

The Japanese Career Progress Study: A Seven-year Follow Up

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A longitudinal study on the process of managerial career progress was begun in 1972 in one of the largest department store chains in Japan. The study monitored the professional development of a cohort group of 80 newly recruited college graduates over their first three years in the company. Result of the study indicated that both pre-employment selection test results and measured quality of vertical exchanges between the newcomer and his immediate supervisor on the job were predictive of a wide range of career relevant outcomes (Wakabayashi & Minami 1978; Wakabayashi, Minami, Hashimoto, Sano, Graen & Novak, 1980; Wakabayashi, 1980). These results suggest that two managerial progress models developed in America, the *human potential model* developed in the AT&T Management Progress Study (Bray & Grant, 1966; Bray, Campbell & Grant, 1974) and the *vertical exchange model* developed in the Management Role Making Processes Project (Dansereau, Graen & Haga, 1975; Graen & Cashman, 1975; Liden & Graen, 1980) were both generalizable across cultural differences as a means of predicting outcomes of managerial progress in the Japanese organization. The present study examines the predictive validity of an integrated model which combines *human potential* and *vertical exchange* factors. For this purpose follow up data on promotion, salary and bonus seven years later were collected. Results show predictability after seven years for both the vertical exchange model and the integrated model. The implications of these results are discussed.

The human potential model assumes that managerial progress can be explained and predicted on the basis of individual talents (Dunnette, 1971). The managerial assessment center was developed as a procedure to enhance this power of the human potential model (Bray & Grant, 1966; Bray, Campbell & Grant, 1974; Finkle, 1976; Henrichs, 1978). Results of these studies and those of others (Bentz, 1971; Greenwood & McNamara, 1967; Thomson, 1970) indicate that individual talents assessed before or very early in employment can predict career progress outcomes for managers.

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This model, however, pays little attention to the management development opportunities that occur during the formative years in an organization. Berlew and Hall (1966), for example, demonstrated that one important predictor of career success was the experience of a "success syndrome" during the first year. This first year experience remained a significant predictor of later career success even after the effect of individual talents were partialled out. These findings point to the fruitfulness of incorporating developmental opportunities in the study of managerial careers.

A series of longitudinal investigations conducted by Graen and his colleagues focusing upon the developmental opportunities of managers found that the quality of the vertical exchange relationship between manager and his/her immediate superior predicted a number

of career relevant outcomes: (1) leadership attention and support and severity of various job problems (Dansereau, Graen & Haga, 1975), (2) job satisfaction, member contribution to the work unit and job performance rating (Graen & Cashman, 1975; Liden & Graen, 1980), (3) agreement between leader and member on job issues (Graen & Schiemann, 1978), and (4) turnover (Graen & Ginsburgh, 1977; Graen, Liden & Hoel, 1982). These longitudinal study results support the predictive validity of the vertical exchange measure for a wide range of career development outcomes.

Past studies on role making processes tended to focus upon the effect of leader-member exchange relations and to omit the influence of human potential or the interaction between vertical exchange and human potential upon management progress. One may assume that the high quality vertical exchange opportunity is offered only to the most talented members of the unit. Likewise, one may assume that only highly talented members can achieve a high quality exchange relationship with their leaders. However there is very little evidence supporting these assumptions.

Situational Model: A Synthesis In contrast to the traditional single-factor models, the present situational model assumes managerial career progress requires both the talent variables of the human potential model and the exchange variables of the role making model.

Results of the Japanese management progress study (Wakabayashi, 1980; Wakabayashi, Minami, Hashimoto, Sano, Graen & Novak, 1980) indicate that the quality of vertical exchange experienced by the newcomer during the first year in the organization was predictive of the level of organizational commitment, role disillusionment, job needs and problems, and job performance criteria evaluated in the second and third years. In addition, a human potential measure that was a composite of selection tests administered by the company before employment was found to predict job performance. The potential measure also showed a significant correlation ($r = .30$, $p < .01$) with the bonus that newcomers received during the

third year. Finally, the vertical exchange was found to moderate the relationship between human potential and organizational commitment, role disillusionment, job needs, and job problems during the third year. The interaction showed that when the quality of the vertical exchange was high, human potential had low and null correlations with the outcomes, but when the quality of the exchange was low, the correlations between potential and the outcomes were strong and significant.

The above results suggest that both potential and environmental factors (quality of vertical exchange) can make independent contribution to outcomes relevant to career progress. Thus, it is hypothesized that vertical exchange, human potential and their interaction will all contribute significantly to the prediction of career progress outcomes. To test this hypothesis, two sets of criterion data were collected: (1) the amount of bonus and the ratings of job performance and promotability for the 1972-1974 period and (2) the speed of promotion, monthly salary and the amount of bonus received in the 1978 period.

Method

Sample and Setting

In April, 1972, 85 male college graduates started their career in one of the largest department store organizations in Japan. They were all recently graduated from college, had no prior formal employment, and passed the company's employment tests. The average age was 23.6 with more than 80 percent being between 23 and 24. All newcomers started their jobs at the same hierarchical level. Eighty-seven percent earned their bachelor degrees in social sciences and humanities and the remaining 13 percent in engineering, industrial arts or design fields. The latter group of recruits were offered a slightly higher starting salary than the former, but within each category no further pay differentials were observed. All recruits went through the two-month, in-house training. They were given their first formal assignment at either branch stores or main offices. About 70 percent were engaged in sales jobs, while the remaining were assigned to import/export, interior design, personnel, and accounting. A pair composed of a focal newcomer and his supervisor was chosen as the unit of observation. This newcomer-supervisor

unit called a "vertical dyad" (Graen, 1976) was monitored using a questionnaire method at seven different points in time during the first three years of the recruit's career. During this period, all recruits changed their supervisors at least once. Whenever changes occurred, new vertical dyads were identified for further monitoring.

