416.24 (P = 0.0)

ESTIMATED NON-CENTRALITY PARAMETER (NCP) = 37317.24

MINIMUM FIT FUNCTION VALUE = 4.96

POPULATION DISCREPANCY FUNCTION VALUE (FO) = 4.82

ROOT MEAN SQUARE ERROR OF APPROXIMATION (RMSEA) = 0.066

P-VALUE FOR TEST OF CLOSE FIT (RMSEA < 0.05) = 1.00

EXPECTED CROSS-VALIDATION INDEX (ECVI) = 5.00

ECVI FOR SATURATED MODEL = 0.32

ECVI FOR INDEPENDENCE MODEL = 32.60

CHI-SQUARE FOR INDEPENDENCE MODEL WITH 1176 DEGREES OF FREEDOM = 252289.70

INDEPENDENCE AIC = 252387.70

MODEL AIC = 38668.24

SATURATED AIC = 2450.00

INDEPENDENCE CAIC = 252777.46

MODEL CAIC = 39670.50

SATURATED CAIC = 12194.16

ROOT MEAN SQUARE RESIDUAL (RMR) = 0.061

STANDARDIZED RMR = 0.061

GOODNESS OF FIT INDEX (GFI) = 0.82

ADJUSTED GOODNESS OF FIT INDEX (AGFI) = 0.80

PARSIMONY GOODNESS OF FIT INDEX (PGFI) = 0.73

NORMED FIT INDEX (NFI) = 0.85

NON-NORMED FIT INDEX (NNFI) = 0.84

PARSIMONY NORMED FIT INDEX (PNFI) = 0.79

COMPARATIVE FIT INDEX (CFI) = 0.85

INCREMENTAL FIT INDEX (IFI) = 0.85

RELATIVE FIT INDEX (RFI) = 0.84

CRITICAL N (CN) = 245.02

1992 Prison Social Climate Survey

Work Environment Scales

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

transupr	transupp	tranbumr	tranmpr	traneff	comuneff
0.65	0.51	0.37	0.71	0.62	0.48

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

unclear	nochange	toldqick	authority	noinflun	prombums
0.34	0.37	0.41	0.46	0.39	0.35

