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CAREER-RELATED ANTECEDENTS AND OUTCOMES OF JOB ROTATION

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Drawing on related literature and an inductive pilot study, we propose a conceptual framework for the relationship between job rotation and selected career-related variables. A test on 255 employees showed rotation was predicted by career antecedents, such as tenure and performance, and was related to career outcomes, such as salary and promotion, positive affect, and perceptions of skill acquisition and other career benefits. Rotation may be a proactive way to enhance the career development value of work assignments.

Work assignments are a primary source of career learning for many, if not most, people (Howard & Bray, 1988; McCall, Lombardo, & Morrison, 1988; Morrison & Hock, 1986), and both job rotation and promotion-from-within policies are presumed to characterize companies with progressive human resource development practices (Foulkes, 1980; Hall, 1976). Yet, little research or theory has focused on job rotation or any other form of on-the-job training (Goldstein, 1986). Job rotation may be a proactive means of enhancing the value of work experience for career development.

The purpose of this study was to develop and test a conceptual framework for the relationship between job rotation, potential career antecedents, and potential career outcomes. We developed a framework and hypotheses through a review of related literatures and an inductive pilot study and then empirically tested the hypotheses in a large organization.

LITERATURE REVIEW AND PILOT STUDY

Definition of Job Rotation

For the purposes of this study, job rotations are lateral transfers of employees between jobs in an organization. Rotated employees usually do not

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remain on jobs permanently but also do not usually return to former jobs. Rotations can serve a staffing function, but they have been discussed in the literature for a variety of other reasons. Researchers have advocated frequent rotation (e.g., daily) among production jobs as a means of reducing boredom and fatigue (Miller, Dhaliwal, & Magas, 1973; Walker & Guest, 1952). Fairly frequent rotation among jobs for a period after the initial hiring of professional employees (rotation every six months for two years, for instance) has been used for orientation and placement (Wexley & Latham, 1981). However, the focus of the present study was on the relationship between job rotation and career development when rotation occurs at longer and varying intervals, such as one to five or more years, for all types of employees in an organization throughout their careers.

Rotation should also be distinguished from promotion. Promotion refers to an upward movement or rise in rank in an organizational hierarchy, usually indicated formally by a change in compensation grade level and often indicated by an increase in responsibility and status (Markham, Harlan, & Hackett, 1987). Promotion may or may not involve a change in job assignment. Rotation refers to any change in assignment, usually indicated by a change in title or department, that does not involve a change in compensation level. Thus, promotion may have many of the same effects on career development as rotation, but we use rotation here to refer to job changes that are not the result of promotions.

Importance of Job Rotation in Related Literatures

Research in five areas attests to the importance of job rotation for career development. First, the authors of research on careers have recognized the importance of work experience (Gutteridge, 1986; London & Stumpf, 1982). Rotation has been viewed as an environmental strategy for career development (Hall, 1984; Wexley & Latham, 1981). Sequential job movements are important for career development (Morrison & Hock, 1986), and experience is important to job learning (Morrison & Brantner, 1992). The components of career motivation, which London (1983) defined as identity, insight, and resilience, can be influenced by experiences gained through rotation. In writings on job transitions, authors have also recognized that rotation can enhance career development (Brett, 1984; Louis, 1982). Finally, career management may be linked to corporate strategy (Sonnenfeld & Peiperl, 1988) in such a way that organizations whose strategies require firm-specific specialists will use job moves as a primary means of development. In short, career development can refer to a broad range of activities and processes, but providing employees with varied work experiences through rotation is one important component.

Second, the executive development literature suggests that rotation may be related to career development because it increases experience. Managers have been presumed to perform a variety of different roles (Mintzberg, 1973), and rotation may enhance learning these roles. Rotation has also been discussed in the context of developing managers into generalists (London,

1985). Recent empirical research has found that work experiences were related to executives' work adjustment, career opportunities, personal development, learning, and changes in abilities, attitudes, and motivation (Gabarro, 1987; Guthrie & Olian, 1991; Howard & Bray, 1988; McCall et al., 1988).

Third, research on plateaued employees also discusses job rotation, but for different reasons. Plateaued employees are those who have reached a point in their careers at which the likelihood of further promotion in the same organization is very low (Ference, Stoner, & Warren, 1977). Even though plateauing can be beneficial (Ference et al., 1977; Slocum, Cron, Hansen, & Rawlings, 1985), it is usually associated with negative outcomes such as lowered commitment (Near, 1985; Stout, Slocum, & Cron, 1988). Rotation is routinely mentioned as a way to ameliorate the effects of plateauing by adding stimulation to employees' work (Ference et al., 1977; Near, 1985; Slocum et al., 1985).

Fourth, the socialization literature suggests that people engage in sensemaking when entering new jobs so that they can interpret the new experiences (Louis, 1980). Socialization has also been described as a process of information acquisition (Ostroff & Kozlowski, 1992). Thus, rotation may enhance career development because of the adjustments and knowledge acquisition new jobs require. Studies examining factors that influence socialization (Buchanan, 1974; Jones, 1986; Louis, Posner, & Powell, 1983) have shown that on-the-job factors such as co-workers, supervisors, and experiences are more important than off-the-job influences such as formal training, orientation programs, and social activities.

Fifth, the management development literature also recommends job rotation (Phillips, 1986; Quartly, 1973; Zeira, 1974). Surveys have found that organizations, particularly large firms, frequently use rotation to develop managers (Foreman, 1967; Saari, Johnson, McLaughlin, & Zimmerle, 1988).

In summary, although no specific body of research literature directly examines job rotation, several related literatures suggest that rotation may be linked to a wide range of career variables.

Inductive Pilot Study

We conducted an inductive pilot study to help ensure that conceptual development would be grounded in the relevant phenomena through a comparison of theoretical propositions and assumptions with qualitative information (Strauss & Corbin, 1990). The pilot study consisted of semistructured interviews with 26 executives employed in the financial function of a large organization; further details on the participants and setting appear below. Two of us conducted the interviews and recorded the responses in writing. Two questions were of particular interest at this early stage of the research, so their answers were content-analyzed. First, we asked the executives what skills employees gained through rotation. The most frequent answers were broader perspective on other business functions (46% of the executives gave this response), adaptability and flexibility (31%), leadership skills (19%), exposure to various management styles (15%), financial and planning skills

(15%), building a network of contacts (15%), and interpersonal skills (12%). The second question asked about the job groups for which rotation was most useful. The most frequent answers were professional nonmanagerial employees such as financial analysts and accountants (35%), managers (23%), and all jobs (19%). The pilot study also yielded numerous insights, explanations, and other comments on job rotation that were used for conceptual development, study design, and results interpretation.

