

## A Comparison of Self-and Superior-Appraisals of Divisional Level Managers' Performance in Selected Australian companies

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### ABSTRACT

*This study reported the results of a comparison between self- and superior-appraisals of divisional level managers' performance in selected Australian manufacturing companies, in terms of four psychometric properties: leniency errors, halo effects, convergent validity and discriminant validity. Significant differences existed between the managers' and their superiors' appraisals based on these criteria. The findings from this study provided further evidence on the performance appraisals issue and suggested that the exclusive use of the self-appraisal method in performance evaluation research should be viewed with caution. Further research using different settings and at different organisational levels would be warranted.*

### ABSTRACT

*Kajian ini melaporkan keputusan perbandingan diantara penilaian diri dengan penilaian ketua ke atas prestasi pengurus-pengurus separa bahagian di dalam syarikat-syarikat pembuatan Australia, dari segi empat Psikometrik, ia itu ralat kesan halo, kesahan konvergen dan kesahan diskriminan Terdapat perbezaan bermakna di antara penilaian pengurus-pengurus dengan penilaian ketua-ketua mereka berdasarkan kriteria-kriteria berkenaan. Penemuan kajian ini menambahkan lagi bukti ke atas isu-isu penilaian prestasi dan mencadangkan yang penggunaan exclusive kaedah penilaian diri dalam penyelidikan penilaian prestasi perlu digunakan dengan berhati-hati. Kajian lanjut dianjurkan dengan menggunakan situasi dan para organisasi yang berlainan.*

### INTRODUCTION

In performance evaluation research managers are commonly asked to subjectively rate their individual performances on scales corresponding to a set of predetermined performance criteria. Underpinning the self-rating method is the theory of self-perception. This theory argues that individuals can often be active observers of their own behaviors (Bem, 1967; 1972). Also, each individual possesses an extensive data base concerning that individual than anyone else (Jones and Nisbett, 1971). Researchers tend to use the self-rating method over other methods, such as superior- and peer-ratings, to obtain

performance information because it is difficult to collect properly matched objective data in a cross-organizational study compared to self-rating data (Govindarajan, 1984), and also because Heneman's findings (1974) have often been cited as an authoritative source supporting the self-rating method (see, for example, Govindarajan, 1984; Brownell and McInnes, 1986). Heneman (1974) found a high correlation between self- and superior-ratings, and suggested that "self-ratings of managerial performance hold promise as a means for expanding the scope of research on managerial performance" (p 638).

However, accuracy of self-rating may be impaired in several ways. According to Campbell and Lee [1988] the discrepancy between self- and superior-ratings could be attributed to the superior differences in the nature and extent of three constraints encountered by the self-rater and superior. For example, the superior might have less knowledge about job requirements, hence was faced with higher information constraints. The superior might focus on performance attributes which are person-oriented, whereas the self-rater might focus on situation-oriented attributes, leading to differences in their cognitive constraints. Finally, the superior might also be subjected to affective constraints such as feelings of threat, friendship and interdependence when making an evaluation, whereas the self-rater might be more affected by self-esteem (DeNisi et al. 1977; Jones 1973), self-enhancement (Mabe and West, 1982) and a tendency to present himself to others in socially desirable ways (Shrauger and Osberg, 1981).

The results from past studies offered inconsistent evidence about the convergence between self- and superior-ratings. This has led some researchers to express reservations about the usefulness of self-ratings, except as a vehicle for personal development (Campbell and Lee, 1988). So as to provide further insights on the issue, this paper reported the findings of an empirical study which tested for leniency errors, halo effects, convergent validity and discriminant validity between self- and superior-ratings of divisional level managers' performance in selected Australian manufacturing companies.

#### LENIENCY ERRORS

Leniency errors occur when self- and superior-ratings are significantly different. Thornton (1968) investigated the relationship between the self- and superior-perceptions of first-level supervisors. He found leniency of self-ratings relative to superior-ratings. Greater leniency effects of self-ratings were also reported in performance studies of technical employees (Klimoski and London, 1974) and managerial and professional employees (Holzbach, 1978). In contrast, Heneman (1974) found mean self-ratings were significantly lower than the corresponding superior-ratings for three of nine performance dimensions, indicating greater leniency errors for superior-ratings. If leniency errors in fact exist, this may suggest that either self-raters could have included

dimensions of performance omitted by superior-ratings or there are perceptual differences on the relative importance of various aspects of the subordinates' job.