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

bossflex	delegatd	inrun	bosshep	bosstell	bossasks
0.55	0.34	0.62	0.65	0.75	0.68

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

italk	iknow	fairstan	lateval	faireval	hardwork
0.56	0.62	0.60	0.44	0.40	0.43

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

backpats	bopgood	boprun	bopsat	bopbeter	boponly
0.71	0.82	0.79	0.84	0.44	0.47

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

inbetter	inonly	inwork	greener	jobint	jobsuit
0.46	0.81	0.77	0.34	0.76	0.81

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

jobworth	jobchang	joblook	goodeal	posinfl	feelexhl
0.80	0.30	0.30	0.36	0.65	0.63

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

ezease	growhard	growwory	drained	treatit	wrkstran
0.39	0.71	0.77	0.44	0.38	0.43

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

fatigued
0.47

PHI

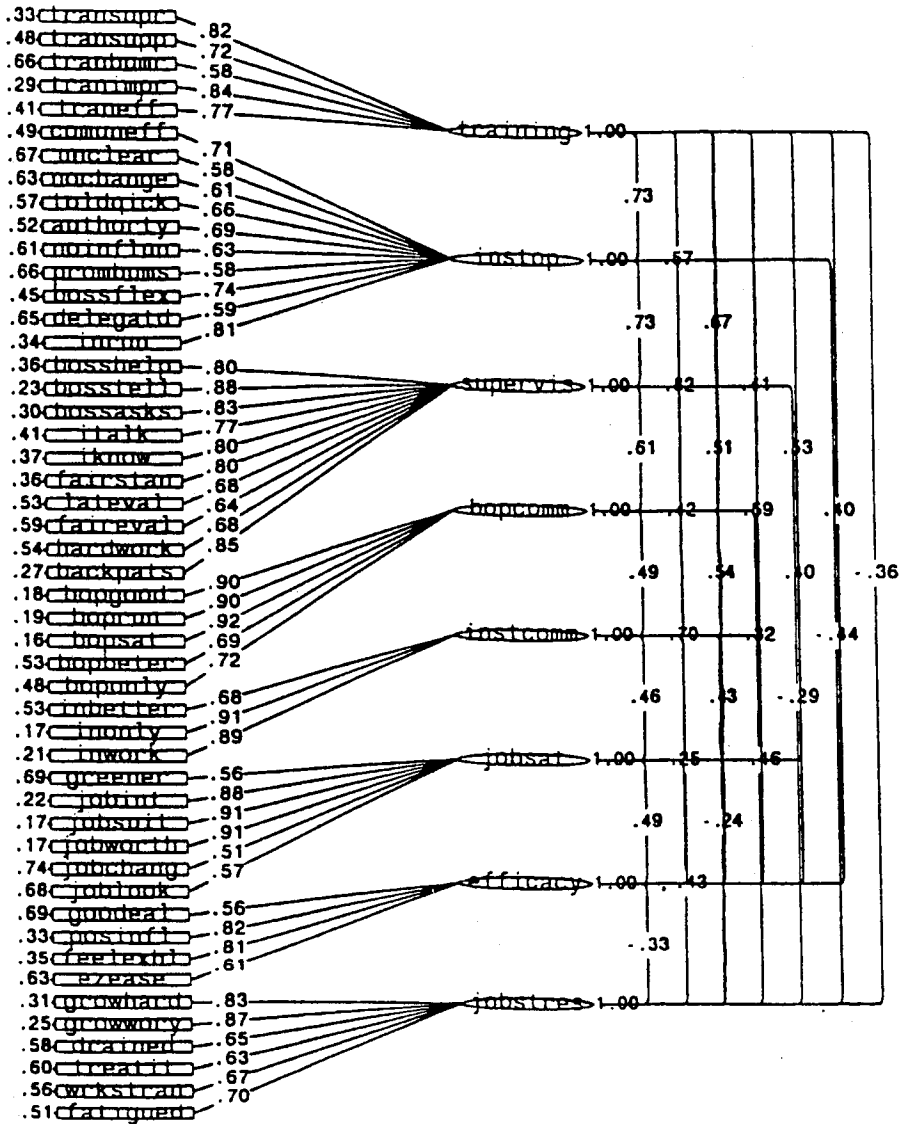
	training	instop	supervis	bopcomm	instcomm	jobsat

training	1.00					
instop	0.72 (0.01) 101.12	1.00				
supervis	0.56 (0.01) 62.81	0.72 (0.01) 110.49	1.00			
bopcomm	0.62 (0.01) 76.79	0.82 (0.00) 164.89	0.58 (0.01) 70.07	1.00		
instcomm	0.38 (0.01) 34.23	0.47 (0.01) 46.24	0.40 (0.01) 37.76	0.45 (0.01) 44.75	1.00	
jobsat	0.49 (0.01) 49.97	0.58 (0.01) 65.97	0.56 (0.01) 64.40	0.66 (0.01) 89.99	0.42 (0.01) 40.07	1.00
efficacy	0.41 (0.01) 36.35	0.40 (0.01) 35.44	0.33 (0.01) 28.01	0.41 (0.01) 36.77	0.22 (0.01) 17.17	0.48 (0.01) 45.78
jobstres	-0.37 (0.01) -32.69	-0.46 (0.01) -44.75	-0.32 (0.01) -28.62	-0.45 (0.01) -43.98	-0.19 (0.01) -15.39	-0.39 (0.01) -36.41