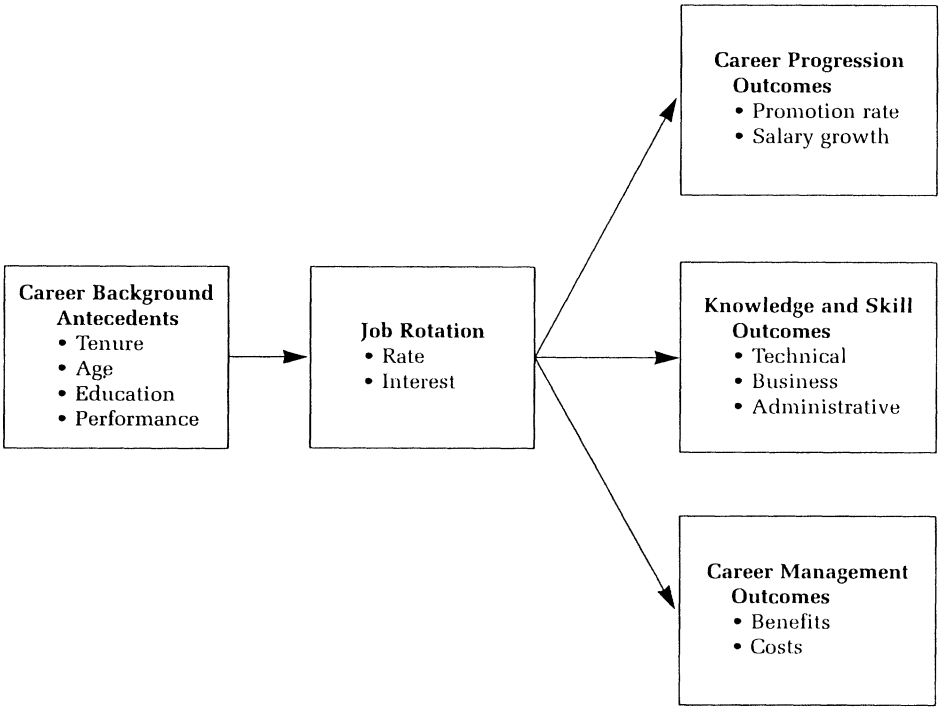
CONCEPTUAL FRAMEWORK AND HYPOTHESES

We developed a conceptual framework based on the related literatures discussed above and others as well as on the inductive pilot study. We use the term conceptual framework because the goal at this initial stage was to describe the phenomenon and some of its associated variables, rather than to fully specify a model or test strong causal propositions. Figure 1 shows the framework, and its elements are described below.

Career Background Antecedents

Even though rotation is assumed to improve growth and development at any point (Schein, 1978), it is more common in early career. In fact, Hall

FIGURE 1
Conceptual Framework for Job Rotation and Career Development Relationships



(1976, 1984) criticized organizations for rotating employees too fast in their early careers and too slowly in their later careers. Research on mobility has found that young, low-tenure, early-career employees have higher mobility expectations, get more opportunities for mobility, and accept those opportunities more readily than older employees (Grusky, 1966; Hall, Schneider, & Nygren, 1970; Landau & Hammer, 1986; Moore, Miller, & Fossum, 1974; Veiga, 1983). By inference, the literature on plateaued employees also suggests that rotation is more common early in people's careers (Ference et al., 1977; Slocum et al., 1985; Stout et al., 1988). Education has been consistently found to be related to promotion aspirations (Markham et al., 1987), perhaps because formal education raises expectations; conversely, lack of education has even been related to individuals' refusing promotion (Campion, Lord, & Pursell, 1981), perhaps because they see themselves as unable to learn new jobs. For the same reasons, education may also predict interest in rotation, and it may additionally predict rates of rotation because education may make employees qualified for more jobs (Markham et al., 1987). Finally, if organizations use rotation to reward and motivate high performance, as they use promotion (London & Stumpf, 1982; Markham et al., 1987), it may be more common among employees who are performing well. Therefore,

> *Hypothesis 1: Employees (a) in early career, (b) with high education, or (c) with high performance will have higher rates of job rotation and express greater interest in job rotation than will other employees.*

Career Progression Outcomes

Several literatures suggest that rotation is related to promotion in at least three different ways. First, in research on mobility, the rate of future job change has been predictable from the rate of past job change (Anderson, Milkovich, & Tsui, 1981; Forbes, 1987; Rosenbaum, 1979). Second, work on mobility and executive development implies that number of job experiences is important to career attainment (Gabarro, 1987; McCall et al., 1988). Third, work on promotion proposes that broad experience within a company is linked to promotion as a result of employees' acquisition of organization-specific skills and the consequent incentive to organizations to promote from within (Markham et al., 1987). Similarly, if job rotation is related to promotion, it may also be related to salary growth because promotions are usually defined in part as increases in compensation grade level. Therefore,

> *Hypothesis 2: The rate (frequency over time) of job rotation will be positively related to promotion rate and salary growth.*

Knowledge and Skill Outcomes

Nearly all areas of research suggest that rotation is related to learning and skill acquisition. Experience with rotation may positively influence employee perceptions of skill acquisition for two reasons. First, experience

with rotation may enhance familiarity with its outcomes. Thus, if skill is related to rotation, perceptions of skill outcomes will increase as an employee gains experience with rotation. Second, cognitive consistency theories (Festinger, 1957; Heider, 1946) suggest that the greater individuals' investments in rotation—for example, the higher their rate of rotation has been—the more likely they will be to view rotation positively. Thus, we expect

> *Hypothesis 3a: The rate of job rotation will be positively related to perceptions that rotation improves knowledge and skills.*

However, job rotation might improve some skills more than others. For example, the pilot study suggested that job rotation improves knowledge of a business (e.g., business issues and environmental influences) more than administrative skills (e.g., planning and communicating) or technical expertise (e.g., accounting and finance). As one executive in the pilot study stated, rotation builds "business people as opposed to experts." This may be the case because rotation directly exposes employees to various areas of a business but builds administrative skills only indirectly. Moreover, technical skills are more often developed during college or other formal training than during rotation. Thus,

> *Hypothesis 3b: Employees will perceive job rotation as relating more to improved business knowledge and skill than to administrative or technical knowledge and skill.*

It should be noted that job level may moderate this prediction. For lower-level jobs, rotation may improve technical knowledge and skills more than administrative and business knowledge and skills.