#### HALO EFFECTS

Halo is the tendency by a rater to allow strong positive or negative impressions formed early in a series of observations to influence ratings on all subsequent observations. Thus, instead of evaluating according to the distinct dimensions of performance, the rater evaluates based on a global or overall judgment, giving rise to rater bias (Holzbach, 1978). Halo error is measured by the magnitude of intercorrelations among performance dimensions for each rating source (self and superior). Heneman (1974) found the intercorrelation for self-ratings was significantly less than the corresponding intercorrelation for superior ratings, suggesting greater halo effects for superior ratings. In other words, when evaluating the managers, superiors took a "global" view, unlike when the managers rated themselves.

#### CONVERGENT VALIDITY AND DISCRIMINANT VALIDITY

Convergent validity is measured by the extent of agreement between self- and superior-ratings on the same performance traits or dimensions. A lack of significant agreement indicates that the different rating methods are measuring different performance traits and this implies a lack of validity in at least one of the methods (that is, self- or superior-ratings).

Discriminant validity refers to the distinctiveness of each of the performance traits, so a lack of significant agreement between different rating methods on different traits indicates that there is discriminant validity.

Convergent and discriminant validity can be assessed using the multitrait-multimethod (MTMM) matrix suggested by Campbell and Fiske (1959). This matrix technique involves analysis of performance ratings data obtained from self- and superior-ratings on a number of performance items in the questionnaire instrument. The self- and superior-rating sources constitute the multimethods and the performance items in the rating instrument the multitraits. The procedure has been employed to overcome the limitation of using a single-rater single-trait approach by giving recognition to the fact that, while a test can be constructed to measure an underlying construct of interest, scores on that test may also be affected by the testing method used. By analysing more than one trait and more than one method simultaneously, this enables the examination of variance that can be ascribed to traits (trait variance) and the variance that is ascribed to methods (method variance). The MTMM thus provides a better understanding about the meaning of the performance ratings than could be obtained by a single-rater single-trait approach.

## METHOD

### SUBJECTS

A sample of companies was selected from a business directory to whom initial letters were sent to seek their participation in this research. The selection was based on two criteria: all companies selected were from the manufacturing industry and employed three hundred or more people. Since the unit of analysis was the first-level managers immediately below the corporate office senior executives, it is important that a company should have several divisions. Also, the participating companies would be visited for data collection so the sample was confined to the Metropolitan Sydney and Wollongong areas.

Interviews were arranged with managing directors (or general managers) of the participating companies during which the objective of this research was explained, at the same time the researcher was able to gain a basic understanding of each participating company's business background, organization structure and performance evaluation system characteristics. In this way the level of division managers for the purpose of self-rating was identified, as well as the names of each divisional managers and their immediate superiors.

### QUESTIONNAIRE AND ADMINISTRATION

The MTMM procedure requires a researcher to collect measures of at least three different traits or dimensions of performance, using at least two different rating methods. Managerial performance for this study was measured on eight performance dimensions using an instrument developed by Mahoney et al (1963), Mahoney (1964) and adopted by Heneman (1974). Moreover, this instrument has frequently been used in performance evaluation research (Brownell, 1982; Brownell and McInnes, 1986). Respondents were asked to rate performance on a 7-point Likert-scale format on each of the eight management functions. An overall effectiveness question was also included. One reason for this overall rating was to overcome the halo effect that often arises from overall performance when other ratings are given. Using the two rating methods (self- and superior-ratings) to measure each of the eight performance dimensions, this produced an 8 (trait) x 2 (method) MTMM matrix.

Two sets of questionnaire (one for divisional managers and the other their immediate superiors) were prepared and pilot-tested. During the interview the superior questionnaire was given to each senior manager for completion, and the subordinate questionnaires were also handed to the senior managers for distribution to their immediate subordinate managers. Both sets of questionnaires contained questions regarding the performance of the subordinate managers (see Appendix A). Responses to the superior and

subordinate questionnaires provided the ratings data for the purpose of this study. Confidentiality of all responses was assured. Questionnaires were returned directly by the individual managers to this researcher using the self-addressed and prepaid envelopes provided.

#### ANALYSIS OF RESPONSES

A total of 108 subordinate questionnaires and 23 superior questionnaires were distributed to 21 companies contacted by letter or telephone. Questionnaires returned consisted of 81 from division managers and 18 from their immediate superiors, giving response rates of 75 percent and 78 percent respectively. Of the 81 subordinate questionnaires received, 78 were fully completed and useable, and 64 of these could be matched with responses to the superior questionnaires. In other words, a total of 64 pairs of self-ratings and superior-ratings were obtained.

