

PSYCHOMETRIC INVESTIGATION OF THE MACH IV SCALE MEASURING MACHIAVELLIANISM

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Summary.—A psychometric investigation of the MACH IV scale developed by Christie and Geis in 1970 to measure Machiavellianism was conducted. Factor analyses performed on data from two different samples of respondents suggest empirical difficulties in the number and nature of dimensions underlying the scale. Comparable analyses of a Satisfaction scale developed by Hunt and Chonko in 1984 and administered at the same time to the same subjects as the MACH IV scale indicated no similar difficulties with the Satisfaction scale's empirical validity.

Over the past 20 yr. a considerable body of literature has reported investigations of the Machiavellianism construct. The most widely used measure of Machiavellianism has been the MACH IV scale developed by Christie and Geis (1970). A number of investigators have attempted to determine what the MACH IV measures. Their studies have produced conflicting results. One group suggests that Machiavellianism is a single construct (Christie & Lehman, 1970; Kuo & Marsella, 1977) while others have presented evidence that suggests Machiavellianism is a multidimensional construct (Williams, Hazelton, & Renshaw, 1975; Hunter, Gerbig, & Boster, 1982). The latter researchers stated:

These results suggest that the Machiavellian dimension has no construct validity. Rather it is an arbitrary composite score formed by summing over Machiavellian beliefs that do have construct validity (p. 1305).

The issue is not whether Machiavellianism is a single or multidimensional construct, but whether the construct is measurable using the MACH IV scale. If the construct is measurable and is a single component, the scale items should load into a single factor upon factor analysis. If the construct is measurable and is multidimensional, then scale items should load onto two or more dimensions upon factor analysis. Further, from test population to test population the grouping of items should generally "load" onto the same dimension or factor upon analysis. Minor shifts may occur from test population to test population as some items may have loading values that are very close. Further, Kerlinger (1973) suggests the use of factor analysis in determining construct validity. In this study, the MACH IV scale (Christie & Geis, 1970) and a scale reported to measure satisfaction (Hunt & Chonko, 1984) were administered to two groups of construction contractors. Items for the MACH IV scale appear in Table 1 and those for the measures of satisfaction in Table 4 below. The instruments were administered to

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TABLE 1
MACHIAVELLIANISM SCALE, MACH IV*: ITEM NUMBERS AND NAMES

Item Number and Name
1. Honesty is the best policy in all cases.
2. When you ask someone to do something for you it is best to give the real reasons for wanting it, rather than giving wrong reasons.
3. There is no excuse for lying to someone else.
4. Generally speaking, people won't work hard unless they're forced to do so.
5. The biggest difference between most convicted criminals and other people is that criminals are stupid enough to get caught.
6. P.T. Barnum of the Ringling Bros. Circus was wrong when he said, "There's a sucker born every minute!"
7. It is safest to assume that all people have a vicious streak, and it will come out when they are given a chance.
8. Never tell anyone the real reason you did something unless it is useful to do so.
9. It is wise to flatter important people.
10. It is hard to get ahead without cutting corners here and there.
11. It is impossible to be good in all respects.
12. Most people are basically good and kind.
13. Most men/women are brave.
14. All in all, it is better to be humble and honest than important and dishonest.
15. Most people who get ahead in the world lead clean, moral lives.
16. The best way to handle people is to tell them what they want to hear.
17. A person should take action only when sure it is morally right.
18. Most men forget more easily the death of their father than the loss of their property.
19. People suffering from incurable diseases should have the choice of being put painlessly to death.
20. Anyone who completely trusts anyone else is asking for trouble.

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133 certified Disadvantaged Business Entrepreneurs/Women Business Entrepreneurs (DBE/WBE) and 117 nonminority construction contractors as part of a mail survey. Work experience of both groups ranged from 2 to over 40 yr. The minority contractors had a mean of 20 yr. experience, with 12 yr. in the current position. Nonminority contractors had a mean of 15 yr. experience, with 8 yr. average in their current position. Study of postal returns suggest responses were roughly in proportion to the distribution of contractors in the continental United States.

Mean responses and SDs on the MACH IV scale were 80.90 and 12.91 for DBE/WBE respondents and 80.08 and 13.73 for nonminority respondents. The close proximity of these two groups' responses conflicted with other data obtained evaluating contractors' perceptions of manipulative practices in the highway construction industry, so further analyses were undertaken.

