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Further Evidence for the Discriminant Validity of Measures of Organizational Commitment, Job Involvement, and Job Satisfaction

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Discriminant validity of measures of job satisfaction, job involvement, and organizational commitment was assessed with data from 194 bus drivers and 311 engineers. In each sample, LISREL VI confirmatory factor analyses illustrated that indicators of the 3 variables better fit a 3-factor model than several 2- and one single-factor models. Additional LISREL analyses were used to evaluate whether sets of correlates related consistently with estimated latent job satisfaction, job involvement, and organizational commitment constructs. In the bus driver sample, 5 of 9 correlates related differentially with at least 2 of the 3 variables; in the engineer sample, 5 of 7 correlates related differentially with at least 2 of the 3 variables. These findings are consistent with an earlier study conducted by Brooke, Russell, and Price (1988), although they sampled different employee populations and investigated different sets of correlates. Implications for future research are noted.

Correlates of job satisfaction enjoy a lengthy research history. More recently, other employee affective reactions, such as organizational commitment and job involvement, have been increasingly used in organizational studies. With this proliferation of different concepts comes the potential danger of a lack of specificity concerning the definition and measurement of different variables. Thus, attention has recently been directed toward the extent to which measures of these three constructs are distinguishable. In particular, Brooke, Russell, and Price (1988) performed two sets of confirmatory factor analyses that illustrated discriminant validity among measures of job involvement, job satisfaction, and organizational commitment. In the first set of analyses, Brooke et al. demonstrated that indicators of the three variables better fit a three-factor model then they did a single-factor model. In a second set of analyses, Brooke et al. demonstrated that the correlations between seven other variables and the three affective responses were not uniform, thereby providing additional evidence for the discriminant validity of the measures.

The purpose of the present study was to present a constructive replication of Brooke et al.'s (1988) study with data drawn from two different employee populations. We also investigated the relationship between job involvement, job satisfaction, and organizational commitment and correlates different from those that Brooke et al. used in order to broaden the scope of the collective findings. Given the number of claims that measures of these three variables lack discriminant validity, it is important to replicate Brooke et al.'s findings and to extend them to different populations and additional correlates.

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Method

Participants

Bus drivers. These data were drawn from a larger study conducted by Mathieu and Kohler (1990). Transit bus drivers (N = 194) were randomly sampled from a large city in the midwestern United States; they completed a survey during paid working hours. This sample was 88.6% male and 79.4% White, with an average age of about 45 years. Drivers' mean tenure with the organization was 10 years.

Engineers. These data were drawn from a larger study conducted by Farr, Enscore, Steiner, and Kozlowski (1984). Engineers (N = 483; most were male) were sampled from seven different organizations and represented a variety of engineering fields (e.g., chemical, electrical, etc.). The engineers volunteered to complete the survey instruments during normal working hours. In addition, performance appraisal information was collected from the engineers' supervisors (N = 220) and paired with the survey responses. Missing data reduced the sample to 311 (65%), which constituted the sample examined in this study. The average age of the study sample was 37 years, and about one third had earned a graduate degree. The engineers averaged 5.95 years in their current positions and 11.30 years with their current companies.

Measures

Bus drivers. Multi-item measures were used to assess the three affective responses as well as five correlate scales. In addition, drivers' sex (male = 0, female = 1), number of children, marital status (unmarried = 0, married = 1), and seniority (higher values indicating lower seniority) were measured with single items.

Organizational commitment was assessed with the 9-item short form of Porter, Steers, Mowday, and Boulian's (1974) scale (α = .88). Job involvement was measured with 6 items selected from Lodahl and Kejner's (1965) scale (α = .76). Job satisfaction was assessed with the 20-item version (α = .89) of the Minnesota Satisfaction Questionnaire (Weiss, Dawes, England, & Lofquist, 1967).

Role strain was assessed with 12 items selected from House, Schuler, and Levanoni (1983). Six items tapped role conflict, and the other 6

items measured role ambiguity. As a composite, the 12 items yielded an alpha of .85. Job scope was measured with 15 items, drawn from Stone (1974) and Sims, Szilagyi, and Keller (1976), that assessed task identity, skill variety, autonomy, feedback, and interaction facilitation ($\alpha = .79$). Garage pride represents the extent to which drivers are proud of the garage in which they work and was assessed with 6 items ($\alpha = .74$) adapted from Jones and James (1979). Job tension represents the extent to which factors related to drivers' jobs affect their health and well being. It was measured with a 7-item scale ($\alpha = .84$) drawn from House and Rizzo (1972). Finally, human resource management represents drivers' perceptions of the extent to which the company (a) shares information with drivers, (b) involves affected employees in decision making, and (c) makes work assignments and other personnel-related decisions in a fair and equitable manner. Fourteen items, adapted from Taylor and Bowers (1972), were used to assess this variable ($\alpha = .90$).