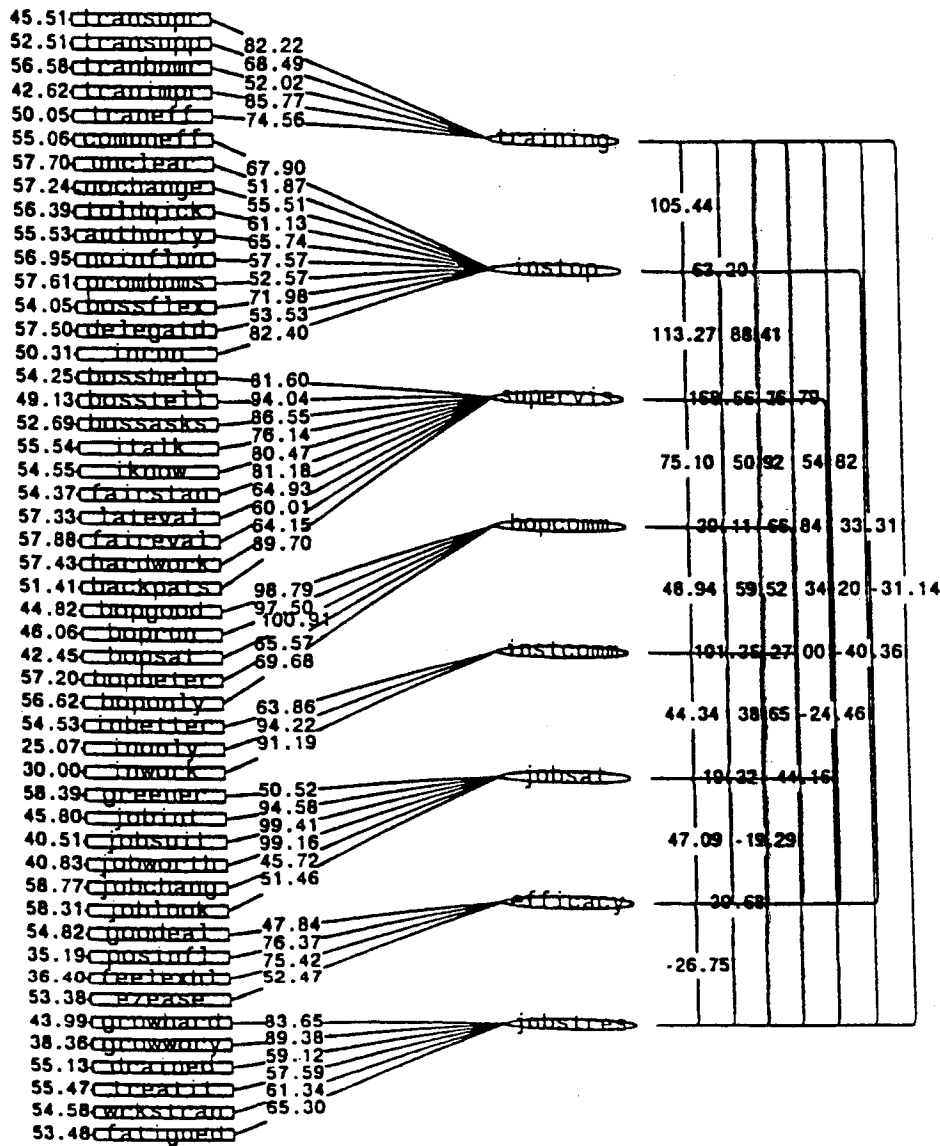
PHI

	efficacy	jobstres

efficacy	1.00	
jobstres	-0.31 (0.01) -25.43	1.00



Estimates of 1993
 Prison Social Climate Survey
 Work Environment Measurement Models
 Estimated by Constrained Factor Analysis of Polychoric Correlations.



T-values For Estimates of 1993
 Prison Social Climate Survey
 Work Environment Measurement
 Models Estimated by Constrained
 Factor Analysis of Polychoric Correlations.

GOODNESS OF FIT STATISTICS

CHI-SQUARE WITH 1099 DEGREES OF FREEDOM = 37237.11 (P = 0.0)

ESTIMATED NON-CENTRALITY PARAMETER (NCP) = 36138.11

MINIMUM FIT FUNCTION VALUE = 5.14

POPULATION DISCREPANCY FUNCTION VALUE (FO) = 4.99

ROOT MEAN SQUARE ERROR OF APPROXIMATION (RMSEA) = 0.067

P-VALUE FOR TEST OF CLOSE FIT (RMSEA < 0.05) = 1.00

EXPECTED CROSS-VALIDATION INDEX (ECVI) = 5.18

ECVI FOR SATURATED MODEL = 0.34

ECVI FOR INDEPENDENCE MODEL = 34.00

CHI-SQUARE FOR INDEPENDENCE MODEL WITH 1176 DEGREES OF FREEDOM = 245971.43

INDEPENDENCE AIC = 246069.43

MODEL AIC = 37489.11

SATURATED AIC = 2450.00

INDEPENDENCE CAIC = 246455.91

MODEL CAIC = 38482.90

SATURATED CAIC = 12111.87

ROOT MEAN SQUARE RESIDUAL (RMR) = 0.061

STANDARDIZED RMR = 0.061

GOODNESS OF FIT INDEX (GFI) = 0.81

ADJUSTED GOODNESS OF FIT INDEX (AGFI) = 0.79

PARSIMONY GOODNESS OF FIT INDEX (PGFI) = 0.73

NORMED FIT INDEX (NFI) = 0.85

NON-NORMED FIT INDEX (NNFI) = 0.84

PARSIMONY NORMED FIT INDEX (PNFI) = 0.79

COMPARATIVE FIT INDEX (CFI) = 0.85

INCREMENTAL FIT INDEX (IFI) = 0.85

RELATIVE FIT INDEX (RFI) = 0.84

CRITICAL N (CN) = 236.39

1993 Prison Social Climate Survey

Work Environment Scales

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

transupr	transupp	tranbumr	tranimpr	traneff	comuneff
.....
0.67	0.52	0.34	0.71	0.59	0.51