Career Management Outcomes

We use the term career management outcomes broadly to refer to a wide range of potential benefits and costs of rotation that emerged from the literature and pilot study. Regarding benefits, nearly all areas of research suggest that job rotation increases affective career-related outcomes such as employee satisfaction, motivation, involvement, and commitment (Anderson et al., 1981; Campion & McClelland, 1991, 1993; Farrant, 1987; Feldman, 1976, 1981; Ference et al., 1977; Grusky, 1966; London, 1983; Markham et al., 1987; Near, 1985; Pruden, 1973; Schein, 1968; Schwarzwald, Koslowsky, & Shalit, 1992; Slocum et al., 1985; Zeira, 1974). Work on executive development suggests additional benefits (Howard & Bray, 1988; McCall et al., 1988), including improved organizational knowledge—concerning business strategy and contacts in other areas, for example—and personal development, such as improved ability to cope with uncertainty and self-insight into strengths and weaknesses. Depending on the jobs experienced, rotation may be a form of enlargement or enrichment for an employee. The job design literature suggests additional benefits, such as opportunities for increased

variety, challenge, and achievement (Campion & McClelland, 1991, 1993). Finally, other benefits mentioned in our pilot study include insights rotated employees might bring to their new jobs and the possibility that rotation may, according to one executive, "help transfer the company culture across the organization."

Regarding costs, a variety of authors have recognized that job rotation increases the need to teach employees new jobs, which increases the time spent learning in an organization and direct training expenses (Campion & McClelland, 1991, 1993; Feldman, 1981; Louis, 1980; Ostroff & Kozlowski, 1992; Quartly, 1973; Zeira, 1974). The job design literature suggests there may be additional costs from the increased errors employees make while learning new jobs and the loss of efficiency based on specialization and repetition (Campion & McClelland, 1991, 1993). Both the supervisory management literature (Zeira, 1974) and our pilot study suggested that rotation may create a short-term perspective on problems and solutions both in the employees being rotated and in their peers and subordinates. As one executive put it, "People often do not have to implement their own plans." Finally, the pilot study identified several other potential costs, including productivity losses and workload increases for both the department gaining a rotating employee and the department losing the employee, as a result of training requirements in the first case and of having a vacancy in the second case. In addition, work flows and processes are disrupted when rotation occurs. Comments from the pilot study suggested that rotation can "create trauma" for the rest of a department, and several executives noted that job rotation must "balance developing people with getting the work done."

Following the logic of Hypothesis 3a, we expect that experience with rotation may improve individuals' judgments about these outcomes. One reason is that familiarity with rotation may enhance employees' appreciation for the benefits and lessen their concerns over costs. Another reason is that viewing rotation as negative would create cognitive inconsistency for those with substantial investments in the process. Thus,

> *Hypothesis 4: The rate of individuals' job rotation will be positively related to their perceptions of its benefits and negatively related to their perceptions of its costs.*

METHODS

Setting and Data Collection

The study took place in the financial function of a large pharmaceutical company. Because of the organization's promotion-from-within staffing strategy and emphasis on developing generalists, job rotations (frequent lateral transfers) were very common among its personnel (Markham et al., 1987; Sonnenfeld & Peiperl, 1988). Job rotation was not a formal program just for new employees hired out of college, as is the case in many organizations. Instead, job rotation was an integral part of the career development process

at this company and involved all employees to varying degrees. Most rotations were permanent in the sense that employees did not return to their former jobs, but they were also temporary in that most employees continued to rotate throughout their careers. All functions within the organization utilized job rotation. Some of the rotations were across functions—from finance to human resources, for instance—but most were within a given function: from accounting to treasury within finance, for example. Very few rotations involved geographic relocation. This company used rotation with more jobs and employees than most other private sector organizations in our experience, making it a good setting for the study in that there was considerable involvement in the rotation process.

The total study group consisted of 255 employees. For specific analyses, the statistical power for correlation coefficients was typically over 95 percent for medium-sized effects ($r = .30$) and over 70 percent for more modest effects ($r = .20$, $p < .05$; Cohen, 1977). To attain comparable power for similar effects in regression coefficients, we used the $p < .10$ level of significance. In terms of jobs, there were 26 (10.2%) executives, 70 (27.4%) managers, 154 (60.4%) professionals (e.g., accountants and financial analysts), and 5 individuals (2.0%) without job title information.[1] Age averaged 39.3 years (s.d. = 11.0), and tenure averaged 13.0 years (s.d. = 10.5). Regarding education, 248 respondents (97.3%) had a bachelor's degree or more and 141 (55.3%) had a master's degree or more.

Measures

To avoid common method variance among measures, we collected data for the measures from personnel records (e.g., antecedents, rotation rates, and progression outcomes) and from questionnaires (e.g., interest in rotation and remaining outcomes).

Career background antecedents. Data on organizational *tenure* and *age* were collected in years. *Education* ranged from 1 (less than high school degree) to 6 (Ph.D., M.D., or J.D. degree). *Performance* ranged from 1 (satisfactory) to 3 (superior). Information for these measures came from personnel records.

Job rotation. Printed records of work histories were obtained for most employees. We examined each history to code the rotations with the help of a personnel representative and an employee familiar with the financial jobs. A rotation was operationally defined as any change in job title or department that did not coincide with an increase in salary grade level. *Job rotation rate* was expressed as an individual's number of rotations divided by the number of years of employment in the organization. To exclude new employees who

[1] Partial data are available on a group of 130 lower-level employees, including clerical workers and secretaries. The results are the same for the hypotheses that can be tested, except for Hypothesis 3b; these employees saw technical skills as improved more by rotation than administrative and business skills. More detailed information is available from the first author.

had not had an opportunity to rotate, we studied only those with at least one rotation or at least five years tenure. Five years was considered an adequate time in this company to ensure an employee a chance to rotate. These exclusions somewhat reduced the number of respondents for analyses with this measure (see the tables).

