

# PROMOTION SYSTEMS AND ORGANIZATIONAL PERFORMANCE: A CONTINGENCY MODEL

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Strategic human resource management requires matching workers with job characteristics in order to enhance organizational performance (Fuller & Huber, 1998). While the reliance on an internal labor market is common for organizations, there is considerable variation in the mechanisms used to select candidates for promotion. Such mechanisms can range from up-or-out models of promotion (O'Flaherty & Siow, 1995) to the reliance on some form of merit or rank-order (Lazear & Rosen, 1981) to seniority-based promotion (Dobson, 1988). Few studies have attempted to develop a framework for the design of a promotion system for different environmental and organizational conditions. The current study attempts to fill this void by using a computational model to examine the relationship between promotion mechanisms and organizational performance.

## Theoretical Background and Hypotheses

This study is limited to studying the matching function of the promotion system.

### Main types of promotion systems

*Absolute merit-based systems (AMS)*. The candidate must perform above some arbitrary cutoff level in past, current or projected future performance to become eligible for promotion.

*Relative Merit-based systems (RMS)*. Candidates are ranked according to performance and the highest-ranked candidates are promoted regardless of their absolute performance level.

*Up-or-out systems (UOS)*. The performers above certain performance criteria in a cohort are promoted while those failing to make the grade are dismissed from the organization.

*Seniority-based systems (SBS)*. Seniority based systems promote the candidate in a cohort with the most experience in the organization.

*Random promotion systems (RNS)*. This will serve as a base-level, which relies on neither performance nor seniority but on random selection.

**H1. An AMS system will outperform a RMS system.**

**H2. An UOS system should perform better than an AMS or RMS system.**

**H3. A SBS system should not perform as well as AMS, RMS, or UOS systems.**

**H4. Any other promotion system should outperform a RNS system.**

### Contingency Factors

We propose to test the moderating effects of task environment, organizational structure, individual capability; frequency of monitoring, performance criteria, and transferability of knowledge on promotion system effectiveness. The hypotheses are listed below:

**H5. All promotion systems should perform better in routine or simple task environments.**

**H6. All promotion systems will perform better if individual capability is valued.**

**H7. All promotion systems should have do better in a team than a hierarchy structure.**

**H8. Shorter monitoring periods will decrease performance, except for the SBS system.**

**H9. For AMS and UOS systems, higher criteria may decrease organizational performance.**

**H10. Task knowledge transfer can benefit ABS, RMS & UOS systems but not SBS & RNS systems.**

## Computational Model

In this study, we take an agent-based approach and model organizations as operating in problem classification tasks (Lin & Carley, 1997).

*Task environment*. Four types of task environments are modeled: concentrated additive, dispersed additive, concentrated multiplicative, and dispersed multiplicative. A concentrated environment is considered simpler than a dispersed task environment.

*Organizational structure.* A four-tier hierarchy, where the top manager makes the final decision and a two-tier team, where the four higher level manager make a majority decision.

*Individual capability.* When individuals are considered having capability differences, each member is randomly assigned a capability number that allow them to get better chances to have a correct decision. The opposite is that all individuals are considered to be equivalent.

*Frequency of monitoring.* One is every five problem periods and the other is every 25 problem periods. Promotion will only be carried out at the designated monitoring period.

*Performance criteria.* The performance criteria can be 0%, 25%, 50%, 75%, and 100%. Each such level represents the expected degree of accuracy.

*Transferability of knowledge.* We study the transferability of knowledge by allowing the memory of each individual member to be either carried to the new position or not.

Under each combination of contingency factors, 200 randomly selected problems representing 10 years of decision problems are presented to the organization with a specific type of promotion system. All organizations use the experiential learning procedure for decision making. We also build in a ten-percent annual turnover rate at each position of the organization, in addition to the forced turnover dictated by the promotion system.