### RESULTS AND DISCUSSION

#### LENIENCY ERRORS

TABLE 1. Means, Standard Deviations and Tests for Leniency Effects

	Self-Rating		Superior-Rating	
	Mean	SD	Mean	SD
Planning	5.74*	0.82	5.45	1.01
Investigating	5.38	1.15	5.09	1.02
Coordinating	5.64**	1.06	5.11	1.06
Evaluating	5.48*	1.15	5.20	0.84
Supervising	6.05**	0.84	5.45	0.92
Staffing	5.61**	0.99	5.16	0.82
Negotiating	5.61	1.06	5.4	0.78
Representing	4.72	1.46	4.86	1.10

Tests of mean differences: \*  $p < .05$  \*\*  $p < .01$

Table 1 presented the means and standard deviations for the eight performance dimensions. In seven out of eight mean values, manager-ratings were higher than superior-ratings. Paired t-tests for correlated samples yielded significant differences for planning, coordinating, evaluating, supervising and staffing. These results suggested that leniency effects do exist in performance ratings, with manager-ratings tending to be more lenient than superior-ratings.

#### MTMM ANALYSIS

Table 2 presented the MTMM matrix which provides three types of information. First, it shows the correlations between measures of different performance traits assessed by each rating method. These are represented by the triangles in the upper left for self-ratings and lower right for superior ratings, described as monomethod-heterotrait triangles. Second, MTMM shows the correlations between measures of different performance traits assessed by different rating methods. These are represented by the square matrix (lower left), which is the heteromethod-heterotrait block. Third, MTMM shows the correlations between measures of the same trait assessed by different rating methods. These are termed heteromethod-monotrait values, and are indicated by the circled values along the diagonal of the square matrix.

HALO EFFECTS

TABLE 2. Multitrait- Multimethod Matrix for Managerial Performance Appraisals

Method	Self-Rating									Superior-Rating								
	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
Self-Rating	1																	
	2	33																
	3	37	46															
	4	30	49	66														
	5	50	21	48	40													
	6	43	23	36	29	59												
	7	54	31	47	34	52	59											
	8	35	12	20	33	41	35	53										
	9																	
Superior-Rating	1	<u>-21</u>	<u>-22</u>	<u>-04</u>	<u>00</u>	<u>-06</u>	<u>-14</u>	<u>-13</u>	<u>02</u>	:								
	2	<u>-12</u>	<u>-15</u>	<u>02</u>	<u>-03</u>	<u>-04</u>	<u>-06</u>	<u>-01</u>	<u>-01</u>	:	50							
	3	<u>-18</u>	<u>00</u>	<u>-06</u>	<u>-11</u>	<u>-13</u>	<u>-11</u>	<u>-16</u>	<u>-26</u>	:	52	12						
	4	<u>02</u>	<u>00</u>	<u>10</u>	<u>08</u>	<u>08</u>	<u>00</u>	<u>02</u>	<u>-26</u>	:	40	40	39					
	5	<u>07</u>	<u>04</u>	<u>04</u>	<u>00</u>	<u>07</u>	<u>02</u>	<u>00</u>	<u>-07</u>	:	39	04	63	51				
	6	<u>21</u>	<u>-12</u>	<u>18</u>	<u>07</u>	<u>20</u>	<u>14</u>	<u>22</u>	<u>12</u>	:	39	44	24	48	45			
	7	<u>07</u>	<u>04</u>	<u>10</u>	<u>09</u>	<u>06</u>	<u>11</u>	<u>12</u>	<u>07</u>	:	12	04	09	26	20	05		
	8	<u>-01</u>	<u>-07</u>	<u>-03</u>	<u>-02</u>	<u>04</u>	<u>-04</u>	<u>10</u>	<u>12</u>	:	06	10	07	04	03	27	23	
	9																	

Note: Decimals are omitted: figures within dotted lines belong to heterotrait-heteromethod triangles: Others represent heterotrait-monomethod triangles.

- (1) Planning (2) Investigating (3) Co-ordinating (4)Evaluating (5) Supervising (6) Staffing
- (7) Negotiating (8) Representing (9) Overall Effectiveness

The possibily of halo effects was tested by comparing the intercorrelations among performance dimensions for manager- and superior-ratings. There were

28 intercorrelations in each of the monomethod-heterotrait triangles in Table 2, resulting in 28 pairs of comparisons (manager-rating vs superior-rating). In 21 of the 28 comparisons, the intercorrelation for manager-ratings exceeded the corresponding intercorrelation for superior-ratings. Sign test showed that this was significant at  $p < .004$ , indicating substantial halo effect for manager-ratings.