Engineers. Engineers' education level, position tenure, and organizational tenure (in years), and age were each assessed with one item. Organizational commitment was assessed with the 15-item version of Porter et al.'s (1974) scale ($\alpha = .87$). Job involvement was again measured with 6 items selected from Lodahl and Kejner's (1965) scale ($\alpha = .73$). Job satisfaction was assessed with a 15-item scale ($\alpha = .88$) developed by Hackman and Oldham (1974). Job scope was measured with 35 items, adapted from Sims et al. (1976) and Withey, Daft, and Cooper (1983), that assessed autonomy, feedback, task identity, task interdependence, outcome certainty, variety, and dealing with others ($\alpha = .83$). Self- and supervisor performance ratings were collected with 13 behaviorally anchored rating scales that assessed such dimensions as technical communication, job knowledge, problem solving abilities, and responding to change. These ratings exhibited fairly high intercorrelations within both the self- and the supervisor ratings ($\alpha = .81$ and .93, respectively).

Analyses

Following the procedures outlined by Brooke et al. (1988), we tested the hypotheses by using each sample correlation matrix separately. The correlation matrix, means, and standard deviations are presented in Appendixes A and B for the engineer and bus driver samples, respectively. Although analysis of sample correlations can yield results different from analysis of covariance matrices in some instances (cf. Cudek, 1989), they were identical in the present study. Results from the correlation analyses are reported for ease of interpretation. Three indicators were established for each multi-item measure by first fitting a single factor solution to each set of items and then averaging the items with highest and lowest loadings to form the first indicator, averaging the items with the next highest and lowest loadings to form the second indicator, and so forth until all items were assigned to one of the three indicators for each variable. This procedure was necessary to reduce the number of parameters estimated in the measurement models. In effect, this strategy reduced the scale items to three parallel indicators of each construct, in much the same manner that parallel test forms are developed (see Nunnally, 1978). The extent to which the three indicators adequately tapped the more general underlying constructs (e.g., organizational commitment, job scope, role strain, etc.) was then assessed by fitting the confirmatory factor analysis models.

Two sets of LISREL VI analyses (Jöreskog & Sörbom, 1986) were performed to test for discriminant validity. The first set of analyses involved a comparison of the relative fit of three-, two-, and single-factor measurement models. The three-factor models placed the three indicators of organizational commitment, job involvement, and job satisfaction on separate latent factors. The three two-factor models were established by forcing the three indicators of two constructs to a single factor and placing the three indicators from the remaining construct on a second factor. The single-factor model forced all nine indicators onto a single latent factor. The fit of each measurement model was assessed with three indices: (a) the chi-square/degree of freedom ratio; (b) the goodness-of-fit (GFI) index; and (c) the root-mean-square residual (rmsr). The chi-square statistic must be interpreted cautiously because it is sensitive to sample size, and therefore we used the ratio of the model chi-square to degrees of freedom as another fit index. Hoetler (1983) suggested that a ratio of less than 2.0 indicates a fairly good fit for the hypothesized model. The chi-square statistic is useful, however, for comparing different nested models (Bentler & Bonnet, 1980), and we used the chi-square difference test to evaluate the relative fit of the three-, two-, and single-factor models. In addition, although there are no statistical distributions for the GFI or rmsr indices, common practice suggests that the GFI should exceed .90 and that the rmsr should be below .05 (in correlation metric) for the model *not* to be rejected.

The second set of LISREL analyses examined the relationship between a set of correlates and commitment, job satisfaction, and job involvement. This was accomplished by comparing the relative fit between two models: one in which the relationships among the three variables were freely estimated, and one in which the relationships between each correlate and the three variables were specified as being equal. A significant chi-square difference between the two models provides evidence to reject the null hypotheses that the correlates relate uniformly to the three variables (see Brooke et al., 1988, pp. 141–142, for a more detailed description of this analytic procedure).