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

unclear	nochange	toldqick	authorty	noinflun	prombums
.....
0.33	0.37	0.43	0.48	0.39	0.34

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

bossflex	delegatd	inrun	bosshelp	bosstell	bossasks
.....
0.55	0.35	0.66	0.64	0.77	0.70

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

italk	iknow	fairstan	lateval	faireval	hardwork
.....
0.59	0.63	0.64	0.47	0.41	0.46

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

backpats	bopgood	boprun	bopsat	bopbeter	boponly
.....
0.73	0.82	0.81	0.84	0.47	0.52

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

inbetter	inonly	inwork	greener	jobint	jobsuit
.....
0.47	0.83	0.79	0.31	0.78	0.83

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

jobworth	jobchang	joblook	goodeal	posinfl	feelixhl
.....
0.83	0.26	0.32	0.31	0.67	0.65

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

ezease	growhard	growwory	drained	treatit	wrkstran
.....
0.37	0.69	0.75	0.42	0.40	0.44

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

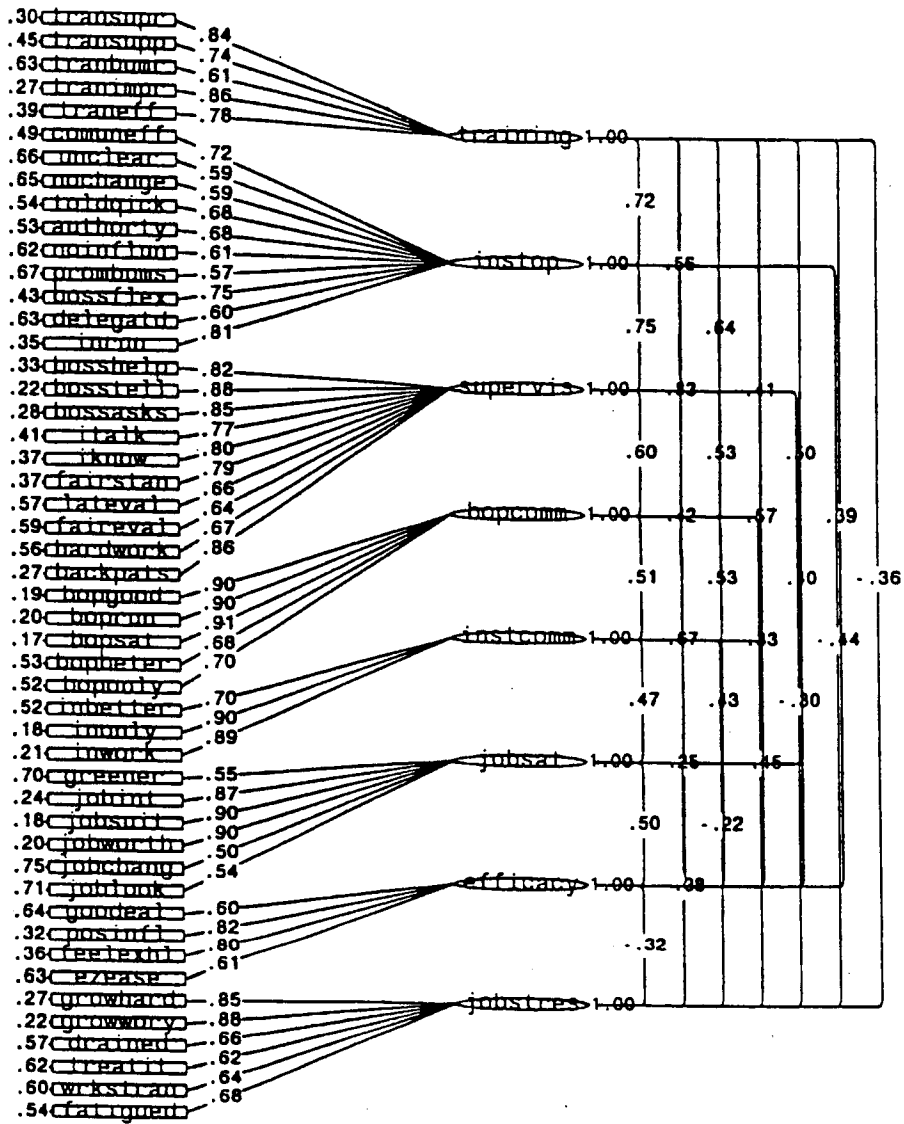
fatigued
.....
0.49

PHI

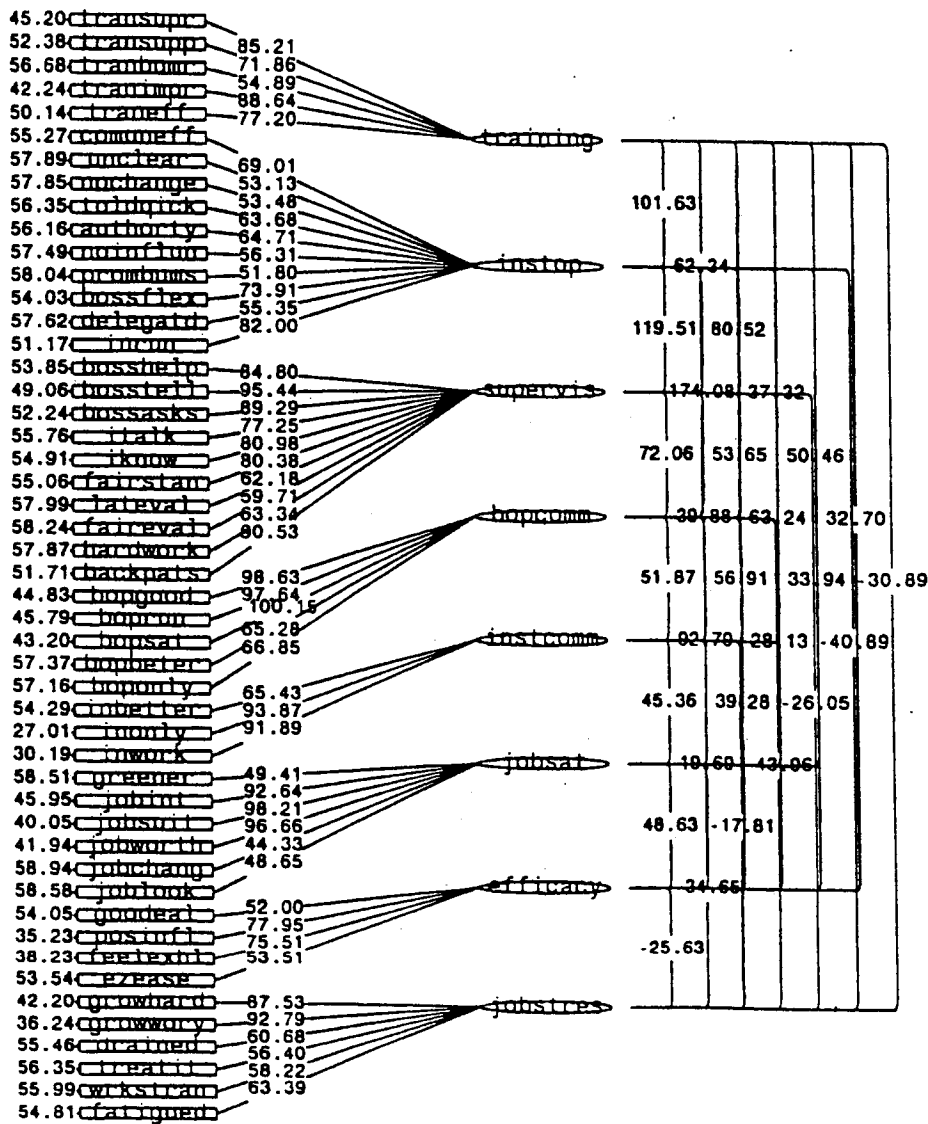
	training	instop	supervis	bopcomm	instcomm	jobsat
	-----	-----	-----	-----	-----	-----
training	1.00					
instop	0.73 (0.01) 105.44	1.00				
supervis	0.57 (0.01) 63.20	0.73 (0.01)	1.00			
bopcomm	0.67 (0.01) 88.41	0.82 (0.00)	0.61 (0.01)	1.00		
instcomm	0.41 (0.01) 36.79	0.51 (0.01)	0.42 (0.01)	0.49 (0.01)	1.00	
jobsat	0.53 (0.01) 54.82	0.59 (0.01)	0.54 (0.01)	0.70 (0.01)	0.46 (0.01)	1.00
efficacy	0.40 (0.01) 33.31	0.40 (0.01)	0.32 (0.01)	0.43 (0.01)	0.25 (0.01)	0.49 (0.01)
jobstres	-0.36 (0.01) -31.14	-0.44 (0.01) -40.36	-0.29 (0.01) -24.46	-0.46 (0.01) -44.16	-0.24 (0.01) -19.29	-0.43 (0.01) -39.68

PHI

	efficacy	jobstres
	-----	-----
efficacy	1.00	
jobstres	-0.33 (0.01) -26.75	1.00



Estimates of 1994
 Prison Social Climate Survey
 Work Environment Measurement Models
 Estimated by Constrained Factor Analysis of Polychoric Correlations.