A factor analysis was conducted on the correlation matrix of each group of respondents with varimax rotation and Kaiser normalization. The results are presented in Table 2 for the minority contractors and also for the non-

TABLE 2
FACTOR ANALYSES* FOR RESPONSES OF WBE/DBE CONTRACTORS
AND NONMINORITY CONTRACTORS

Factor							Factor							
1	2	3	4	5	6	7	1	2	3	4	5	6	7	8
Nonminority Contractors							WBE/DBE Contractors							
1.		785					806							
2.			-723				792							
3.		440				467	458							
4. 581								699						
5. 568								621						
6.		555						-507						
7.	659								835					
8. 614									704					
9.				-679						712				
10.	687									574				
11.					-414						869			
12.	541										522			
13.			.659									754		
14.		598										668		
15. 664												400		
16.					776								824	
17.	505												-485	
18.				696				424					429	
19.						896								799
20. 642														400

*Decimals omitted.

minority contractors. Assuming that the MACH IV scale is a valid measure of the Machiavellianism construct, the resulting factor analyses should have yielded the same number of factors and items should have loaded on substantially the same factors. Using an eigenvalue of 1.0 for estimating the number of factors, and a scree test for confirmation, a total of eight factors

TABLE 3
EIGENVALUES FOR FIRST TEN FACTORS

Factor	MBE/DBE	Nonminority
1	2.79	3.78
2	2.14	1.73
3	1.56	1.65
4	1.39	1.36
5	1.28	1.34
6	1.24	1.12
7	1.10	1.07
8	1.01	0.99
9	0.94	0.86
10	0.89	0.81

were identified for the minority contractors and seven for the nonminority contractors. The factor loading cut-off value was .4 in each case.

TABLE 4
COMPARISON OF REPORTS OF FACTOR COMPONENTS OF A SATISFACTION SCALE

Item	Study: Factors											
	Hunt and Chonko (1984)				DBE/WBE				Nonminority Contractors			
	1	2	3	4	1	2	3	4	1	2	3	4
Satisfaction with Information												
1. I am satisfied with the information I receive from my superior about my job performance.	.87				.73				.78			
2. I receive enough information from my supervisor about my job performance.	.88				.87				.77			
3. I receive enough feedback from my supervisor on how well I'm doing.	.92				.74				.83			
4. There is enough opportunity in my job to find out how I am doing.	.65				.47		.48		.52			.46
Satisfaction with Variety												
5. I am satisfied with the variety of activities my job offers.	.82					.85						.78
6. I am satisfied with the freedom I have to do what I want on my job.	.59					.67			.60			
7. I am satisfied with the opportunity my job provides me to interact with others.	.48					.58					.65	
8. There is enough variety in my job.	.75					.41	.75				.60	.57
9. I have enough freedom to do what I want in my job.	.62					.76					.72	
10. My job has enough opportunity for independent thought and action.	.62					.87					.81	
Satisfaction with Closure												
11. I am satisfied with the opportunities my job gives me to complete tasks from beginning to end.		.76				.84					.83	
12. My job has enough opportunity to complete the work I start.		.71				.76					.79	
Satisfaction with pay												
13. I am satisfied with the pay I receive for my job.		.51					.77					.77
14. I am satisfied with the security my job provides me.		.66					.65					.74

Two points are of interest in examining these results. First, comparison showed none of the factors identified for each group had multiple items loading into similar factors. This lack of consistent item loadings onto similar factors suggests the MACH IV scale does not measure the Machiavellian construct or its components consistently. The second point of interest con-

cerns the eigenvalues. There is not a clear separation at the value 1.0. At least two additional values are above the .9 eigenvalue and close to the cut-off (Table 3). Since the use of the value 1.0 is an arbitrary convention (Hair, *et al.*, 1987), the number of factors may not be of concern; however, the failure of items to load consistently must be of concern.

The analysis conducted above with the MACH IV scale was repeated with the Hunt and Chonko (1984) satisfaction scale. Hunt and Chonko reported four components to this scale (Table 4), while Gable and Topol (1988) reported three. The factor analysis reported here, of both groups' (DBE/WBE and nonminority contractors) responses to the scale yielded four components. Of further interest is that the items loaded consistently into each component of the scale with one exception. In this exception, the loadings for the factors containing these items were very close. This suggests that additional responses might result in different loadings but into the appropriate factors. The eigenvalues also suggest a clear interpretation of four factors (Table 4).

The results of these analyses suggest that the underlying dimensions differed between data sets on the Machiavellianism scale. Unfortunately, evidence suggesting agreement on the number and nature of factors was lacking. By comparison, consistent results were obtained for the nature and number of factors using a satisfaction scale.

The ambiguous findings suggest either problems with the Machiavellianism scale or varied questionnaire answering abilities on the part of different members contributing to this data set. The consistent results with the satisfaction scale suggest that the latter is not the problem. The results support the prior findings of Hunter, *et al.* (1982) and Williams, *et al.* (1975) in raising doubts about whether the MACH IV scale measures the Machiavellianism concept. It is suggested that either scale refinement is required to overcome the limitations reported here or that further work should focus on specific beliefs as suggested by Hunter, *et al.* (1982) in developing a multidimensional Machiavellianism construct.

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