#### CONVERGENT VALIDITY

Since convergent validity is evidenced by the correlations between the same performance dimension assessed by different rating groups, this is demonstrated by the validity diagonal entries (circled) of the square matrix which must be positive and significantly different from zero. Table 2 showed that the manager- and superior-ratings did not appear to agree significantly on the validity diagonal to satisfy the condition for convergent validity. Three of the correlations shown on the validity diagonal were in fact negative, and the remaining correlations were quite small. Given that the convergent validity coefficients were not substantially higher, this meant that the performance traits were correlated, and there was a method bias or halo effect.

#### DISCRIMINANT VALIDITY

Two different aspects of discriminant validity are particularly relevant to the present study. First, discriminant validity is evidenced by the correlations in the validity diagonal which should be higher than those correlations in the same column and row in the heteromethod-heterotrait block. In other words, the validity diagonal correlations should be higher than those between different traits assessed by different methods. This test required that each of the 8 convergent validity coefficients was compared with each of the 14 other coefficients, giving a total of 112 possible comparisons. Analysis yielded 69 comparison correlations which met this criterion. A sign test for each performance dimension showed that the number of times the validity coefficient was higher than the appropriate row-column correlations was statistically significant ( $p < .05$ ) for the following performance dimensions: evaluating, supervising, negotiating and representing. The results based on this criterion thus provided partial support to the claim of discriminant validity.

Second, discriminant validity is also demonstrated when the validity diagonal coefficients are higher than those correlations in the monomethod-heterotrait triangles. In other words, discriminant validity exists when the correlations between different measures of the same trait exceed the correlations of different traits by the same methods. For the self-rating method, the validity coefficients were larger in only one out of 56 possible comparisons, and a sign test for each performance dimension revealed the comparisons were not significant for any dimension. For the superior-rating method, 12 out of 56

possible comparisons met the criterion. Again, using a sign test, it was found that the comparisons were not significant for any dimension. Since the results based on the second criterion showed no evidence of discriminant validity, there was a strong possibility that the relationship found between different performance traits as rated by each rater group could be ascribed to the data collection method rather than to any true relationships among the dimensions under consideration. A probable source of this method variance in the present study would be a halo effect, which might have contributed to blurring of the distinctions among the performance dimensions.

## CONCLUSION

This study reported the results of a comparison of self- and superior-ratings of divisional level managers in selected Australian manufacturing companies. The comparisons focused on four psychometric properties: leniency errors, halo effects, convergent validity and discriminant validity. Statistical analyses showed that significant differences exist between the managers' and their superior's ratings in terms of these criteria. For leniency errors, this study found manager-ratings tended to be more lenient than superior-ratings. For halo effects, again substantial halo effects for manager-ratings were noted. In the case of convergent validity, the results indicated no significant agreement between manager- and superior-ratings, suggesting evidence of method bias. Concerning discriminant validity, overall results indicated that this requirement was not fully met, although in one test, there was partial support for discriminant validity. The findings from this study provided further evidence on the performance ratings issue and suggested that the exclusive use of the self-rating method in performance evaluation research should be approached with caution. The lack of conclusive evidence however provided an opportunity for further research in different settings and at different organizational levels.

## Appendix 1

### SUBORDINATE QUESTIONNAIRE Managerial Performance

Listed below are EIGHT management functions. Two questions are addressed in relation to EACH of them:

- (i) How IMPORTANT is the management function compared with the overall duties of your present job?
- (ii) To what EXTENT do you believe you have met your superior's expectation of your performance in carrying out this function?

(Please CIRCLE the relevant NUMBER on EACH of the 7-point scales below)



- (a) **PLANNING:** Determining goals, policies, and courses of action. Work scheduling, budgeting, setting up procedures, setting goals or standards, preparing agendas, programming.

Little or no									Very
Importance	1	2	3	4	5	6	7		Important
Least									Great
Extent	1	2	3	4	5	6	7		Extent

- (b) **INVESTIGATING:** Collecting and preparing information, usually in the form of records, reports, and account inventorying, measuring output, preparing financial statements, recordkeeping, performing research, job analysis.

Little or no									Very
Importance	1	2	3	4	5	6	7		Important
Least									Great
Extent	1	2	3	4	5	6	7		Extent

- (c) **COORDINATING:** Exchanging information with people in the organisation other than subordinates in order to relate and adjust programs. Advising other departments, expediting liaison with other managers, arranging meetings, informing superiors, seeking other departments' cooperation.

Little or no									Very
Importance	1	2	3	4	5	6	7		Important
Least									Great
Extent	1	2	3	4	5	6	7		Extent

- (d) **EVALUATING:** Assessment and appraisal of proposals or of reported or observed performance. Employee appraisals, judging output records, judging financial reports, product inspection, approving requests, judging proposals and suggestions.