T-values For Estimates of 1994
 Prison Social Climate Survey
 Work Environment Measurement
 Models Estimated by Constrained
 Factor Analysis of Polychoric Correlations.

GOODNESS OF FIT STATISTICS

CHI-SQUARE WITH 1099 DEGREES OF FREEDOM = 36764.37 (P = 0.0)

ESTIMATED NON-CENTRALITY PARAMETER (NCP) = 35665.37

MINIMUM FIT FUNCTION VALUE = 5.04

POPULATION DISCREPANCY FUNCTION VALUE (FO) = 4.89

ROOT MEAN SQUARE ERROR OF APPROXIMATION (RMSEA) = 0.067

P-VALUE FOR TEST OF CLOSE FIT (RMSEA < 0.05) = 1.00

EXPECTED CROSS-VALIDATION INDEX (ECVI) = 5.07

ECVI FOR SATURATED MODEL = 0.34

ECVI FOR INDEPENDENCE MODEL = 33.90

CHI-SQUARE FOR INDEPENDENCE MODEL WITH 1176 DEGREES OF FREEDOM = 247197.52

INDEPENDENCE AIC = 247295.52

MODEL AIC = 37016.37

SATURATED AIC = 2450.00

INDEPENDENCE CAIC = 247682.38

MODEL CAIC = 38011.15

SATURATED CAIC = 12121.47

ROOT MEAN SQUARE RESIDUAL (RMR) = 0.059

STANDARDIZED RMR = 0.059

GOODNESS OF FIT INDEX (GFI) = 0.82

ADJUSTED GOODNESS OF FIT INDEX (AGFI) = 0.80

PARSIMONY GOODNESS OF FIT INDEX (PGFI) = 0.73

NORMED FIT INDEX (NFI) = 0.85

NON-NORMED FIT INDEX (NNFI) = 0.84

PARSIMONY NORMED FIT INDEX (PNFI) = 0.80

COMPARATIVE FIT INDEX (CFI) = 0.86

INCREMENTAL FIT INDEX (IFI) = 0.86

RELATIVE FIT INDEX (RFI) = 0.84

CRITICAL N (CN) = 241.29

1994 Prison Social Climate Survey

Work Environment Scales

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

transupr	transupp	tranbumr	tranimpr	traneff	comuneff
.....
0.70	0.55	0.37	0.73	0.61	0.51

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

unclear	nochange	toldqick	awthority	noinflun	prombums
.....
0.34	0.35	0.46	0.47	0.38	0.33

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

bossflex	delegatd	inrun	bosshelp	bosstell	bossasks
.....
0.57	0.37	0.65	0.67	0.78	0.72

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

italk	iknow	fairstan	lateval	faireval	hardwork
.....
0.59	0.63	0.63	0.43	0.41	0.44

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

backpats	bopgood	boprun	bopsat	bopbeter	boponly
.....
0.73	0.81	0.80	0.83	0.47	0.48

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

inbetter	inonly	inwork	greener	jobint	jobsuit
.....
0.48	0.82	0.79	0.30	0.76	0.82

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

jobworth	jobchang	joblook	goodeal	posinfl	feelexhl
.....
0.80	0.25	0.29	0.36	0.68	0.64

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

ezease	growhard	growwory	drained	treatit	wrkstran
.....
0.37	0.73	0.78	0.43	0.38	0.40