Self-reported interest in rotation was assessed in three ways. First, *interest in general* was measured with four items: "I am generally in favor of job rotation for training and development," "If it *did not* involve a relocation, I would be interested in job rotation at some time in the future," "If it *did* involve a relocation, I would be interested in job rotation at some time in the future," and "I would be interested in job rotation in the *near future*." A factor analysis suggested a unidimensional scale, with the first factor having an eigenvalue 2.8 times larger than the second and explaining 54 percent of the total variance. A five-point response format (strongly agree, 5, to strongly disagree, 1) was used; a "do not know" option was included. Total scores on the measure were averages across the items ($\alpha = .73$).

Second, *interest in variety of assignments* was measured with 22 items, 21 on various departments within the financial function, such as treasury, tax, and auditing, and 1 on other functions, such as sales and human resources. A factor analysis again suggested a unidimensional scale, with the first factor having an eigenvalue 4.0 times larger than the second and explaining 40 percent of the total variance. Extent of interest was assessed on a five-point response format ranging from "a very great extent" (5) to "no extent" (1), with a "do not know" option and anchors selected to enhance discriminability (Bass, Cascio, & O'Connor, 1974). Total scores were averages across items ($\alpha = .93$).

Third, *preferred time between rotations* was measured with two items: "What is the *minimum* amount of time a person at your level should be on a job before rotating to another job?" and the same question in reference to "the *maximum* amount of time" (interitem $r = .79$). Responses were assessed in months, and scores were averages. Because rotation was a career-long activity in this organization, rotating more quickly meant that employees would rotate more often. Thus, a preference for less time between rotations was interpreted as greater interest in rotation, and predictions were for negative relationships with this measure.

Career progression outcomes. Using the work histories, we operationally defined a promotion as an increase in salary grade level based on the organization's job evaluation system. *Promotion rate* was expressed as number of promotions divided by number of years of tenure. *Salary growth* was defined as current salary class minus salary class at entry into the company divided by number of years of tenure. Although promotion rate and salary growth are related, they differ in that promotions can mean a change of either one or two salary class levels. In order to exclude employees without an opportunity for progression, only those with at least one promotion or salary class change or with at least ten years tenure were used. Ten years was

thought to be an adequate time to ensure consideration for progression in this company. Numbers of respondents were thus reduced somewhat (see the tables).

Knowledge and skill outcomes. Perceptions of knowledge and skill acquisition were measured because it would have been difficult to assess actual acquisition, especially with the nature and variety of jobs in the group studied. The link between perceptions of knowledge acquisition and actual learning is commonly presumed in educational settings (McKeachie, 1980) and has also been demonstrated in industrial training research (e.g., Hicks & Klimoski, 1987; Wexley & Baldwin, 1986). We developed a broad list of 19 types of knowledge and skill needed for jobs in the financial function of this company from four sources: a review of performance appraisal forms for the jobs, a review of existing training materials and programs, a review of skill rating forms commonly used in job analysis, and a brainstorming session with six executives and managers. The items asked for a judgment of the extent to which job rotation generally improved each knowledge and skill. The response format described above for judging extent was used.

Two of the 19 items were eliminated because the area assessed was not perceived to be improved by job rotation, with improvement defined as a rating significantly larger ($p < .05$) than 3, the midpoint of the rating scale, which was "improved by rotation to a moderate extent." We submitted the remaining 17 items to factor analysis ($N = 15.0$ per item) to examine dimensionality and reduce the data into composites. Principal components analysis and orthogonal rotation were used because the analysis was exploratory. After we eliminated 4 items with high cross-loadings, three factors emerged having eigenvalues exceeding 1.0 and explaining 55 percent of the total variance. We named the following skill factors for their highly loading items: administrative, technical, and business. This factor structure is similar to the dimensionality of skills required by management jobs discovered in previous studies (Ford & Noe, 1987; Katz, 1955; Pavett & Lau, 1983). We formed a composite for each factor by averaging items with the highest loadings. Table 1 contains the descriptive labels used (the items included definitions), descriptive statistics, reliabilities, and loadings.

Career management outcomes. Perceptual measures were appropriate for most of these outcomes, especially those of a personal or affective nature. Objective measures may have been more appropriate for a few of the outcomes, but we did not view the use of perceptual measures for these outcomes as a major limitation. We developed a wide range of 29 expected benefits and 15 expected costs on the basis of the literature review and pilot study and included 1 item for each benefit and cost in the questionnaire. The agree-disagree response format described above was used.

Of the 44 benefits and costs, 33 were perceived to be influenced by rotation in the expected directions, with influence defined by a rating significantly larger ($p < .05$) than the midpoint of the rating scale (3, neither agree nor disagree). Ratings on 4 expected benefits were significantly lower

TABLE 1
Descriptive Statistics and Factor Loadings of Knowledge and Skill Outcomes[a]

Factors/Items		Means	s.d.	Loadings 1	2	3
1. Administrative						
Planning and organizing skills		3.16	0.93	−.07	−.09	**.72**
Communication skills		3.26	1.06	−.01	−.01	**.85**
Interpersonal skills		3.71	0.91	.21	.20	**.71**
Leadership skills		3.51	0.99	.23	.16	**.70**
Self-improvement skills		3.62	1.02	.07	.19	**.53**
Cognitive skills		3.29	0.96	.10	.14	**.66**
Eigenvalue	3.74					
Variance explained	29%					
Alpha	.81					
2. Technical						
Accounting knowledge		3.52	0.94	**.84**	−.05	.00
Financial knowledge		3.83	0.84	**.77**	.07	.09
Knowledge of policies, procedures, and practices		3.97	0.87	**.57**	.11	.13
Eigenvalue	1.82					
Variance explained	14%					
Alpha	.64					
3. Business						
Knowledge of general business issues		3.67	1.04	.39	**.56**	.19
Knowledge of department's roles		3.83	1.06	−.05	**.75**	.12
Knowledge of external environment		3.20	1.05	.33	**.56**	.13
Knowledge of international issues		3.59	1.11	−.07	**.81**	.02
Eigenvalue	1.50					
Variance explained	12%					
Alpha	.69					

[a] $N = 237–253$. Boldface indicates largest loading on each factor.

than 3.0 and thus actually defined costs; 2 costs were rated significantly higher than 3.0 and were thus benefits; and ratings on 5 others were not significantly different from the midpoint and were thus dropped. Therefore, the initial 29 benefits became 24 for the factor analysis ($N = 10.6$ per item). After we had eliminated 4 items with high cross-loadings, four factors emerged with eigenvalues exceeding 1.0 and explaining 60 percent of the total variance. The names of the benefit factors, based on highly loading items, were career affect, organizational integration, stimulating work, and personal development. With the changes above, the number of costs was 15 for the factor analysis ($N = 17.0$ per item). Four factors again emerged having eigenvalues exceeding 1.0 and explaining 60 percent of the total variance. The cost factors were named workload and productivity, learning curve, satisfaction and motivation in gaining department, and satisfaction and motivation in losing department. We formed composites for each factor by

averaging items with the highest loadings and scaled them so that larger values meant a higher benefit or cost. Table 2 contains descriptive labels for the career management items, descriptive statistics, reliabilities, and loadings.