By the end of 1974, 80 recruits (including their supervisors) completed all questionnaires and they were available for the analysis involving 6 different monitoring periods (excluding the first exploratory survey) over three years. No questionnaire survey was conducted since then, but in 1982, updated criterion data were collected from personnel files of the company for the 1978 period. By this point in time, the number of recruits available for the analysis has dropped from 80 to 72 due to voluntary terminations.

Measures

Predictor scales. Five different scales were constructed to be used as predictors (independent variables) in the regression analysis: (1) Vertical Exchange (VE), (2) Human Potential (HP), (3) an interaction term between the two (VE \times HP), (4) University Ranking (UR), and (5) characteristics of the First Job (FJ).

The *vertical exchange* scale was developed based on the English language questionnaire used by Graen & Cashman (1975), and Cashman, Dansereau, Graen & Haga (1976). For the present study, 11 questions were employed to tap the leader-member exchange: approachability and flexibility of the supervisor, his willingness to use his authority to help the newcomer solve problems, clarity of expectations and feedback, the newcomer's latitude to influence his supervisor to change his role situation, and chances to share after-hour social and leisure activities. Both newcomers and their supervisors were asked to respond from their own point of view regarding exchange by using a 4-point scale. An aggregate VE scale was constructed by using the newcomer's report at each monitoring point. This scale was found to have satisfactorily high reliability coefficients (Cronbach's alphas ranging from .87 to .92). Also, test-retest correlation coefficients were computed for all possible combinations of time periods. Fifteen such correlations were produced ranging from .37 (the lowest) to .80 (the highest) with median $r=.60$. All correlations were found significant at the $p<.01$ level (Wakabayashi, 1980). The above results indicated that the VE scale maintained very high internal consistency and good test-retest stability over time. Therefore,

the newcomer's reports for the first three years (from wave 2 to wave 7) on this instrument were aggregated to construct a measure that indicated the average level of vertical exchange that the newcomer experienced during his first three years (1972-1974) in the organization.

The *human potential* scale was constructed by using information derived from the company's procedures for screening applicants for employment. The company's procedures consisted of the following two steps. First, all applicants attended a one-day paper-and-pencil test session. During this session, they completed the incomplete sentences blank (Sano & Makita, 1960), an essay test, and a test of English proficiency. Personnel staff of the company scored and evaluated all tests. The incomplete sentences blank was scored regarding the type of personality and intelligence level by trained company staff with the help of a psychologist. The essay was graded using a 4-point scale; the test of English proficiency was rated using a 100-point scale. About two weeks later, the group of applicants who passed the first-stage screening based on the evaluation of the above test results, academic achievement, a personal history blank and references, were called in for the final selection interview. The interview was conducted by a team of five executives. Interviewers were given test scores and background information on each applicant. Based on this information and an evaluation of applicant's performance in interview session, they generated a group rating for each applicant. A composite potential scale was created using scores on intelligence, essay, English, and the interview. These four scores were standardized with a mean of 50 and a standard deviation 20. Then, a human potential score was computed by summing and dividing the aggregate by four. Intercorrelations among these four subscales were found high and consistent: with correlation coefficients ranging from .17 to .59 (median $r=.38$). It was found that this potential scale had a satisfactory level of internal consistency (Cronbach's $\alpha=.76$) to be used as a predictor for outcomes of the career development process of the newcomer (Wakabayashi, 1980).

An *interaction* term between Vertical Exchange and Human Potential scales were created as a VE \times HP form, by multiplying vertical exchange by human potential scales. This term permits the regression equation to account for a portion of criterion variance by a combination of vertical exchange (VE) and human potential (HP) (Kmenta, 1971). Since the VE \times HP scores will

adjust the effect of HP, the combined term is expected to take a minus sign after the positive effect of HP is accounted for in the regression equation.

Two control variables were used. The first one, called *University Ranking* (UR), was created to evaluate the quality of universities from which newcomers graduated. It was found that 72 newcomers represented 22 different universities that were located either in the Tokyo or the Osaka area. Two graduate students and one faculty member rated these universities using a 4-point scale (from rank 1 to rank 4) with respect to its prestige believed to be attributed by the general public. Three raters agreed quite well. Agreement measures calculated in terms of correlation coefficients among raters were .92, .90, and .88. The university ranking represents the quality of education provided, quality of the student body and quality of experiences by which students become socialized into business careers in Japan (Wakabayashi, Graen, Sano, Minami & Hashimoto, 1977). It is hypothesized that this variable will have a positive effect upon career development outcomes.

The second control variable was created as a dummy variable to account for characteristics of the *First Job* (FJ) to which the newcomer was assigned. Within the company, it was generally believed that starting in a sales jobs in the large branch store would offer the most favorable opportunities to learn the ropes. Based on this information, newcomers' first formal assignments were classified into (a) sales jobs in large branch stores (Tokyo, Osaka and Kyoto Branches), and (b) all others. A value "1" was assigned to the former and "0" to the latter.

Among the five predictor variables, the UR, FJ, and HP scales represent influences that begin operating *before* joining the organization. In other words, they predate career experience in the company. In contrast, the VE scale and the interaction between VE and HP represent influences that begin operating only *after* joining the organization.

Criterion measures. Two sets of criterion measures were available for the analysis. One set included three measures that were collected during the 1972-1974 questionnaire survey period, and the other set consisted of three measures that were collected from company's personnel files of the 1978 period.