Results

Measurement Model

Bus drivers. The first analysis fit the indicators for organizational commitment, job satisfaction, and job involvement (three for each) to a single-factor model. The results of this analysis revealed a fairly poor fit to the data: $\chi^2(27, N = 194) = 226.58$, $p < .001$; $\chi^2/df = 8.39$; GFI = .755; and rmsr = .087. The three-factor model fit the data quite well: $\chi^2(24, N = 194) = 30.14$, *ns;* $\chi^2/df = 1.26$; GFI = .966; and rmsr = .032. The chi-square difference test computed between the two models indicated a significantly better fit, $\chi^2(3, N = 194) = 196.44$, $p < .001$, for the three-factor model than for the single-factor model. The estimates of the factor loadings for each variable were all statistically significant ($p < .001$) and were greater than .72 in the three-factor model. In addition, comparisons between the three-factor model and each of the two-factor models revealed a statistically significant ($p < .01$) better fit for the three-factor model in each instance. The correlations among the latent variables were .733 ($p < .001$) between organizational commitment and job involvement, .784 ($p < .001$) between organizational commitment and job satisfaction, and .592 ($p < .001$) between job satisfaction and job involvement.

Engineers. The nine indicators of organizational commitment, job satisfaction, and job involvement were also fit to the three-, two-, and single-factor models using the engineer data. The single-factor model exhibited a poor fit to the data: $\chi^2(27, N = 311) = 471.62$, $p < .001$; $\chi^2/df = 17.47$; GFI = .705; and rmsr = .138. The three-factor model fit the data quite well: $\chi^2(24, N = 311) = 32.59$, *ns;* $\chi^2/df = 1.36$; GFI = .978; and rmsr = .028. The chi-square difference test computed between the two models indicated a significantly better fit, $\chi^2(3, N = 311) = 439.03$, $p < .001$, for the three-factor model. The estimates of the factor loadings for the indicators of each variable were all statistically

significant ($p < .001$) and greater than .65. In addition, comparisons between the three-factor model and each of the two-factor models yielded a statistically significant ($p < .01$) better fit for the three-factor model in each instance. The correlations among the latent variables were .450 ($p < .001$) between organizational commitment and job involvement, .697 ($p < .001$) between organizational commitment and job satisfaction, and .275 ($p < .001$) between job satisfaction and job involvement.

Correlates Analysis

Bus drivers. The estimated correlations between nine correlates and the three latent affective reactions are presented in Table 1. The LISREL model that freely estimated the correlations yielded a reasonable fit to the data, meeting the chi-square/degree of freedom and rmsr criteria: $\chi^2(292, N = 194) = 371.89$, $p < .001$; $\chi^2/df = 1.27$; GFI = .872; and rmsr = .041. Furthermore, the LISREL model that constrained the relationship between each correlate and the three affective responses to be equal yielded a significantly poorer fit, χ^2 difference = 76.20, $df = 18$, $N = 194$, $p < .01$, to the data: $\chi^2(310, N = 194) = 448.09$, $p < .001$; $\chi^2/df = 1.45$; GFI = .860; and rmsr = .067.

To better identify the nature of the different relationships among the nine correlates and organizational commitment, job satisfaction, and job involvement, we performed a series of pairwise comparisons that tested the significance of the difference between related correlations (cf. Cohen & Cohen, 1975, p. 53). As illustrated in Table 1, the magnitudes of the correlations between role strain, job scope, job tension, and perceptions of human resource management and the three affective reactions all differed significantly. The correlations between garage pride and the three variables differed on only one comparison, and number of children, marital status, sex, and seniority exhibited no differential relationships with the three affective responses.

Engineers. The estimated correlations between seven correlates and the three latent affective reactions are presented in Table 2 for the engineering sample. The LISREL model that freely estimated the correlations yielded a good fit to the data: $\chi^2(172, N = 311) = 289.02$, $p < .001$; $\chi^2/df = 1.68$; GFI = .924; and rmsr = .038. In comparison, the LISREL model that constrained the relationship between each correlate and the three affective responses to be equal yielded a significantly worse fit, χ^2 difference = 60.78, $df = 14$, $N = 311$, $p < .001$, than the model that included the equality constraints: $\chi^2(186, N = 311) = 349.80$, $p < .001$; $\chi^2/df = 1.88$; GFI = .910; and rmsr = .061.