Procedures

We prepared a presentation that provided an explanation of the study and instructions for the completion of the questionnaires and gave this presentation to the group of executives who had participated in the pilot study. Each executive then held a meeting with the managers directly reporting to him or her to repeat the presentation and distribute the questionnaires. Subsequently, each manager held a meeting with the employees reporting to him or her to repeat the presentation to them. Questionnaires were usually completed in the meetings.

Questionnaires were not anonymous so that we could link them to archival data and remind late respondents, but we assured employees that management would only receive group-level data and that their individual answers would be kept confidential. To further foster confidentiality, we had employees place completed questionnaires in individual envelopes and send them directly to us through the company's internal mail, and we returned questionnaires to respondents once their data were recorded. The response rate was 87 percent. The remaining 13 percent did not respond primarily because of scheduling difficulties, vacations and trips, and other nonvolitional reasons. Archival data were obtained directly from computerized personnel files.

RESULTS

Table 3 presents descriptive statistics on the measures used to test the hypotheses. The rotation rate that emerged is .44 rotations per year, or about 2.3 years per rotation. The promotion rate is .15 per year, or about 6.7 years per promotion. The salary growth rate is very similar to the promotion rate. The career background and perceptual measures all appear to have adequate range and variation, and the perceptual measures also have adequate reliability.

Although the hypotheses are stated in a bivariate manner, we tested them with regression analyses in order to control for the potentially confounding influence of other variables in the study. Hypothesis 1 predicts that employees who are in early career or who have a high level of education or performance will have higher rates of job rotation and express greater interest in job rotation than other employees. The four significant regression equations shown in Table 4 largely support the hypothesis. The standardized regression coefficients show that tenure is strongly related in the predicted directions with rotation rate and all three measures of interest in rotation. We excluded age from the regression analyses because of its multicollinearity with tenure, but age shows the same pattern of relationships as tenure in the correlations given in Table 3.

TABLE 2
Descriptive Statistics and Factor Loadings of Career Management Outcomes[a]

Factors/Items		Means	s.d.	Loadings 1	2	3	4
Benefits							
1. Career affect							
Increase feelings of achievement		3.58	1.02	**.62**	.27	.20	.05
Increase satisfaction with one's work		3.75	0.94	**.77**	.26	.17	.06
Increase work motivation		3.84	0.90	**.81**	.16	.25	.10
Increase involvement in career		4.15	0.82	**.71**	−.04	.11	.31
Increase satisfaction with career		3.95	0.93	**.71**	.16	.23	.24
Increase self-confidence		3.83	0.85	**.59**	.28	.16	.31
Increase commitment to career at company		3.57	0.91	**.59**	.35	.00	.08
Eigenvalue	7.11						
Variance explained	40%						
Alpha	.88						
2. Organizational integration							
Increase understanding of strategy issues		3.83	0.89	.19	**.56**	.31	.08
Increase network of contacts		4.53	0.63	.14	**.67**	.10	.32
Increase transfer of company culture		4.04	0.72	.20	**.66**	.13	−.02
Encourage fresh insights		4.27	0.74	.27	**.69**	.14	.27
Eigenvalue	1.30						
Variance explained	7%						
Alpha	.68						
3. Stimulating work							
Increase task variety		4.47	0.68	.13	.27	**.72**	.10
Increase variety of skills		4.15	0.73	.18	.08	**.82**	.03
Increase challenge and stimulation		4.34	0.75	.45	.20	**.56**	.30
Increase opportunity for learning		4.50	0.72	.44	.19	**.53**	.31
Eigenvalue	1.19						
Variance explained	7%						
Alpha	.79						
4. Personal development							
Increase ability to cope with uncertainty		3.94	0.79	.20	.00	.01	**.77**
Increase insight into strengths/ weaknesses		4.02	0.77	.22	.24	.09	**.62**
Increase awareness of management styles		4.43	0.56	.08	.24	.29	**.62**
Eigenvalue	1.05						
Variance explained	6%						
Alpha	.60						

TABLE 2 (continued)

Factors/Items		Means	s.d.	Loadings 1	2	3	4
Costs							
1. Workload and productivity							
Decrease productivity in unit gaining employee		3.18	1.02	**.78**	.02	−.18	.04
Increase workload in unit gaining employee		3.24	0.95	**.85**	.03	−.13	.00
Decrease productivity in unit losing employee		3.82	0.95	**.58**	.46	.10	−.33
Increase workload in unit losing employee		3.89	0.91	**.57**	.41	.21	−.24
Increase workload for employee		3.86	0.97	**.49**	.26	.17	−.14
Disrupt flows and processes		3.63	0.94	**.49**	.37	−.08	−.13
Encourage short-term solutions		3.35	1.14	**.45**	.13	−.28	−.07
Eigenvalue	4.61						
Variance explained	31%						
Alpha	.78						
2. Learning curve							
Decrease specialization		3.80	1.01	.32	**.52**	−.21	−.03
Increase time spent learning job		4.19	0.78	−.05	**.70**	.04	−.21
Increase total training costs		3.98	0.95	.11	**.73**	−.10	.00
Increase errors/mistakes while learning		4.19	0.72	.32	**.69**	−.04	−.02
Eigenvalue	1.99						
Variance explained	13%						
Alpha	.67						
3. Satisfaction and motivation in gaining unit							
Decrease satisfaction in unit gaining employee		2.86	0.72	−.04	−.08	**.87**	.17
Decrease motivation in unit gaining employee		2.89	0.75	−.13	−.05	**.85**	.23
Eigenvalue	1.37						
Variance explained	9%						
Alpha	.79						
4. Satisfaction and motivation in losing unit							
Decrease satisfaction in unit losing employee		2.38	0.82	−.09	−.16	.18	**.85**
Decrease motivation in unit losing employee		2.48	0.85	−.11	−.05	.27	**.85**
Eigenvalue	1.02						
Variance explained	7%						
Alpha	.83						

[a] $N = 232–253$. Boldface indicates largest loading on each factor.