The amount of bonus earned by the newcomer during 1974, *Bonus* (1974), was derived from company's personnel files in the last year of the questionnaire survey period. The raw yen value was

subject to analysis. The *Promotability Index* (1974) was created by using the company's appraisal of the newcomer's potential. The appraisal was conducted at the end of the third year using a "multiple rater method" (Sano, Makita & Sekimoto, 1970). For each newcomer, a team of raters (several bosses, the supervisor, the assistant supervisors, several peers and several personnel staff members) were identified. They evaluated newcomer's promotability on the basis of their day-to-day interaction with him on the job. Using a 6-point scale they rated each newcomer on technical skill, administrative skill, interpersonal skill, energy and intelligence. For the present analysis, a promotability score was computed for each newcomer by aggregating all ratings across both dimensions and raters. An average measure of *Job Performance* (1974) was constructed based upon data collected at six different points in time during the 1972-1974 survey period. The job performance instrument employed 9 items: (1) accountability, (2) alertness, (3) interpersonal skills, (4) planning, (5) technical skills, (6) know-how, (7) the level of contribution, (8) interpersonal attraction, and (9) willingness to contribute to the company. The supervisor was asked to rate the job behavior of his subordinate on each dimension using a 5-point scale. The composite rating was the aggregate of 9 scores. Reliability coefficients (Cronbach's alpha) computed for this measure at each time period produced satisfactory results, with alphas ranging from .88 to .94. Also, coefficients of test-retest stability were calculated for all possible combinations between 6 time periods. Fifteen correlation coefficients were produced, which distributed from the lowest .15 to the highest .70 with a median $r = .46$. All coefficients except the lowest one were significant at the $p < .01$ level (Wakabayashi, 1980). Based on the above results, performance ratings at 6 different points in time were aggregated to be used as a measure of the average performance level of the newcomer for the first three years in the company.

In 1978, seven years after the initial questionnaire survey, most newcomers were granted the first formal management position (a *kakari-cho* rank) in the company's managerial hierarchy. However, they were differentiated into three groups at this point in terms of the *Speed of Promotion* (1978). The first group consisted of those who were promoted in March, 1978; the second one of those who were promoted in November, 1978; and the last one were those who were not yet promoted to the position by the end of 1978. The

value "3" was assigned on the SP(1978) scale to those belonging to the first group (51 percent), while those belonging to the second (36 percent) and the third group (13 percent) received the value "2" and "1" respectively. This scale had a restricted range and a skewed distribution. Nonetheless, it was an approximation to the full-fledged promotion variable. Company personnel files for the 1978 business period provided another pieces of criterion data: *Salary* (1978) and *Bonus* (1978). Raw yen values were used as dependent variables for the regression analysis.

Analytic Procedures

The present analysis follows the method of hierarchical regression analysis (Cohen & Cohen, 1975). This method has been used extensively in leadership studies for evaluating that effect of leader behavior (Katerberg & Hom, 1981; Rousseau, 1978; Vecchio, 1982). The method was employed in the present analysis for the purpose of partitioning criterion variance into two parts: (a) the one to be explained by the *before* entry variables (Human Potential, University Ranking and the First Job) and (b) the other to be explained by the *after* entry variables (Vertical Exchange and VE \times HP). For the first step, the *before* variables enter the regression. The squared multiple correlation (R^2) generated for each criterion represents the portion of variance explained by the *before* factors of career development. For the second step, the *after* variables are included in the regression in addition to the *before* variables. Increases in R^2 resulting from the inclusion of these variables repre-

sents the unique effects of vertical exchange variables upon each criterion, that is, the change that takes place after start of the career development process in the organization. This analysis tests (1) whether increases in R^2 is large enough to have a statistical level of significance, and (2) what portion of variance in each criterion can be explained by combining the *before* and *after* variables into regression equation. In addition, the effect of newcomer's first three-year performance upon the 1978 criterion measures is examined by extending basically the same procedures as outlined above. For this part of analysis, Job Performance (1972-1974) and Promotability Index (1974) are included in the regression in addition to the *before* and *after* variables to explain Speed of Promotion (1978), Salary (1978) and Bonus (1978).

Results

Table 1 shows correlation coefficients among variables used in the analysis. The results indicate (1) Criterion measures correlate with each other moderately, not only within but also across two time periods (1974 and 1978). (2) Job Performance rated by the supervisor using the questionnaire method correlates quite well with criterion measures derived from the company's personnel files. (3) Vertical Exchange has significant correlations with all criterion measures. This suggests the importance of dynamic aspects after the start of the career development process. (4) Human

Table 1 Correlation Coefficients among Variables used for the Study

Variables	1	2	3	4	5	6	7	8	9	10
1. Speed of Promotion (1978)	—									
2. Salary (1978)	.56**	—								
3. Bonus (1978)	.83**	.55**	—							
4. Bonus (1974)	.42**	.27*	.48**	—						
5. Promotability (1974)	.49**	.44**	.51**	.63**	—					
6. Job Performance ('72-'74)	.55**	.35**	.44**	.62**	.66**	—				
7. University Ranking	.04	.11	.12	.18	.06	-.03	—			
8. First Job	.11	.24*	.12	-.12	-.07	-.03	.11	—		
9. Human Potential	.29*	.07	.21	.22	.22	.27*	.32**	-.20	—	
10. Vertical Exchange ('72-'74)	.30**	.24*	.33**	.33**	.36**	.35**	.23*	-.18	.21	—

* $p < .05$, ** $p < .01$

Note. Variables from 1 to 6 represent criterion scales, while those from 7 to 10 are predictor scales.

Table 2 Means and Standard Deviations of Career Development Variables for the High and Low Vertical Exchange Groups

Variable	Vertical Exchange (1972-1974)		Total (N=72)	t
	Low (N=35)	High (N=37)		
Speed of Promotion (1978)	2.17 (0.79)	2.60 (0.55)	2.39 (0.70)	2.66**
Salary (1978) ¹	176.5 (10.3)	181.3 (3.0)	179.0 (7.8)	2.68**
Bonus (1978) ¹	929.9 (74.2)	962.5 (54.2)	946.6 (66.3)	2.14*
Bonus (1974) ¹	139.8 (1.3)	140.7 (1.4)	140.3 (1.4)	2.93**
Job Performance (1972-1974)	47.2 (5.7)	51.1 (4.4)	59.2 (5.4)	3.24**
Promotability (1974)	51.7 (7.2)	56.1 (4.1)	53.9 (6.2)	3.25**
University Ranking	2.69 (0.90)	3.16 (0.93)	2.93 (0.94)	2.21*
Human Potential	48.3 (7.5)	50.5 (7.6)	49.4 (7.6)	1.20

¹Unit by thousand yen. * $p < .05$, ** $p < .01$

Note. Numbers in parentheses indicate percentages.