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

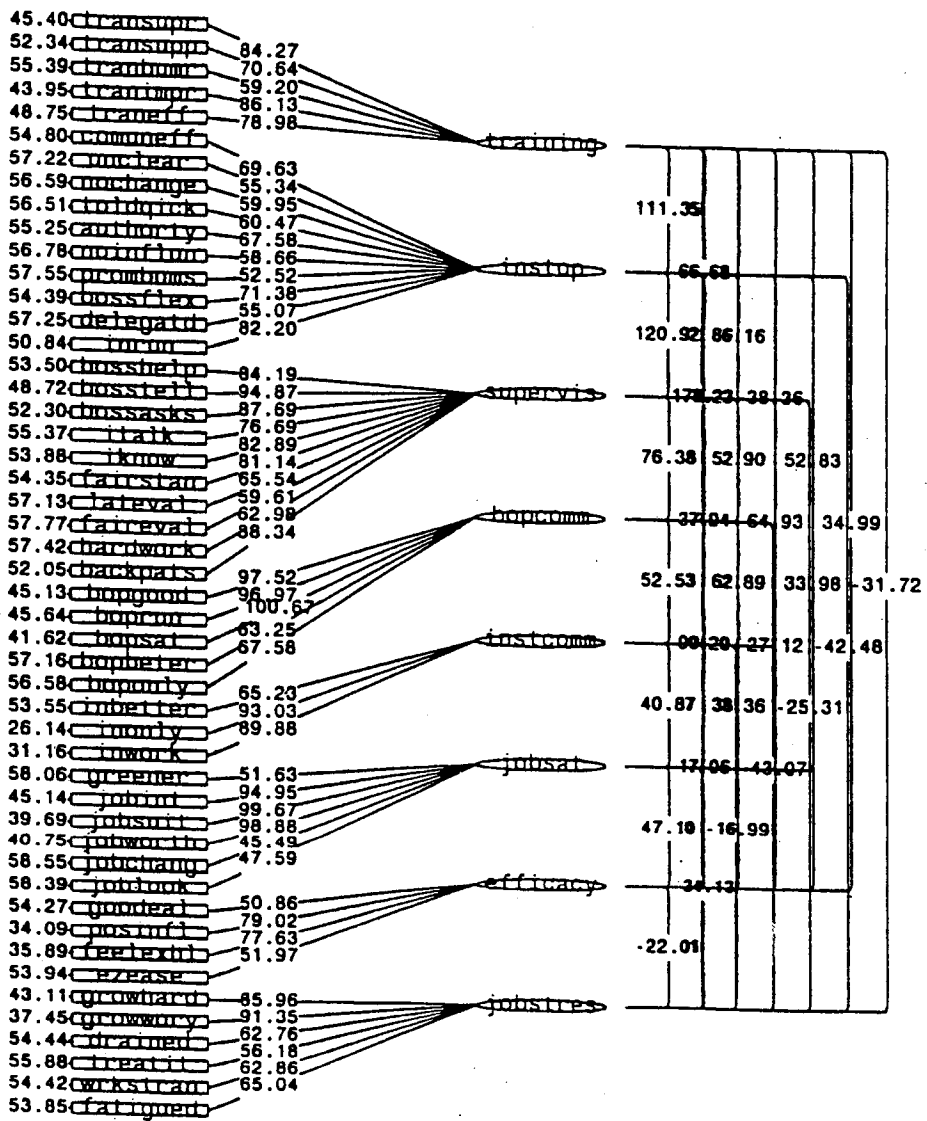
fatigued
.....
0.46

PHI

	training	instop	supervis	bopcomm	instcomm	jobsat
	-----	-----	-----	-----	-----	-----
training	1.00					
instop	0.72 (0.01) 101.63	1.00				
supervis	0.56 (0.01) 62.34	0.75 (0.01) 119.51	1.00			
bopcomm	0.64 (0.01) 80.52	0.83 (0.00) 174.08	0.60 (0.01) 72.06	1.00		
instcomm	0.41 (0.01) 37.32	0.53 (0.01) 53.65	0.42 (0.01) 39.88	0.51 (0.01) 51.87	1.00	
jobsat	0.50 (0.01) 50.46	0.57 (0.01) 63.24	0.53 (0.01) 56.91	0.67 (0.01) 92.79	0.47 (0.01) 45.36	1.00
efficacy	0.39 (0.01) 32.70	0.40 (0.01) 33.94	0.33 (0.01) 28.13	0.43 (0.01) 39.28	0.25 (0.01) 19.69	0.50 (0.01) 48.63
jobstres	-0.36 (0.01) -30.89	-0.44 (0.01) -40.89	-0.30 (0.01) -26.05	-0.45 (0.01) -43.96	-0.22 (0.01) -17.81	-0.38 (0.01) -34.65

PHI

	efficacy	jobstres
	-----	-----
efficacy	1.00	
jobstres	-0.32 (0.01) -25.63	1.00



T-values For Estimates of 1995
 Prison Social Climate Survey
 Work Environment Measurement
 Models Estimated by Constrained
 Factor Analysis of Polychoric Correlations.