The regression coefficients for performance are also significant and in the predicted directions for its relationships with rotation rate and preferred time between rotations. Performance shows a reversal of the direction predicted for its relationship with interest in general, but this small relationship

TABLE 3
Means, Standard Deviations, and Correlations

Variables	*N*	Means	s.d.	1	2	3	4	5	6
Career background antecedents									
1. Tenure	247	13.00	10.51						
2. Age	247	39.26	11.04	.94*					
3. Education	240	4.55	0.70	.01	.07				
4. Performance	194	2.27	0.63	−.19*	−.22*	.06			
Job rotation									
5. Rate	189	0.44	0.22	−.60*	−.62*	.03	.25*		
6. Interest in general	251	3.88	0.89	−.44*	−.49*	.02	−.08	.35*	
7. Interest in variety of assignments	249	2.75	0.80	−.46*	−.50*	.02	−.01	.34*	.59*
8. Preferred time between rotations	243	30.33	13.49	.62*	.63*	.13*	−.21*	−.44*	−.48*
Career progression outcomes									
9. Promotion rate	146	0.15	0.12	−.49*	−.53*	.24*	.10	.37*	.31*
10. Salary growth	141	0.18	0.23	−.28*	−.29*	.13	.05	.29*	.23*
Knowledge and skill outcomes									
11. Administrative	248	3.43	0.71	−.14*	−.15*	−.09	−.07	.24*	.26*
12. Technical	244	3.77	0.68	.01	−.05	.04	.01	.01	.15*
13. Business	240	3.58	0.76	−.24*	−.24*	.11	.04	.27*	.31*
Career management outcomes									
Benefits									
14. Career affect	250	3.81	0.69	−.08	−.07	.03	−.01	.17*	.33*
15. Organizational integration	250	4.17	0.55	−.16*	−.13*	.07	−.03	.18*	.30*
16. Stimulating work	252	4.36	0.57	−.07	−.06	.05	.08	.23*	.29*
17. Personal development	251	4.13	0.54	−.13*	−.14*	.01	.07	.20*	.23*
Costs									
18. Workload and productivity	252	3.56	0.64	.03	.02	.07	.14*	−.01	−.07
19. Learning curve	252	4.04	0.62	−.09	−.07	.13*	.14*	.04	−.12*
20. Satisfaction and motivation in gaining unit	229	3.13	0.68	.15*	.11	−.04	.05	−.15*	−.09
21. Satisfaction and motivation in losing unit	234	3.57	0.76	.06	−.02	−.09	.04	.05	−.04

* $p < .05$, one-tailed test.

may be spurious because it did not appear in the correlations. The hypothesis is not supported for education, which only shows a small reversal with preferred time between rotations. However, this relationship becomes nonsignificant when 11 employees with the three highly specialized advanced degrees (e.g., Ph.D., M.D., or J.D.) are excluded. Finally, the regression equations show that 35 percent of the variance in rotation rates and an average 19 percent of the variance in rotation interest measures can be explained by the career background variables.

In supplementary analyses, we compared the executives, managers, and professionals studied. Univariate analyses of variance (ANOVAs) followed by post hoc comparisons revealed that the professionals preferred significantly less time between rotations than the managers, and the managers preferred less time than the executives (professionals, $\bar{x} = 25.5$ months; managers, $\bar{x} = 36.6$; executives, $\bar{x} = 41.6$; $F = 32.1$, $p < .05$). It is also noteworthy, and perhaps related, that the professionals had the fewest previous jobs and the executives had the most (professionals, $\bar{x} = 4.6$ jobs; managers, $\bar{x} = 10.2$; executives, $\bar{x} = 12.5$; $F = 77.4$, $p < .05$).

Hypothesis 2 predicts that the rate of an individual's job rotation will be related to promotion rate and salary growth. The results of regression equations controlling for the career background antecedents support the hypoth-

TABLE 3 (continued)

7	8	9	10	11	12	13	14	15	16	17	18	19	20
−.35*													
.24*	−.09												
.26*	−.19*	.61*											
.22*	−.22*	.10	.05										
.18*	−.04	−.03	−.02	.25*									
.32*	−.22*	.14*	.00	.35*	.27*								
.21*	−.18*	.09	.02	.36*	.37*	.33*							
.28*	−.20*	.14*	.12	.25*	.32*	.35*	.61*						
.26*	−.15*	.11	.05	.29*	.46*	.27*	.63*	.57*					
.23*	−.12*	.16*	.13	.30*	.24*	.27*	.50*	.49*	.47*				
−.08	.18*	.13	.17*	−.15*	−.15*	−.14*	−.31*	−.19*	−.20*	−.09			
−.02	.17*	.14*	.18*	−.11*	−.10	−.05	−.17*	−.12*	−.11*	−.03	.55*		
−.14*	.13*	−.21*	−.09	−.19*	−.12*	−.25*	−.27*	−.20*	−.21*	−.17*	.23*	.18*	
−.04	.06	.00	−.03	−.04	−.23*	−.19*	−.29*	−.33*	−.27*	−.17*	.30*	.27*	.39*

esis with significant coefficients in the expected direction for both outcomes (Table 4).

Hypothesis 3a predicts that the rate of rotation will be positively related to perceptions of improved knowledge and skills. Regression equations controlling for the career background and progression variables (we used promotion only because of multicollinearity with salary growth) have significant coefficients for rotation rate in predicting both administrative and business skills, but the overall equations are not significant (Table 4). This latter finding may be a result of the loss of power occurring with use of multivariate regressions rather than bivariate correlations (Cohen, 1977) and of the small effect sizes for these variables. Note that the correlations are significant for administrative and business skills (Table 3). Therefore, the support for this hypothesis is only partial.