Little or no									Very
Importance	1	2	3	4	5	6	7		Important
Least									Great
Extent	1	2	3	4	5	6	7		Extent

- (e) **SUPERVISING:** Directing, leading, and developing subordinates. Counselling subordinates, training subordinates, explaining work rules, assigning work, disciplining, handling complaints of subordinates.

Little or no									Very
Importance	1	2	3	4	5	6	7		Important
Least									Great
Extent	1	2	3	4	5	6	7		Extent

- f) **STAFFING:** Maintaining the work force of a unit or of several unit. College recruiting, employment interviewing, selecting employees, placing employees, promoting employees, transferring employees.

Little or no									Very
Importance	1	2	3	4	5	6	7		Important
Least									Great
Extent	1	2	3	4	5	6	7		Extent

- g) **NEGOTIATING:** Purchasing, selling, or contracting for goods or services. Tax negotiations, contacting supplies, dealing with sales representatives, advertising products, colooctives, advertising products, collective bargaining, selling to dealers or customers.

Little or no									Very
Importance	1	2	3	4	5	6	7		Important
Least									Great
Extent	1	2	3	4	5	6	7		Extent

- (h) **REPRESENTING:** Advancing general organisational interests through speeches, consultation, and contacts with individuals or groups outside the organisation. Public speeches, community drives, news releases, attennding conventions, business club meetings.

Little or no									Very
Importance	1	2	3	4	5	6	7		Important
Least									Great
Extent	1	2	3	4	5	6	7		Extent

- 2 To what EXTENT do you believe your superior's expectation of your OVERALL performance has been met in managing your division/department?

**SUPERIOR QUESTIONNAIRE**  
**Managerial Performance of Subordinate**

Listed below are EIGHT management functions. How SUCCESSFUL do you think your SUBORDINATES is when carrying out EACH of these functions?(Please circle the relevant NUMBER on each of the 7-point scales below)

Name of Company: .....

Name of subordinate's division: .....

- (1) **PLANNING:** Determining goals, policies, and courses of action. Work scheduling, budgeting, setting up procedures, setting goals or standards, preparing agendas, programming.

Very Unsuccessful 1\_\_2\_\_3\_\_4\_\_5\_\_6\_\_7      Very Successful

- (2) INVESTIGATING: Collecting and preparing information, usually in the form of records, reports, and accounts inventorying, measuring output, preparing financial statements, recordkeeping, performing research, job analysis.

Very Unsuccessful 1\_\_2\_\_3\_\_4\_\_5\_\_6\_\_7      Very Successful

- (3) COORDINATING: Exchanging information with people in the organisation other than subordinates in order to relate and adjust programs. Advising other departments, expediting liaison with other managers, arranging meetings, informing superiors, seeking other departments' cooperation.

Very Unsuccessful 1\_\_2\_\_3\_\_4\_\_5\_\_6\_\_7      Very Successful

- (4) EVALUATING: Assessment and appraisal of proposals or of reported or observed performance. Employee appraisals, judging output records, judging financial reports, product inspection, approving requests, judging proposals and suggestions.

Very Unsuccessful 1\_\_2\_\_3\_\_4\_\_5\_\_6\_\_7      Very Successful

- (5) SUPERVISING: Directing, leading, and developing subordinates. Counselling subordinates, training subordinates, explaining work rules, assigning work, disciplining, handling complaints of subordinates.

Very Unsuccessful 1\_\_2\_\_3\_\_4\_\_5\_\_6\_\_7      Very Successful

- (6) STAFFING: Maintaining the work force of a unit or of several units. College recruiting, employment interviewing, selecting employees, placing employees, promoting employees, transferring employees.

Very Unsuccessful 1\_\_2\_\_3\_\_4\_\_5\_\_6\_\_7      Very Successful

- (7) NEGOTIATING: Purchasing, selling, or contracting for goods or services. Tax negotiations, contacting suppliers, dealing with sales representatives, advertising products, collective bargaining, selling to dealers or customers.

Very Unsuccessful 1\_\_2\_\_3\_\_4\_\_5\_\_6\_\_7      Very Successful

- (8) REPRESENTING: Advancing general organisational interests through speeches, consultation, and contacts with individuals or groups outside the organisation.

Public speeches, community drives, news releases, attending conventions, business club meetings.

Very Unsuccessful 1\_\_2\_\_3\_\_4\_\_5\_\_6\_\_7 Very Successful

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