Potential maintains consistent positive correlations with all criterion measures but that they are rather weak compared to those exhibited by Vertical Exchange. (5) University Ranking shows significant correlations with Human Potential and Vertical Exchange (but not with criterion measures) indicating the effect of college prestige upon the determinants of career development (but not upon the career outcome itself). (6) Vertical Exchange and Human Potential correlates with each other ($r = .21$) which indicates that the two predictors share a small amount of common variance.

Among predictor variables, only Vertical Exchange shows consistent positive relationship with criterion measures in Table 1. To further demonstrate the effect of VE upon career outcome variables, newcomers were classified into High and Low VE groups, and mean outcome values were compared between the two groups based on a t-test. Table 2 shows results of the analysis. The results indicate that those newcomers who had experienced the high level of vertical exchange in average for the first three years in the company during 1972-1974, achieved significantly higher career outcomes not only in the same time period (Bonus, Job Performance, and Promotability in 1974), but also in a much later period (Promotion, Salary and Bonus in 1978), compared to the Low VE group members. In addition, it was shown that the high VE group members represented significantly higher rank-

ings in terms of prestige of universities from which they graduated, compared to those for the low VE colleagues. However, no differences were found regarding the level of Human Potential between the two VE groups. Also, a chi-square test conducted between VE and First Job scales produced no significant result.

Since the measure of SP (1978) had only three levels, it was regarded more appropriate to test its relationship with VE by using a nonparametric test. Thus, the two VE groups were crossed with three SP groups for examining the degree of association between the two measures by using a chi-square test. Table 3 shows the result of the analysis. It was found that out of 37 newcomers who were promoted to the *kakari-cho* position as a First group in

Table 3 Frequency Distribution on Speed of Promotion for the High and Low Vertical Exchange Groups

Speed of Promotion (1978)	Vertical Exchange (1972-1974)		Total
	High	Low	
First	23 (62.2)	14 (37.8)	37 (100)
Second	13 (50.0)	13 (50.0)	26 (100)
Third	1 (11.1)	8 (88.9)	9 (100)
Total	37 (51.4)	35 (48.6)	72 (100)

$\chi^2 = 7.58$, $df = 3$; $p < .05$

Note. Numbers in parentheses indicate percentages.

1978, 23 (62.2 percent) were derived from the high VE group, while the remaining 14 (37.8 percent) represented the low VE group. No differences were found for the Second promotion group. However, among those who were not yet promoted in 1978 (the Third group) about 90 percent (8 out of 9) were found belonging to the low VE group. The above results clearly indicate that the experience of high vertical exchange with the supervisor during early stages in newcomer's career (during 1972-1974), greatly contributed to the fast promotion to the *kakari-cho* position in 1978, while the experience of low vertical exchange during that time period contributed to the slow promotion in the later period. A chi-square test applied to Table 3 produced a statistically significant result at the $p < .05$ level.

Table 1 indicated that Human Potential also holds close relationship with other variables following to the Vertical Exchange. Again, newcomers were dichotomized into High and Low groups in terms of Human Potential scores to see the pattern of differences in mean career outcome values between the two groups. Results of the analysis (t-test) indicated that no significant differences existed between the high and low HP groups regarding career outcome measures. However, University Ranking was found to have significant association between the HP groups as shown in Table 4. Table 4 indicates that out of 23 new-

comers graduating from the First-ranked universities, 16 (69.6 percent) were classified as having high human potential. On the other hand, out of 6 newcomers graduating from the Fourth-ranked universities, only 1 was identified as having high human potential, while remaining 5 (83.3 percent) were all grouped into the low HP category. The similar tendency was observed among the Third-ranked university graduates, although no clear differences were found among those graduating from the Second-ranked universities. The result of the statistical analysis (chi-square test) reached the significance level at $p < .05$. In addition, it must be noted that University Ranking also maintained meaningful relationship with the First Job assignment ($\chi^2 = 11.2$, $p < .01$), suggesting the fact that the lower the ranking of the university from which newcomers graduated, the more likely are they assigned to non-sales jobs in smaller branches. The above results indicate that relationship between the level of Human Potential and career outcomes may be relatively weak among the newcomers for the present study, although the potential factor tends to hold meaningful association with the prestige level of the universities from which they graduated.

Results of the hierarchical regression analysis are shown in Table 5. In this table, figures under the R_1^2 indicates the magnitude of the squared multiple correlation generated by the first set of predictor variables: University Ranking, First Job, and Potential. The multiple correlations are also shown in parentheses. The R_2^2 denotes the squared multiple correlation generated by introducing the second set of predictor variables (Vertical Exchange and a VE \times HP term) in addition to the first one. Then, the difference between the two R^2 s was computed by simply subtracting the R_1^2 from the R_2^2 . Table 5 also shows standardized regression coefficients (beta) generated by the second step regression analyses.

Results shown in Table 5 indicate that the R_1^2 calculated for the Speed of Promotion (1978) was significant ($p < .05$). However, R_1^2 s for the other criterion measures did not produce significant results. Although Human Potential

Table 4 Frequency Distribution on University Ranking for the High and Low Human Potential Groups

University Ranking	Human Potential		Total
	High	Low	
First	16 (69.6)	7 (30.4)	23 (100)
Second	14 (51.9)	13 (48.1)	27 (100)
Third	5 (31.3)	11 (68.8)	16 (100)
Fourth	1 (16.7)	5 (83.3)	6 (100)
Total	36 (50.0)	36 (50.0)	72 (100)

$\chi^2 = 8.48$, $df = 3$; $p < .05$

Note. Numbers in parentheses indicate percentages.