Hypothesis 3b predicts employees will perceive job rotation as improving business skill more than administrative or technical skills. This hypothesis is partly supported (see the means in Table 3), with business skill significantly ($p < .05$) higher than administrative skill ($t = 2.46$). Unexpectedly, technical skill was higher than both administrative ($t = 6.46$) and business skills ($t = 3.67$).

Hypothesis 4 predicts that the rate of job rotation will be positively related to perceptions of benefits and negatively related to perceptions of

TABLE 4
Results of Multiple Regression Analyses

Criterion Variables	N	Predictor Variables[a]					R^2	F
		Rotation Rate	Promotion Rate	Tenure	Education	Performance		
Job rotation								
Rate	163			−.55*	.01	.12*	.35	28.67*
Interest in general	189			−.42*	.03	−.16*	.17	12.84*
Interest in variety of assignments	188			−.36*	.00	−.06	.13	9.01*
Preferred time between rotations	181			.48*	.14*	−.14*	.28	22.87*
Career progression outcomes								
Promotion rate	138	.12†		−.46*	.11†	−.08	.30	14.52*
Salary growth	133	.20*		−.18*	.06	−.07	.12	4.28*
Knowledge and skill outcomes								
Administrative	134	.27*	.03	.11	.00	−.11	.06	1.53
Technical	134	−.02	−.08	−.02	.06	.04	.01	0.22
Business	131	.20*	.00	−.08	.02	−.02	.07	1.76
Career management outcomes								
Benefits								
Career affect	137	.15†	.07	.11	.03	−.11	.03	0.78
Organizational integration	136	.12	.07	.04	.15*	−.12†	.05	1.50
Stimulating work	137	.19*	.04	.06	.01	.01	.03	0.90
Personal development	135	.18*	.14†	.17†	.11	−.06	.06	1.59
Costs								
Workload and productivity	137	.03	.12	.05	.12†	.16*	.07	1.84
Learning curve	136	.01	.08	−.03	.20*	.04	.07	1.86
Satisfaction and motivation in gaining unit	128	−.02	−.15†	.13	.01	.06	.06	1.67
Satisfaction and motivation in losing unit	131	.18†	.01	.21*	.12†	.04	.05	1.22

[a] Values are standardized regression coefficients.
† $p < .10$, one-tailed test.
* $p < .05$, one-tailed test.

costs. Regression equations controlling for career background and progression variables show significant coefficients for job rotation in predicting three of the four benefits, but again, the overall results of the equations are not significant (Table 4). However, the bivariate correlations are again significant (Table 3). One reversal also occurred with the costs in the regression analyses, but the equation was again not significant, and neither was the correlation. Thus, the support for Hypothesis 4 is again positive but partial.

Managers may perceive costs differently than employees. Supplementary analyses showed that managers and executives perceived workload ($\bar{x} = 3.75$) and learning curve ($\bar{x} = 4.15$) costs to be higher than did professionals ($\bar{x} = 3.46$, $t = 3.65$, $\bar{x} = 3.99$, $t = 2.10$, respectively; $p < .05$). Controlling for job group did not affect the tests of the hypothesis for these costs, however.

Speculating that the executives' ($N = 26$) involvement in the pilot study might have influenced their responses, we recalculated the correlations in Table 3 without the executive data and found nearly identical results. Only six (3%) of the significant correlations became nonsignificant, and only one was relevant to the hypotheses. Thirteen (7%) of the nonsignificant correlations became significant. Only three were relevant to the hypotheses, and all three became significant in the predicted directions, thus strengthening the results.

DISCUSSION

Findings and Conclusions

Rotation is a form of career development that is more common for employees in early career than for those in later career. Tenure and age were strongly related to rotation rates and interest in rotation in this study. One explanation for this relationship is that early-career employees may be more interested in rotation because they see it as having higher value to their careers than do older employees, as the negative relationships between tenure and age and the skill and career benefit outcomes suggest. Another explanation deriving from the pilot study is that senior management may view rotation as a better investment when used with early-career employees. In the words of one executive, there is a "bigger pay-off [with these employees] due to a longer pay-back period."

Job rotation also appeared to be more common for employees performing well. It may be that executives use rotation to reward good employees and motivate future performance or that they view the utility gained from rotating better employees as higher than gains from rotating poorer performers. Results did not indicate rotation was a means of getting rid of low performers, as some might suggest. It should be noted that the study cannot rule out the possibility of reverse causation; those who rotate more frequently might be given higher performance evaluations because the organization values and wants to encourage rotation.

Professional nonmanagerial employees were somewhat more interested than other employees in job rotation, and executives were somewhat less

interested. The pilot study suggested that the higher interest of the former may occur because rotation is a primary means of developing managerial talent, and they are the promotion pool for new managers in this organization. The lower interest of executives may occur because they have less to gain from rotation in that they are already at the top of the promotional hierarchy or because they have had the largest number of total jobs of all employees and are tired of rapid job movement. It may also be that higher-level jobs are more complex and take longer to learn.

The finding of generally no differences in rotation rates among employees of different educational levels suggests that this form of career development is not limited to those with graduate degrees. It must be recognized, however, that these findings may be unique to this setting, in which job rotation was very common and educational levels were fairly high.

Employees may value job rotation because of its association with outcomes like promotion and salary growth. Results indicated modest positive relations with both, and the effects existed when we controlled the career background variables. This link may be motivating in several ways. For example, employees may view rotation as a way of gaining experiences that will be needed for promotion, or the costs associated with rotation may lead employees to view it as an investment by the organization in their development. Rotation may also be viewed as a sign that a promotion is close. In operant terms, rotation could be viewed as a secondary reinforcer because it often leads to promotion (Campion, Cheraskin, & Stevens, 1991). An operant perspective also helps explain the high rate of rotation in that the process appears to occur on a variable ratio schedule wherein the reinforcement (promotion) happens only after an unknown number of rotations.

Another important outcome associated with job rotation is the perception of improved knowledge and skills. Employees perceived 17 of 19 diverse knowledge and skills as improved by rotation. The skills were clustered into administrative, technical, and business categories. Employees with high rates of rotation perceived greater improvement in these skills, but the findings must be interpreted with caution because not all the results of the analyses were significant. If a relationship does exist, one explanation for it is that experience with rotation enhanced familiarity with the outcomes or created positive opinions of the outcomes. Rotation was judged to improve business skill more than administrative skill. Business skill is highly linked to rotation by definition because it involves experiencing different parts of a business. Unexpectedly, employees judged rotation as improving technical skill more than either business or administrative skills. In a specialized function, like the financial setting studied here, rotation may play an important role in developing technical experts.