The results of the pairwise comparisons (see Table 2) illustrate that job scope was the only correlate that related differentially to all three variables. Supervisor performance ratings, position tenure, organizational tenure, and age did, however, each differ significantly on one comparison. Only self-ratings of performance and education level correlated consistently across the three variables.

Table 1
LISREL Estimates of Relations Between Correlates and Organizational Commitment, Job Involvement, and Job Satisfaction in the Bus Driver Sample

Correlate	Organizational commitment	Job involvement	Job satisfaction
Role strain	$-.618_a$	$-.387_b$	$-.774_c$
Job scope	$.554_a$	$.338_b$	$.660_c$
Garage pride	$.442_a$	$.125_b$	$.385_a$
Job tension	$-.506_a$	$-.314_b$	$-.599_c$
Human resource management	$.666_a$	$.408_b$	$.732_c$
Sex[a]	$-.055_a$	$-.129_a$	$.000_a$
Children	$.004_a$	$-.093_a$	$.003_a$
Marital status[b]	$.079_a$	$.053_a$	$.040_a$
Seniority[c]	$-.155_a$	$-.162_a$	$-.092_a$

Note. $N = 194$. Correlations that *do not* share a common subscript within each row differ significantly ($p < .05$) from one another. Correlations $\geq |.15|$ differ significantly from zero.
[a] 0 = male, 1 = female. [b] 0 = not married, 1 = married. [c] Higher values indicate lower seniority.

Table 2
LISREL Estimates of Relations Between Correlates and Organizational Commitment, Job Involvement, and Job Satisfaction in the Engineer Sample

Correlate	Organizational commitment	Job involvement	Job satisfaction
Job scope	$.509_a$	$.235_b$	$.637_c$
Supervisor performance appraisal	$.234_a$	$.223_a$	$.351_b$
Self-performance-appraisal	$.150_a$	$.192_a$	$.106_a$
Education	$.070_a$	$.175_a$	$.095_a$
Position tenure	$.067_a$	$.239_b$	$.030_a$
Organizational tenure	$.114_a$	$.193_a$	$.013_b$
Age	$.146_a$	$.191_a$	$-.006_b$

Note. $N = 311$. Correlations that *do not* share a common subscript within each row differ significantly ($p < .05$) from one another. Correlations $\geq |.14|$ differ significantly from zero.

Discussion

The present results replicate and extend the findings of Brooke et al. (1988). The results of the LISREL analyses, performed separately on survey responses of employees sampled from two different populations, were comparable and provided evidence for the discriminant validity of the organizational commitment, job satisfaction, and job involvement measures. First, comparisons of the relative fits of three-, two-, and single-factor models illustrated that indicators of organizational commitment, job satisfaction, and job involvement were best represented by the three-factor solution. Furthermore, LISREL model comparisons of the relationships among various correlates and the affective responses (with and without equality constraints) rejected the null hypothesis that the correlations with the three variables were uniform. Pairwise comparisons of the magnitude of correlations with the three affective responses yielded significant differences between at least one pair for five of the nine correlates in the bus driver sample and for five of the seven correlates in the engineer sample.

The pattern of correlations that Brooke et al. (1988) obtained between role stress (strain) and the three affective responses was

identical to the pattern we found with the bus driver sample. Also, the work-related affective responses exhibited stronger relationships with other work-related variables than they did with demographic variables; our findings are again comparable to those of Brooke et al.

The variable of job scope was common to both the bus driver and engineer samples in the present research. The pattern of its relationship with the three affective responses was consistent across the samples, yielding the highest correlations with job satisfaction, followed by organizational commitment and job involvement. In both instances, all three correlations were significantly different from zero, yet their magnitudes also differed significantly.

Despite the varied evidence for discriminant validity among measures of the three affective responses, fairly high correlations among the latent variables were obtained, particularly in the bus driver sample. To some extent, these correlations may be inflated by method variance because all were measured with a single survey. In addition, the magnitudes of these relationships are similar to those found in a recent meta-analysis of variables related to organizational commitment (Mathieu & Zajac, 1990). Mathieu and Zajac obtained an average corrected correlation of .44 between organizational commitment and job involvement across 20 studies and an average corrected correlation of .53 between organizational commitment and overall job satisfaction across 43 studies. Nevertheless, correlations in the .60s and .70s are likely to pose multicollinearity problems in regression equations or causal models that include two or three of these variables. Mathieu and Zajac found lower average corrected correlations between organizational commitment and satisfaction with several more specific aspects of the job (e.g., pay, co-workers, etc.). Thus, researchers who wish to include measures of both job satisfaction and organizational commitment in some predictive equation may want to employ measures of satisfaction with particular aspects of the job to lessen multicollinearity problems.