Table 5 Summary of Regression Analyses (beta) based on the Hierarchical Method

Regression	Variables included in the first step regression			Variables added to the second step regression		R_1^2	R_2^2	R_a^2
	UR	FJ	HP	VE	VE×HP			
1. Speed of Promotion (1978)	-.18	.24*	1.74**	2.03*	-2.45**	.126* (.354)	.270** (.520)	.144**
2. Salary (1978)	-.02	.31*	.63	.95	-.95	.077 (.277)	.157* (.396)	.080**
3. Bonus (1978)	-.06	.21	1.49*	1.85*	-2.22*	.074 (.272)	.198* (.445)	.124**
4. Bonus (1974)	.07	-.06	.79	1.09	-1.16	.070 (.265)	.151* (.389)	.081**
5. Promotability Index (1974)	-.09	.04	.25	.43	-.12	.048 (.219)	.155* (.394)	.107**
6. Job Performance (1972-1974)	-.22	.12	.61	.75	-.56	.088 (.297)	.205** (.453)	.117**

* $p < .05$, ** $p < .01$

Note. The R_1^2 and R_2^2 denote squared multiple correlations generated by the first and the second step regression respectively. $R_a^2 = R_2^2 - R_1^2$

showed a significant correlation ($r = .27$, $p < .01$) with Job Performance at the zero-order level, the R_1^2 for this criterion failed to reach significance.

The second step regression analysis (introducing VE and VE×HP terms in addition to the first set of predictor variables) produced very consistent and significant results. That is, as predicted prior to the analysis, the squared multiple correlations (R_2^2) all reached statistical significance. The results shown in Table 5 indicate that a linear combination of all predictor variables used for the study jointly explained 27.0 percent of criterion variance in the Speed of Promotion (1978), 20.5 percent of Job Performance (1972-1974), and 19.8 percent of Bonus (1978). The explanatory power of the regression equation evaluated in terms of the size of the R_2^2 did not seem to show any systematic changes between the two different periods for criterion measurement (i.e., 1972-1974 vs. 1978 periods).

The unique effect of the VE and VE×HP terms upon the criterion variables was evaluated as a difference in the squared multiple correlation (R_a^2), computed between the R_1^2 and the R_2^2 . The size of R_a^2 shown in Table 5 indicates that the magnitude of difference between the two squared multiple correlations ranged from .080 to .144. These differences are all statistically significant. These results suggest that the average level of vertical exchange experienced by the newcomer during his first three years in his organizational career did contribute sig-

nificantly and independently of human talents to career outcomes at three as well as seven years tenure in the organization. Table 5 indicates that the largest increase in the squared multiple correlation was registered for the Speed of Promotion (1978), followed by Bonus (1978) and Job Performance (1972-1974). Moreover, it was found that the unique contribution produced by the VE and VE×HP terms more than doubled the total effect generated by the combination of the first set of variables. For example, the R_1^2 calculated for the SP (1978) by introducing UR, FJ and HP factors into the regression was found to be .126. However, the inclusion of VE and VE×HP term in addition to the above three variables, produced its unique additive contribution ($R_a^2 = .144$). The same pattern of results holds true for all criterion measures in Table 5. This finding suggests that the quality of vertical exchange represents one of the more important dynamic conditions for career progress.

Table 5 also shows standardized regression coefficients (beta) generated by the second step regression analysis using all five predictor variables. The major findings are summarized as follows. (1) Both Potential and Vertical Exchange factors showed consistent positive contributions to variances in all six criterion measures. Both showed statistically significant effects on SP (1978) and Bonus (1978). (2) The interaction sign between VE and HP was negative for all criterion measures and reached significance for SP (1978) and Bonus (1978). These

results suggest that the effect of Potential upon career outcomes may depend as hypothesized upon the level of Vertical Exchange. An analysis of the pattern of interaction between the two variables will be presented later. (3) The First Job assigned (sales jobs or staff job) demonstrated statistically significant contribution to SP (1978) and Salary (1978). These results agree with the belief shared by people in the company as to which job the newcomer should be assigned. (4) It was found that University Ranking measured in term of the prestige level of the university from which the newcomer graduated made little contribution to career outcomes. As shown in Table 1, UR showed slight positive correlations with criterion measures, but these positive signs were negative after Potential and Vertical Exchange were brought into the equation. These results suggest that correlations observed between UR and other variables may be spurious. (5) It is interesting to note that many of the predictors showed stronger association with outcomes for the 1978 period than for the 1972-1974 period. This result suggests that a certain lapse of time may be necessary for the determinants of career progress to appear.

In summary, findings from Table 5 can be stated as follows. (1) As hypothesized, combining the Human Potential and Vertical Exchange factors into a linear regression equation produced greater explanatory power than could be derived by considering either model singly. (2) Vertical Exchange generated, as predicted, a significant and unique contribution to career progress measures. (3) Moreover, the Vertical Exchange unique contribution was consistently greater than that produced by Human Potential and situational factors combined. (4) As hypothesized, Vertical Exchange and Human Potential produced a consistent interaction effect upon career outcomes after seven years. The effect of Human Potential was found to make a difference only for lower quality Vertical Exchanges but not for higher quality exchanges.

For the purpose of evaluating the power of variables assessed during the first three years in a newcomer's career to predict seven-year career outcomes, again the method of hierarchical regression was used. The criteria

for this analysis consisted of the Speed of Promotion (1978), Salary (1978) and Bonus (1978). The two performance-related ratings, Job Performance (1972-1974) and Promotability Index (1974), were brought into the regression after the variables included in the first two steps had been entered. Table 6 shows the results of this analysis. As shown in Table 6, figures under the R^2 are the same as those shown in Table 5. As a third step, Promotability Index and Job Performance factors were introduced and the R^2 was generated for each criterion.

