

The Construct Validation of Two Dimensions of Leadership Style

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I. INTRODUCTION

Two dimensions (power and affection) of leadership style are proposed as the basis of identifying the leadership style in the study. Validity indicates the degree to which an instrument measures the construct which is under investigation. "Construct validity is evaluated by investigation of what qualities a test measures, that is, by determining the degree to which certain explanatory concepts or constructs account for performance on the test" (American Psychological Association, 1966, p.13). An attempt to validate one's scales by examining a matrix of correlations has been developed by Campbell and Fiske (1959) and is called multitrait-multimethod approach to construct validation.

The study presented here attempted to assess the construct validity of the two leadership dimensions mentioned above. Three methods of measuring these dimensions were used (projective method, questionnaire and behavioral measure) and two constructs were evaluated (power and affection). According to Campbell and Fiske, for relative construct validity, (a) the entries in the validity diagonal should be significantly different from zero and sufficiently large to encourage further examination of validity, (b) a validity diagonal value should be higher than the values lying in its column and row in the hetero-

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trait-heteromethod triangles, (c) a variable should correlate higher with an independent effort to measure the same trait than with measures designed to get at different traits which happen to employ the same method, (d) the same pattern of trait interrelationship be shown in all of the heterotrait triangles of both the monomethod and heteromethod blocks (pp. 82-83).

II. METHOD

Subjects The subjects were divided into three categories for the construction of three multitrait-multimethod matrices: 63 clerical workers for the validation between projective method (personality) and questionnaire (attitude); 18 supervisors who participated in rotation experiment for the validation between questionnaire (self-report of behavior) and observational behavior measure; 7 middle and top managers for the validation between projective method and an observational behavior measure. For obtaining behavioral data, 30-minute discussion sessions were constructed.

Measures Needs for power and affection (considered as personality-motivational traits) were assessed by using two pictures from TAT as projective method. Attitudes were assessed by using items from Obedience and Benevolence Scales of Oh¹⁾. Behavior was measured in two ways; self-report by using modified items from Supervisory Behavior Description of Hemphill (1957) as questionnaire²⁾, and by using observational categories of Dunphy to code interactions in a group.

III. RESULTS

Three 4×4 correlation matrices were computed for the two leader-

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- 1) Four items from Obedience and five items from Benevolence were selected on the basis of factor analysis (See Appendix).
 - 2) Nine items from Initiating Structure and ten items from Consideration were selected as indicants of power and affection traits after factor analysis (See Appendix).

ship traits by two different methods, one matrix for each sample of subjects. To assess the discriminant validity of the two-component distinction, it is necessary to determine how often the monotrait-heteromethod coefficients are larger than their corresponding heterotrait-heteromethod coefficients. Table 1 indicates that the evidence for construct validity between projective method and questionnaire (attitude) is good.

The reliabilities of projective method are inter-rater reliabilities. The reliability coefficients for the projective method (.88, .89) are significantly greater than other values at the .001 level. Two monotrait-heteromethod validities (.28, .44) are also significantly larger

Table 1. The multitrait-multimethod matrix of correlations
(projective vs. questionnaire)

N=63

		Projective method		Questionnaire (attitude)	
		Affection	Power	Affection	Power
Proj.	Affec.	(.88**)			
	Power	-.04	(.89**)		
Quest	Affec.	.28*	-.10		
	Power	-.17	.44**	-.05	

*p<.05; **p<.001

than zero (at .05 and .001 respectively) and sufficiently greater to prove discriminant validity. This is more evident when each of the convergent validities are compared with the two divergent validities (-.10, -.17).

Table 2 also indicates the evidence of the construct validity between questionnaire and behavioral measure. It shows almost the same pattern as appeared in Table 1.