In summary, the results of the present study, in conjunction with those of Brooke et al. (1988), provide evidence for the discriminant validity of organizational commitment, job satisfaction, and job involvement among employees sampled from three different populations and as related to a wide variety of correlates. Future research should be designed to investigate the common as well as unique antecedents of these variables and to examine how they jointly influence employees' work- and nonwork-related behaviors.

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Appendix A

Correlations Between Indicator Variables in the Engineer Sample

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1. OC1	—																					
2. OC2	.76	—																				
3. OC3	.67	.68	—																			
4. JI1	.26	.20	.22	—																		
5. JI2	.28	.25	.17	.43	—																	
6. JI3	.34	.33	.26	.52	.52	—																
7. SAT1	.57	.57	.55	.09	.20	.21	—															
8. SAT2	.55	.53	.55	.16	.20	.21	.84	—														
9. SAT3	.48	.46	.49	.15	.23	.21	.79	.71	—													
10. JS1	.36	.31	.31	.14	.13	.16	.46	.42	.48	—												
11. JS2	.42	.36	.38	.15	.12	.14	.51	.50	.50	.70	—											
12. JS3	.32	.34	.37	.11	.13	.13	.47	.46	.46	.65	.64	—										
13. SELF1	.21	.19	.13	.14	.18	.15	.31	.29	.31	.32	.50	.10	—									
14. SELF2	.21	.17	.10	.14	.16	.15	.25	.23	.29	.37	.25	.17	.81	—								
15. SELF3	.22	.18	.12	.15	.14	.12	.33	.29	.31	.39	.29	.15	.82	.82	—							
16. SUPR1	.15	.13	.02	.23	.13	.18	.09	.07	.04	.19	.16	.08	.23	.15	.14	—						
17. SUPR2	.16	.09	−.01	.17	.07	.05	.09	.09	.07	.25	.24	.16	.22	.28	.19	.59	—					
18. SUPR3	.14	.09	−.01	.13	.04	.06	.07	.05	.07	.20	.17	.09	.22	.19	.23	.59	.62	—				
19. Education	.06	.09	.01	.07	.11	.16	.09	.10	.04	.14	.04	.05	.20	.19	.15	.15	.17	.15	—			
20. POSTEN	.03	.06	.10	.17	.19	.17	.02	.01	.10	.15	.04	.09	.03	.05	.06	.10	.16	.07	.10	—		
21. ORGTEN	.10	.09	.10	.10	.16	.15	−.00	.02	.04	.12	.05	−.01	.03	.03	.05	.00	.18	.02	.05	.52	—	
22. Age	.14	.10	.12	.07	.15	.17	−.01	.01	−.00	.12	.03	.06	.10	.01	.12	.06	.18	.04	.07	.46	.80	—
M	5.58	4.89	3.76	4.35	3.82	3.87	5.19	5.07	5.14	3.32	3.44	3.14	6.70	6.29	6.96	6.45	6.25	6.69	1.60	5.95	11.30	37.32
SD	0.89	1.00	1.11	1.10	1.31	1.11	0.86	0.88	0.89	0.43	0.40	0.41	0.85	0.92	0.77	1.11	1.11	1.09	1.05	6.18	8.62	9.92

Note. $N = 311$. OC = Organizational Commitment; JI = Job Involvement; SAT = Job Satisfaction; JS = Job Scope; SELF = Self Ratings of Performance; SUPR = Supervisor Rating of Performance; POSTEN = Position Tenure; ORGTEN = Organization Tenure.