Results of this analysis are summarized as follows. First, all R^2 's reached the statistically significance level ($p < .01$). That is, with the addition of performance factors evaluated during the 1972-1974 period, the full regression equation explained about 30, 37 and 45 percent variance in Salary, Bonus, and the Speed of Promotion. Second, increases due to the third step in the squared multiple correlations (R^2) were significant ($p < .01$) for the three criterion measures. These results suggest that information of performance and promotability contributed unique explanatory power, which ranged from 14.0 to 17.5. Third, regression coefficients (beta) for PI and JP factors showed that the Promotability Index produced significant and consistently positive contributions to all three outcome measures. On the other hand, Job Performance contributed significantly only to the Speed of Promotion (1978). Fourth, both the direction and magnitude of beta weights for UR, FJ, HP, VE, and VE×HP factors remained basically unchanged after the PI and JP factors were added.

In summary, information on job performance and promotability derived from the first three years in a newcomer's career, contributed significantly to explaining variations in career outcomes in the end of the seventh year. The critical importance of the first three-year for newcomer can be demonstrated by adding unique effects of the second step (VE and VE×HP) to those of the third step (PI and JP). By adding the R^2 in Table 5 to the R^2 in Table 6, the portions of criterion variance accounted for by experiences during the first three years were .319, .220 and .294 for the Speed of Promotion, Salary and Bonus

Table 6 Summary of Regression Analyses (beta) based on the Hierarchical Method

Regression	Variables included in the second step regression					Variables added to the third step regression		R_2^2	R_3^2	R_4^2
	UR	FJ	HP	VE	VE×HP	PI	JP			
1. Speed of Promotion (1978)	-.10	.20*	1.51**	1.72*	-2.26*	.23*	.29*	.270** (.520)	.445** (.667)	.175**
2. Salary (1978)	.03	.28*	.49	.74	-.87	.36*	.07	.157* (.396)	.297** (.545)	.140**
3. Bonus (1978)	-.01	.18	1.33*	1.61*	-2.11*	.38**	.11	.198** (.445)	.368** (.607)	.170**

* $p < .05$, ** $p < .01$

Note. The R_2^2 and R_3^2 denote squared multiple correlations generated by the second and the third step regression respectively. $R_4^2 = R_3^2 - R_2^2$

Table 7 Correlation Coefficients between Newcomer's Potential and Criterion Measures for the High and Low Vertical Exchange Groups

Criterion measure	Total (N=72)	High VE group (N=37)	Low VE group (N=35)	High-Low Difference
1. Speed of Promotion (1978)	.294*	-.067	.526**	.593*
2. Salary (1978)	.075	-.153	.099	.252
3. Bonus (1978)	.212	-.083	.400**	.483*
4. Bonus (1974)	.217	.070	.308	.238
5. Promotability (1974)	.218	.123	.227	.104
6. Job Performance (1972-1974)	.268*	.200	.267	.067

* $p < .05$, ** $p < .01$

measures respectively.

To further clarify the pattern of the interaction effect between Vertical Exchange and Human Potential, the sample was dichotomized by dividing at the medium on quality of Vertical Exchange. Correlation coefficients between Human Potential and criterion measures were calculated for each group. Table 7 shows the result of the analysis. As shown, none of correlations for the high VE group showed statistically significant results, indicating that the effect of ability upon career outcomes was negligible when the quality of vertical exchange was high. In other words, when the newcomer reports high quality vertical exchanges during the first three years in the organization career outcomes after the seventh year are also high regardless of the level of ability assessed prior to employment. In contrast, correlations for the low VE group

showed positive and significant results for both the Speed of Promotion and Bonus measures. These results suggest that it is the newcomer's potential to grow that makes differences in career outcomes. When a newcomer fails to report high quality vertical exchanges, the greater the newcomer's ability the higher his career outcomes after seven years. In Table 7, the difference in correlations between the high and low VE groups reached the statistically significant level ($p < .05$) for the Speed of Promotion (1978) and Bonus (1978). This result indicates that the quality of the Vertical Exchange moderated the effect of Human Potential (ability) upon career outcomes.

Based on the Promotability (1974) measure, an analysis was made to characterize which newcomers had been judged to be most promotable in 1974 and what they had achieved in later stages in their organizational career.

Table 8 Means and Standard Deviations of Career Development Variables for the High, Mid and Low Promotability Groups

Variables	Promotability (1974)			Total (N=74)	F
	Low (N=22)	Mid (N=30)	High (N=20)		
Speed of Promotion (1278) ¹	1.95 (0.79)	2.43 (0.63)	2.80 (0.41)	2.39 (0.70)	2.91** a
Salary (1988) ¹	173.5 (11.9)	181.2 (3.8)	181.7 (0.8)	179.0 (7.8)	9.9** a
Bonus (1978) ¹	911.3 (76.5)	945.3 (57.4)	987.6 (41.3)	946.6 (66.3)	8.4** b
Bonus (1974) ¹	139.3 (0.93)	140.1 (1.09)	141.6 (1.36)	140.3 (1.41)	21.2** a, c
Job Performance (1972-1974)	44.4 (3.7)	49.6 (4.7)	53.8 (3.2)	49.2 (5.4)	28.8** a, c
Vertical Exchange (1972-1974)	30.0 (4.2)	32.9 (6.2)	34.5 (5.6)	32.4 (5.7)	3.71** d
Human Potential	48.7 (6.9)	48.3 (8.8)	52.0 (7.0)	49.4 (7.6)	1.59

¹Unit by thousand yen. * $p < .05$, ** $p < .01$

Note. Number in parentheses indicate standard deviations. Letters a, b, and c indicate results of group comparisons based on the Tukey's method, i.e., a: Low < Mid and High, b: High > Mid and Low, c: High > Mid, and d: High > Low, at the $p < 0.5$ level.

For the purpose of this analysis, newcomers were trichotomized into High ($n=20$), Mid ($n=30$), and Low ($n=22$) promotability groups based on the Promotability (1974) scale. Then, comparison of mean scores among the three groups were attempted for each variable, based on a one-way ANOVA followed by the Tukey's method of multiple comparisons at the $p < .05$ level. Table 8 shows the result of this analysis.