Job rotation may relate to a range of other career management benefits and costs. Employees perceived that 33 of 44 benefits and costs were related to rotation in expected ways. Some exceptions are noteworthy. For example, we predicted that the satisfaction and motivation of nonrotating employees would increase from rotation because it represented a developmental activity and promotion-from-within policy that could positively affect them.

However, respondents said that rotation diminished the satisfaction and motivation of nonrotaters, perhaps because it created more work for them or even, perhaps, because it generated resentment among nonrotaters. Animosity may also be created when fast-track managers are rotated if they feel an obligation to "shake things up" when taking a new assignment.

The benefits of rotation were clustered into four categories that may have important practical implications for the study of organizations: career affect benefits such as satisfaction, involvement, and commitment; organizational integration benefits, such as increased networks of contacts and transfer of company culture; stimulating work benefits, such as variety of tasks and skills; and personal development benefits, such as coping skills and insight into strengths. The costs were also clustered into four categories: increased workload and decreased productivity for both rotated and nonrotated employees; increased learning costs; and decreased satisfaction and motivation in both units gaining and those losing employees. Another cost, not examined in this study, is that associated with relocating employees if a firm is geographically dispersed.

Employees with high rates of rotation or high interest in it reported greater benefits, but again, interpretation must be tentative because not all analyses were significant. As with skills outcomes, it may be that experience with rotation enhances and reinforces positive perceptions of its benefits. Perceptions of costs were generally unrelated to experience with rotation, but perhaps the results would have been more supportive of predictions if based on a larger group of managers, who may be in a better position to judge costs. For example, managers may be better able to evaluate the transfer of culture across an organization or the productivity lost to training requirements.

Limitations

Five limitations of the present study seem especially important. First, we used some perceptual measures with uncertain accuracy and susceptibility to bias from, for instance, demand effects. Second, the study took place in a single organization with a disposition toward rotation. This favorable disposition might have led to there being more formal rewards for rotation in this organization than in others and to more positive judgments of its perceived outcomes, so the findings may not be generalizable. Third, we did not consider the specific job assignments rotated, and they are likely to influence outcomes (McCall et al., 1988). Fourth, the cross-sectional research design did not allow tests of the causal directions and mediation implied in the conceptual framework shown in Figure 1. For example, the outcomes may reciprocally cause interest and involvement in rotation. Fifth, the framework is underspecified in that the outcomes identified have many other causes, including the availability of promotion opportunities, salary policies, training programs, and the abilities of employees.

Future Research

The study's limitations suggest several avenues for future research. Researchers should collect more objective measures of skill and career man-

agement outcomes, assess generalizability across other jobs and settings, collect information on the developmental nature of the specific job assignments, utilize longitudinal and other research designs that allow tests of causation, and more fully specify the framework. Future research could also more fully examine the role of job rotation in the larger system of career development. Questions include the following: What skills are best addressed through job rotation rather than through formal development programs or other human resource systems, such as performance appraisal? What is the cost effectiveness of developing skills through rotation rather than through other approaches? Future research could also examine the many operational issues raised by the management of rotation programs, such as: How can costs be minimized, especially costs to nonrotating employees? What are the optimal timing and pattern of rotations? How should rotation be linked to formal reward mechanisms? And what are the roles of the employee, manager, and staffing planner?

Three additional research ideas emerged during the study. First, the most common complaint in the pilot study was that employees rotated too fast and the organization was unable to slow the rate down. Ripple effects occurred in that filling openings through rotation created other openings to be filled. We speculated that the organization had more jobs than employees, but rotation allowed all jobs to be filled most of the time (and some jobs to be vacant a small part of the time). Thus, it was difficult for the organization to slow the rate of rotation down because the level of understaffing would have then been more apparent. Although most executives in the pilot study seemed to be unaware of the link between staffing levels and rotation rates, two executives stated that rotation allowed the organization to "spread the pain" from understaffing. The explanation also suggests a potential advantage of rotation, that it may allow leaner staffing and employee development at the same time. As evidence of the savings, the organization's budgeting system included a "replacement lag" item wherein the budget of every unit was reduced by 3 percent in anticipation of the compensation saved from some jobs not being filled for a period each year. Future research should examine this potential advantage of rotation.

Second, future research should further examine the influence of rotation on job design. For example, if rates of rotation are slow, jobs must be broader in scope (enriched) to allow employees to grow. Conversely, jobs can be narrower in scope if employees rotate quickly. This pattern suggests a strategy of using rotation as an alternative to enrichment. Rotation may have a positive effect on motivating job characteristics similar to that of enrichment yet not have all the direct costs of the latter. For example, rotation increases an individual's compensation only when it eventually leads to a promotion, but enrichment may affect a job's compensable factors directly by increasing its ability and skill requirements (Campion & Berger, 1990). Thus, rotation may be a way to motivate employees through job content without changing the compensation value of jobs.

Third, research should examine the effects of job rotation on leadership.

The present study included managers and executives but focused on the aspects of rotation common to all jobs. There may be additional costs and benefits when a manager rather than an employee rotates. For example, a new manager might change performance expectations, job assignments, and objectives in a department. Rotation may even change the leadership behavior of the rotating managers themselves (Bons & Fiedler, 1976). Rotation may also have additional outcomes for managers, such as enhanced credibility derived from having managed many areas of an organization.

In terms of practice, organizations could more aggressively use and proactively manage job rotation as a component of their career development systems. The skills enhanced by rotation could be addressed by the rotational placement process, and skills not enhanced by rotation could be addressed by training programs and management coaching. Rotation could also be used to enhance the development of late-career and plateaued employees. It could be linked with career planning in such a way that employees would know the developmental expectations associated with each assignment. Rates of rotation could be managed according to the time required to address developmental needs and to coordinate a staffing strategy. Finally, organizations could take steps to maximize the benefits and minimize the costs of rotation. Examples include increasing the benefits of organizational integration and stimulating work by carefully selecting jobs, increasing career and personal development benefits by ensuring they are reflected in development plans, decreasing workload costs by managing the timing of rotations, decreasing learning costs by establishing operating procedures, and decreasing the dissatisfaction of co-workers by helping them understand the role of rotation in their own development plans.

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