Appendix B

Correlations Between Indicator Variables in the Bus Driver Sample

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. OC1	—												
2. OC2	.73	—											
3. OC3	.73	.78	—										
4. JI1	.41	.50	.48	—									
5. JI2	.50	.54	.54	.59	—								
6. JI3	.43	.47	.42	.59	.54	—							
7. SAT1	.57	.58	.59	.34	.45	.36	—						
8. SAT2	.57	.62	.64	.47	.50	.36	.75	—					
9. SAT3	.59	.60	.60	.32	.43	.30	.79	.77	—				
10. RS1	−.44	−.46	−.45	−.19	−.32	−.26	−.60	−.51	−.62	—			
11. RS2	−.41	−.49	−.46	−.16	−.35	−.26	−.59	−.57	−.59	.73	—		
12. RS3	−.36	−.45	−.44	−.13	−.31	−.20	−.50	−.50	−.56	.61	.69	—	
13. JS1	.25	.31	.32	.19	.16	.21	.45	.32	.39	−.28	−.27	−.17	—
14. JS2	.42	.42	.44	.17	.26	.20	.58	.48	.52	−.41	−.41	−.30	.62
15. JS3	.38	.39	.38	.23	.24	.21	.51	.40	.43	−.40	−.37	−.32	.58
16. GP1	.21	.21	.23	.05	.06	.05	.19	.16	.21	−.21	−.22	−.16	.21
17. GP2	.33	.29	.32	.08	.15	.09	.28	.32	.32	−.31	−.25	−.30	.08
18. GP3	.28	.28	.28	.00	.09	.08	.23	.24	.27	−.27	−.25	−.24	.13
19. JT1	−.22	−.32	−.32	−.14	−.28	−.10	−.41	−.36	−.39	.32	.39	.36	−.14
20. JT2	−.31	−.38	−.41	−.18	−.19	−.09	−.41	−.45	−.49	.37	.38	.35	−.24
21. JT3	−.34	−.41	−.42	−.24	−.33	−.14	−.41	−.46	−.50	.37	.44	.37	−.15
22. HR1	.53	.56	.52	.30	.34	.25	−.54	−.57	.66	−.57	−.55	−.52	.26
23. HR2	.48	.56	.50	.18	.27	.25	.55	.54	.62	−.61	−.63	−.55	.34
24. HR3	.41	.53	.46	.28	.34	.36	.51	.49	.59	−.59	−.57	−.52	.32
25. Sex	−.03	−.05	−.05	−.10	−.12	−.06	.03	.00	−.03	.02	−.01	.02	.12
26. CHD	.05	−.02	.04	−.12	.02	−.12	.03	−.05	.02	.03	.08	.00	.12
27. MAR	.05	.05	.10	.08	−.01	.06	.03	.09	.00	.01	.02	.03	−.01
28. SEN	−.16	−.11	−.14	−.06	−.15	−.17	−.06	−.14	−.05	−.01	.11	.11	.04
M	3.17	3.54	3.55	3.03	2.90	2.89	3.45	3.82	3.11	2.86	2.79	2.50	2.80
SD	.88	.76	.80	.76	.89	.75	.53	.54	.58	.78	.72	.73	.68

Note. $N = 194$. OC = organizational commitment; JI = job involvement; SAT = job satisfaction; RS = role strain; JS = job scope; GP = group process; JT = job tension; HR = human resource management; CHD = number of children; MAR = marital status (0 = not married; 1 = married); and SEN = seniority status (lower values indicate higher seniority).

14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
—														
.70	—													
.15	.15	—												
.18	.09	.47	—											
.12	.05	.57	.56	—										
−.28	−.20	−.09	−.17	−.19	—									
−.35	−.25	−.16	−.26	−.25	.66	—								
−.34	−.19	−.14	−.36	−.25	.67	.72	—							
.37	.34	.32	.46	.35	−.27	−.37	−.36	—						
.43	.42	.38	.44	.41	−.26	−.33	−.32	.76	—					
.38	.38	.29	.41	.37	−.26	−.29	−.36	.73	.80	—				
.03	.00	.13	−.07	.05	.01	.09	.16	−.07	−.07	−.14	—			
.06	.11	−.04	.01	−.08	.10	.00	.03	−.00	−.02	.02	−.03	—		
−.04	.09	−.02	−.08	−.01	−.12	−.06	.00	.05	.10	.06	−.08	.02	—	
−.02	.13	−.09	−.13	−.09	.09	.07	.09	−.09	−.12	−.05	.07	.04	−.05	—
2.50	3.12	3.09	2.97	3.28	2.58	2.54	2.96	2.92	2.74	2.44	0.11	1.21	3.03	640.38
.74	.71	.70	.77	.61	.88	.84	.87	.80	.70	.74	0.32	1.42	1.16	325.42

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