GOODNESS OF FIT STATISTICS

CHI-SQUARE WITH 1099 DEGREES OF FREEDOM = 37572.74 (P = 0.0)

ESTIMATED NON-CENTRALITY PARAMETER (NCP) = 36473.74

MINIMUM FIT FUNCTION VALUE = 5.24

POPULATION DISCREPANCY FUNCTION VALUE (F0) = 5.08

ROOT MEAN SQUARE ERROR OF APPROXIMATION (RMSEA) = 0.068

P-VALUE FOR TEST OF CLOSE FIT (RMSEA < 0.05) = 1.00

EXPECTED CROSS-VALIDATION INDEX (ECVI) = 5.27

ECVI FOR SATURATED MODEL = 0.34

ECVI FOR INDEPENDENCE MODEL = 35.01

CHI-SQUARE FOR INDEPENDENCE MODEL WITH 1176 DEGREES OF FREEDOM = 251153.18

INDEPENDENCE AIC = 251251.18

MODEL AIC = 37824.74

SATURATED AIC = 2450.00

INDEPENDENCE CAIC = 251637.24

MODEL CAIC = 38817.47

SATURATED CAIC = 12101.50

ROOT MEAN SQUARE RESIDUAL (RMR) = 0.061

STANDARDIZED RMR = 0.061

GOODNESS OF FIT INDEX (GFI) = 0.81

ADJUSTED GOODNESS OF FIT INDEX (AGFI) = 0.79

PARSIMONY GOODNESS OF FIT INDEX (PGFI) = 0.73

NORMED FIT INDEX (NFI) = 0.85

NON-NORMED FIT INDEX (NNFI) = 0.84

PARSIMONY NORMED FIT INDEX (PNFI) = 0.79

COMPARATIVE FIT INDEX (CFI) = 0.85

INCREMENTAL FIT INDEX (IFI) = 0.85

RELATIVE FIT INDEX (RFI) = 0.84

CRITICAL N (CN) = 232.32

1995 Prison Social Climate Survey

Work Environment Scales

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

transupr	transupp	tranbumr	tranimpr	traneff	comuneff
0.69	0.55	0.42	0.71	0.64	0.53

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

unclear	nochange	toldqick	authority	noinflun	prombums
0.37	0.42	0.43	0.50	0.41	0.34

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

bossflex	delegatd	inrun	bosshelp	bosstell	bossasks
0.55	0.37	0.66	0.67	0.78	0.71

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

italk	iknow	fairstan	lateval	faireval	hardwork
0.59	0.66	0.64	0.47	0.41	0.45

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

backpats	bopgood	boprun	bopsat	bopbeter	boponly
0.72	0.81	0.81	0.84	0.45	0.50

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

inbetter	inonly	inwork	greener	jobint	jobsuit
0.49	0.82	0.78	0.33	0.79	0.84

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

jobworth	jobchang	joblook	goodeal	posinfl	feelexl
0.83	0.26	0.29	0.35	0.69	0.67

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

ezease	growhard	growwory	drained	treatit	wrkstran
0.36	0.72	0.77	0.46	0.39	0.46

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

fatigued
0.48

PHI

	training	instop	supervis	bopcomm	instcomm	jobsat

training	1.00					
instop	0.75 (0.01) 111.35	1.00				
supervis	0.59 (0.01) 66.68	0.75 (0.01) 120.92	1.00			
bopcomm	0.66 (0.01) 86.16	0.84 (0.00) 178.23	0.62 (0.01) 76.38	1.00		
instcomm	0.42 (0.01) 38.36	0.52 (0.01) 52.90	0.41 (0.01) 37.94	0.51 (0.01) 52.53	1.00	
jobsat	0.52 (0.01) 52.83	0.58 (0.01) 64.93	0.56 (0.01) 62.89	0.67 (0.01) 90.20	0.43 (0.01) 40.87	1.00
efficacy	0.41 (0.01) 34.99	0.40 (0.01) 33.98	0.32 (0.01) 27.12	0.43 (0.01) 38.36	0.22 (0.01) 17.06	0.49 (0.01) 47.10
jobstres	-0.37 (0.01) -31.72	-0.45 (0.01) -42.48	-0.30 (0.01) -25.31	-0.45 (0.01) -43.07	-0.21 (0.01) -16.99	-0.38 (0.01) -34.13

PHI

	efficacy	jobstres

efficacy	1.00	
jobstres	-0.28 (0.01) -22.01	1.00