As shown in Table 8, those newcomers who were assessed to have High promotability in the 1974 appraisal achieved significantly high levels of career outcomes compared to the Mid and Low promotable colleagues. That is, the High Promotability group attained in 1978: (1) promotion to the *kakari-cho* position with much faster speed, (2) the higher level of salary, and (3) a greater amount of bonus compared to the Low and Mid group members. Differences among groups in Bonus (1978) were found quite substantial. The High promotability group members earned 42.3 and 76.3 thousand yen more bonuses in 1978 compared to the Mid and Low group members respectively. As shown in Table 9, a chi-square test conducted between the three promotability groups and actual promotion groups in 1978 produced a significant result at the $p < .01$ level. Moreover, it was found that the amount of Bonus (1974) also differed systematically among the three promotability groups.

Table 8 also indicates that in addition to the

Table 9 Frequency Distribution on Speed of Promotion (1978) based upon Promotability Groups Classified by the 1974 Appraisal

Promota- bility (1974)	Speed of Promotion (1978)			Total
	First	Second	Third	
High	16 (80)	4 (20)	0 (0)	20 (100)
Mid	15 (50)	13 (43)	2 (7)	30 (100)
Low	6 (27)	9 (41)	7 (32)	22 (100)
Total	37 (51)	26 (36)	9 (13)	72 (100)

$\chi^2=17.6$, $df=4$; $p < .01$

Note. Numbers in parentheses denote percentages.

"hard" criterion measures such as promotion and pecuniary outcomes, the more "soft" criterion, i.e., Job Performance ratings averaged across the 1972-1974 periods, also showed sharp differences among the High, Mid, and Low promotability groups. The above results point to the conclusion that the company's assessment on promotability in 1974 (three years after employment) was conducted not only by reflecting systematically the level of job performance and bonus during the same time period, but also by a very predictive manner regarding the level of career outcomes achieved by the newcomer in 1978. As we have already seen in Table 1 and Table 2, Vertical Exchange was found to have significant and consistent impact upon all of the criterion variables including Promotability (1974) itself.

These results, combined with those in Table 7, indicate that the level of vertical exchange experienced by the newcomer during his early stages of organizational career, constitutes one of the most important determinants of his level of job performance and the judgement of promotability in those periods. This is the reason why VE predicted all important career outcomes in later stages. However, the measure of Human Potential and the other two predictors (University Ranking and First Job) did not show any significant relationship with Promotability (1974).

Discussion

This study examined the predictive validity of the "Situational Model" of managerial career progress. The critical components of the model are the strength of the managerial potential of the newcomers and the quality of the vertical exchanges between leaders and newcomers. This model, thus, combines Human Potential and Vertical Exchange factors into a single model. It was found that the exchange factor and the combined effect of exchange and ability (VE \times HP) produced statistically significant unique contributions to all career outcomes assessed. Although Human Potential and Vertical Exchange factors represented two unique contributors to career progress outcomes, the influence of the Vertical Exchange factor was stronger.

Reasons for the stronger VE effect found in this study can be speculated about as follows. The human potential factor is the newcomer's aptitude or ability, while vertical exchange factor has more to do with motivating the newcomer to work and mentoring the newcomer's behavior toward the attainment of career goals. Wakabayashi and his associates (1980) discussed some characteristic motivating and mentoring functions related to the vertical exchange. They pointed out that high quality vertical exchange helped the newcomer to penetrate the "inclusion boundaries" (Schein, 1971) and obtain access to resources and operations that are more central to his work unit. This "insider" experience enables the newcomer to feel a sense of enhanced self-worth,

improved confidence in one's talents and to set higher performance goals. It is most likely that a high quality vertical exchange facilitates those complex psychological processes required for career progress in the organization.

In addition to its motivating and mentoring functions, vertical exchange was found to moderate the ability to career outcome relationship. An examination of the pattern of interaction (the VE \times HP effect) suggests a compensatory model: Either high vertical exchange or high ability lead to the attainment of high level career outcomes (low HP is compensated by high VE) and only low exchange and low ability lead to the attainment of low level outcomes.

The vertical exchange measure is designed to tap outcropping of the socialization process of newcomers into organization careers (Berlew & Hall, 1966; Bray, et al., 1974; Schein, 1968; Wanous, 1980). On the other hand, the ability factor focused upon selection of newcomers and assumed that the organizational environment for career progress was stable and impersonal or at least unaffected by systematic leadership effects. However, this assumption was found wanting for our newcomers. They appeared to be guided by the strong socialization forces embedded in their leader-member exchanges.

In summary, human potential evaluated *before* the start of the career development process explained a rather small portion of variance in career outcome measures. A large piece of the criterion variance left unexplained was found to be accounted for by the situational factor (leader-member exchange) that encouraged and directed the newcomer's efforts toward the attainment of career outcome *after* the start of the career development process in the organization. The vertical exchange factor successfully represented this dynamic situation after employment. It should be emphasized that this critical leader-member exchange was relatively independent of the newcomer's ability level.

The average level of job performance and promotability rating during the first three years predicted very effectively the level of career outcomes in the seventh year. When performance factors were included in the regression