The convergent validities (.85 and .80) are significantly greater than zero (at the .001 level) and also larger than divergent validities (-.61 and -.45). The only difference between the results of two tables is that the method variance correlations (-.34 and -.70) in Table 2 are negatively greater than those (-.04 and -.05) in Table

**Table 2. The multitrait-multimethod matrix of correlations
(questionnaire vs. behavior)**

N=18

		Self-report behavior		Observation of Behavior	
		Consideration	Initiation	Affection	Power
Ques.	Con.	(.74**)			
	Init.	-.34	(.73**)		
Beh.	Affec.	.85**	-.61*	(.88**)	
	Power	-.45	.80**	-.70*	(.89**)

*p<.01 .74 & .73: split-half reliabilities

**p<.001 .88 & .89: inter-rater reliabilities

**Table 3. The multitrait multimethod matrix of correlations
(projective vs. Behavior)**

N=7

		Projective method		Observation of Behavior	
		Affection	Power	Affection	Power
Proj.	Affec.	(.88)			
	Power	.24	(.89)		
Beh.	Affec.	.60*	-.54		
	Power	.39	.75**	-.44	

*p<.15; **p<.05

1. This result may tell that the relationship between two leadership traits is orthogonal rather than independent of each other. However, this difference occurs because the scoring of behavioral data is based upon the percent of instances of affection or power responses to total instances which one subject emitted. Therefore, the method variance correlation of behavioral measure appears to be negative significantly, when increasing percent of instances on affection brings decreasing percent of instances on power provided that the percent of instances on work dimension is relatively constant across the subjects.

Table 3 indicates that the evidence of the construct validity between projective method and behavioral measure is rather slighter than the two described above. Higher correlational coefficients in all columns

and rows obtained due to the small number of the sample. However, the convergent validities (.60 and .75) are considerably higher than the discriminant validities (-.54 and .39), even though .60 is only significant at the .15 level.

However, it should be noted that these results were derived from the refinement of procedure like factor analysis in that items in attitude scales and Ohio scales were selected on the basis of their factor loadings. Obedience is positively correlated with both benevolence and initiation at the significant level, and authoritarianism is positively correlated with consideration at the significant level. This means that some of the results on construct validation might be attributed to the fact that original items of all the questionnaires were selected on the basis of factor analysis.

IV. DISCUSSION AND SUMMARY

One advantage to using multitrait-multimethod matrix procedure is its dual sensitivity to convergent and discriminant validity in assessing theoretically derived measures. Davids and Pildner (1958) emphasized that the intervalidation between projective and direct assessment measures should be made because the comparison of direct and projective testing results has revealed frequent contradictions and as a result there has been an increasing inclination to regard the two methods as separate entities, each measuring a different aspect or level of personality. Allport (1953) also asserted that both direct and projective measures would reveal the same information about the motives of the normal, well adjusted personality. Projective methods are commonly believed to elicit deeper and sometimes repressed personality information. By imposing structure on the stimulus material of instruments such as the Rorschach and the TAT, the individual may reveal unconscious strivings and conflicts of which he is not fully aware. In response to direct approaches the individual may accurately describe conscious personality attributes and only vaguely suggest pertinent deeper level functionings. Thus even though assessment focus is iden-

tified and defined, material gained from the two methods of measurement can be sufficiently dissimilar.

The above discussion regarding the inconsistency of results between the direct and the projective measures is also related to the attitude-action relationship. Attitude theory does not propose that a person's underlying attitude to an object is the role determinant of his behavior when interacting object. This is even more obvious when the attitude refers to a class of objects and the action refers to a specific member of that class. Major determinants of action are the social constraints under which the person operates, well as including immediate interpersonal demands, as well as normative expectations...conveyed by relevant reference groups...that affect behavior in the situation. In his thorough review of the attitude-action relationship, Wicker (1969) concluded that "taken as a whole, these studies suggest that attitudes will be unrelated or only slightly related to overt behaviors than that attitudes will be closely related to actions (p.65)."

However, Kelman (1974) argued that "inconsistencies, or apparant inconsistencies, between attitudes and behavior often arise because the studies have not taken account of the social constraints that govern the situations in which the action is observed and the attitudes are assessed (p. 313)."

From the above consideration, it is difficult to expect the evidence of the construct validity of the two (power and affection) dimensions of leadership by three different measures. The major purpose of this validation was to examine the relative construct validities of three different measures (projective, questionnaire, and behavioral) used in current research on leadership dimensions. The results presented indicate that the variable under consideration (power and affection) had almost complete evidence of construct validity, even though the result between the projective and the behavioral measures appeared to be marginal.

This data leads to the conclusion that in any assessment situation including leadership dimensions the need for the multiple measures should be stressed.

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APPENDIX

FACTOR MATRICES

Equimax Rotated Factor Matrix after
Rotation with Kaiser Normalization

Attitude items	Factor 1 (Benevolence)	Factor 2 (Obedience)
O1 Ancestor worship	.31	.11
O2 Men superior	.10	.44
O3 Obey elders	.17	.29
O4 Obey parents	.26	.55
C5 Obey authority	-.11	.55
C6 Social order	.03	.67
B1 Kindly elder	.51	.17
B2 Affiliation	.44	.33
B3 Benevolence	.47	.13
B4 Affiliation in husband-wife	.68	.06
B5 Affiliation in father-son	.72	-.01
B6 Affiliation in friendship	.50	-.04

Items	Factor 1 (Initiation)	Factor 2 (Obedience)	Factor 3 (Authori- tarianism)	Factor 4 (Consid- eration)	Factor 5 (Benev- olence)
F1 Settle down rebellion	.00	-.03	.29	.08	.10
F2 Unpleasant habit	.21	.05	.23	.15	.00
F3 Devoted leader	.10	.02	.37	.05	.19
F4 Punishment	-.08	.07	.18	.22	.09
F5 Immoral people	-.03	.04	.35	.16	.04
F6 Obey authority	-.07	-.12	.25	-.02	.07
F7 Restoration	-.08	.01	.25	-.04	.01
F8 Hurting friends	.06	.12	.25	.07	.24
F9 Suffering	-.01	.03	.41	.09	.16
F10 Insult to honor	.22	.02	.27	.00	.05

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Items	Factor 1 (Initiation)	Factor 2 (Obedience)	Factor 3 (Authoritarianism)	Factor 4 (Consideration)	Factor 5 (Benevolence)
O1 Ancestor worship	.00	.22	.35	-.05	-.05
O2 Men superior	.04	.39	-.05	-.09	-.12
O3 Obey elders	.29	.25	.03	.08	.20
O4 Obey parents	.11	.47	-.03	.00	-.01
C5 Obey authority	.08	.33	-.13	.01	-.37
O6 Social order	.16	.43	-.12	.00	-.14
B1 Kindly elder	.14	.38	.36	.03	.03
B2 Affiliation	.17	.40	.20	.02	.23
B3 Benevolence	.10	.39	.29	.05	.12
B4 Affiliation in husband-wife	-.01	.48	.28	.04	.13
E5 Affiliation in father-son	.01	.48	.12	.12	.17
B6 Affiliation in friendship	-.09	.36	.07	.16	.07
C1 Appreciation	.10	.13	.00	.54	.02
C2 Understanding	.03	.35	-.12	.40	.10
C3 Personal problems	.13	-.10	-.07	.43	.14
C4 Criticize	.20	.26	.13	.23	.33
C5 Reward	.23	-.07	-.16	.38	.01
C6 Change duties	.15	.08	.32	.25	.39
C7 Consulting	.22	.07	.18	.20	.23
C8 Morale	.29	.01	.04	.48	.16
C9 Back-up	.03	.05	.17	.55	.03
C10 Equal treat	.26	.04	-.04	.34	.03
C11 Change	.00	.11	.25	.21	.12
C12 Friendliness	.01	.09	.24	.53	.14
C13 Suggestions	.17	.01	.11	.34	.03
C14 Approval	.07	-.04	-.04	.31	.12
I1 New ideas	.22	.17	.03	.24	.12
I2 How much work	.62	.05	-.06	.22	-.03
I3 Encourage	.40	.43	.11	.24	.21
I4 Standard ways	.31	.12	.09	.39	.15
I5 Limits	.35	.00	.16	.26	-.06
I6 Informed	.46	.00	-.03	.23	.04
I7 Being ahead	.64	.00	.11	.25	.04
I8 Deadlines	.64	.05	-.07	.15	-.07
I9 Slow groups	.52	.09	-.04	.02	-.04
I10 Quantity of work	.37	.25	.13	.00	-.02