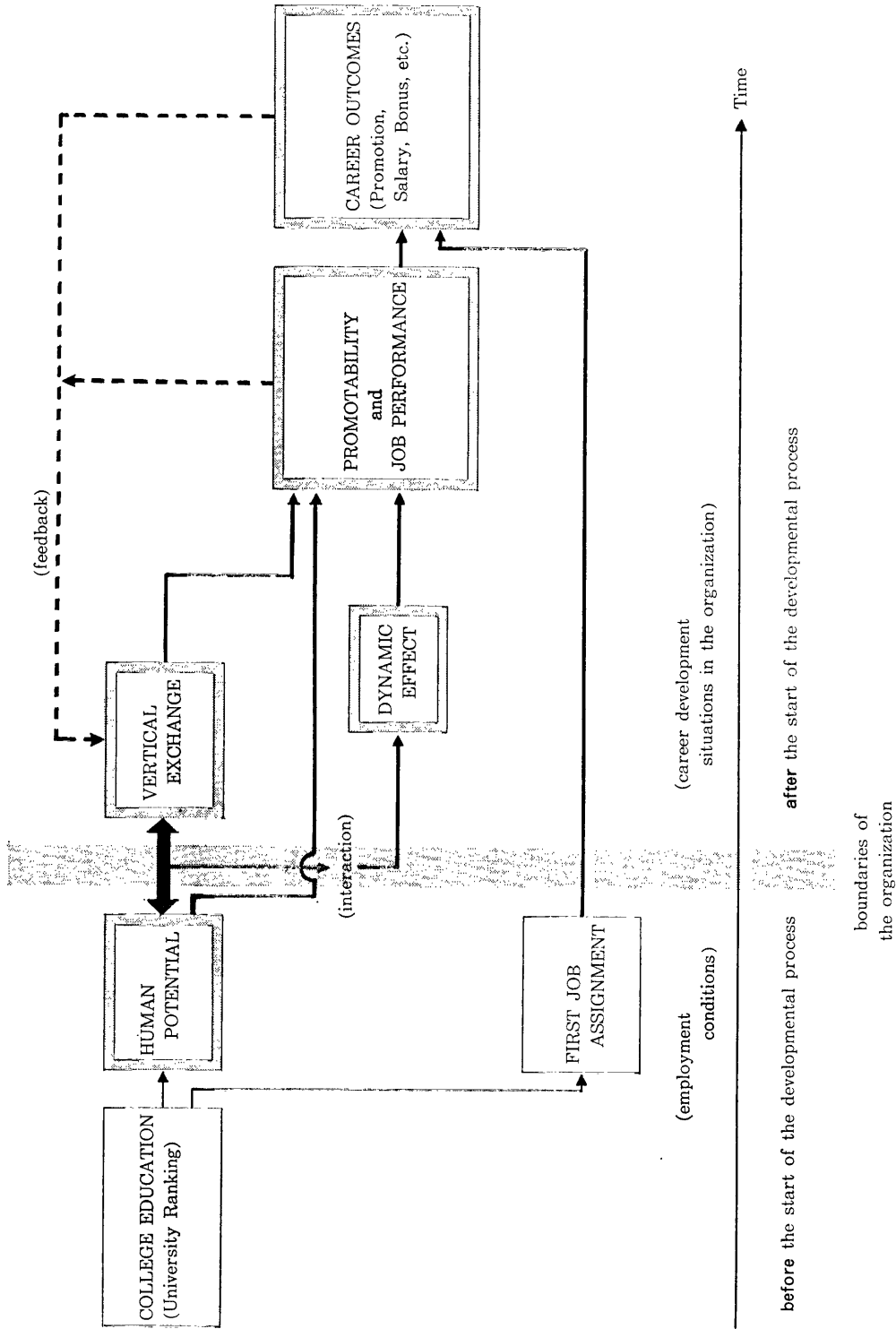


Figure 1 Diagram for the Situational Model of Organizational Career Development

in addition to the *before* and *after* factors, an additional large portion of variance was explained for each criterion measure. This was particularly true for the Speed of Promotion in which about 45 percent of the total variation was predictable.

The career development of the Japanese "salaryman," at least up to the lower-middle management position, can be predicted by the quality of work activities experienced in the very early stages of the career (first three years). Results indicated that the first job assignment, newcomer's assessed potential, vertical exchange relations, job performance, and promotability can be useful indices for predicting the quality of career progress outcomes during these early stages. College prestige in terms of University Ranking (UR) was found affecting the level of human potential evaluated by the company upon employment, and also the kind of first job assignment provided for each newcomer as a result of employment. However, in contrast to the general belief and the results of one study (Pucik, 1981; Pucik & Hanada, 1982), college prestige was found to have null effects upon career outcomes.

It must be emphasized that experiences in early career stages are cumulative in nature. Vertical exchanges in the "critical first year" (Berlew & Hall, 1966; Hall & Nougaim, 1968; Wakabayashi 1980; Wakabayashi, et. al., 1980) will influence exchanges in the second year and beyond and exchanges in the second year will influence exchanges in the third year. Once established early in the career the quality of leader-member exchange that a newcomer established with successive leaders was quite stable and predictable. These features of the career developmental process can be summarised as shown in Figure 1.

Regarding the method of the study, a few points need to be made. First, the human potential scale was constructed using information derived from the company's employment test battery and not from an assessment center (Bray, et. al., 1974; Hinrichs, 1978). As a result the test battery was not comprehensive. In addition the restriction of range problem probably limited the predictive validity of the

human potential scale in the present study. This study, however, is relatively free of the criterion contamination problem, since as a matter of policy all selection and employment information is kept confidential from people in the company, except for a few personnel staff members. Second, the vertical exchange instrument for the present study was developed through a rather rigorous "retranslation" of the English version questionnaire (Graen & Cashman, 1975). By this procedure, questionnaire items were constructed to yield equivalent connotations and denotations in the two different cultures (Wakabayashi et. al., 1980). However, the question of similarities and differences of the construct of vertical exchange between the Japanese and American business cultures has yet to be explored in detail. The present study was not directed at this issue, but rather assumed construct similarities. This assumption may have some validity considering the fact that vertical exchange demonstrated strong predictive validity in the present study and these results were compatible with those of American studies by Graen and his associates. Third, the time interval involved in this study may be short for a study of the managerial career development process. To examine career effect of predictor variables, especially those of vertical exchange, a longer time interval (ten or fifteen years) and the possible occurrence of more critical career events (attainment of upper-middle management positions) may be desirable as conditions for future follow up studies. Given the high retention rate in the Japanese company (94% for the first three years and 85% for the first seven years), a ten-year and fifteen-year follow up of this project appear quite feasible.

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