### Results

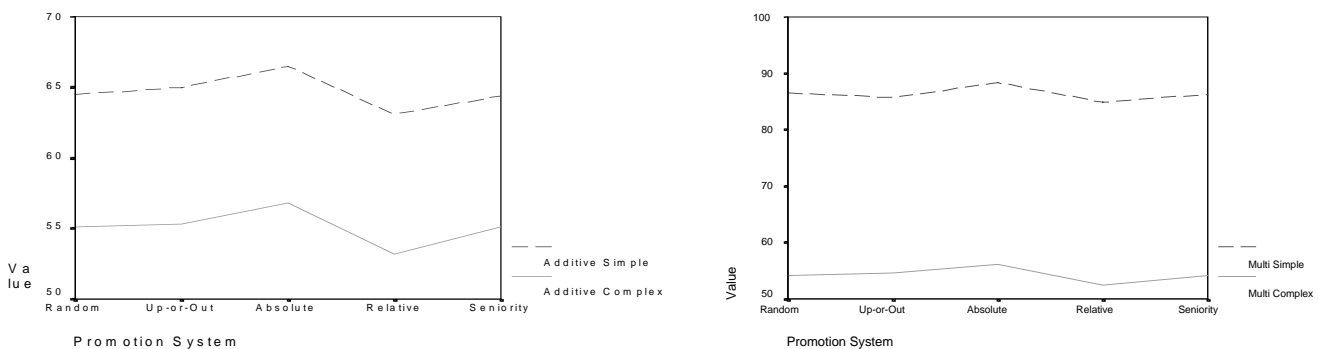
The results from Table 1 show that on average the absolute merit-based system exhibits the highest performance, followed by the up-or-out system and the random-based and seniority-based systems. The relative merit-based system performs the worst. They support Hypothesis 1 and partially support Hypothesis 2, but fail to support Hypothesis 3 and Hypothesis 4.

**Table 1. Performance by Promotion System**

Promotion System	Mean	Median	Std Dev	N	Max	Min
Random	65.1	67.3	19.6	9,600	97.5	25.0
Up or Out	65.2	68.0	20.3	9,600	99.0	23.0
Absolute	67.0	71.4	19.7	9,600	98.0	22.6
Relative	63.4	65.5	20.0	9,600	97.5	24.2
Seniority	65.0	67.0	19.7	9,600	97.5	23.9

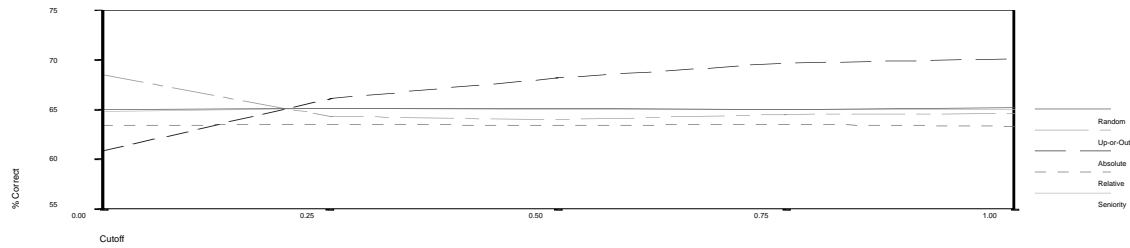
*Task Environment.* The results confirm Hypothesis 5 that all organizational performance is better in a simple and routine task environment. The difference between simple and complex tasks was also remarkably uniform across promotion systems (see Figure 1).

**Figure 1. Performance by Promotion System and Task Environment**



*Performance criteria.* The results in Figure 2 show that for the up-or-out system, the increase of cut-off value does decrease performance but only from low to moderate levels. As for the absolute merit-based system, the increase of the cut-off value actually improved the organization's performance. Other promotion systems are not affected by the cut-off value. Hypothesis 9 is thus not fully supported.

Figure 2. Performance by Promotion System and Performance Cutoff



*Other Contingency Factors.* The results for the remaining contingency factors are pooled in Table 2. At the aggregate level, each of the contingency factors has a significant effect on performance. Introducing ability had the effect of raising the performance 22.5% with the greatest gains in the up-or-out and absolute merit systems followed by the relative merit system. Surprisingly, random and seniority systems also received large performance increases. This supports Hypothesis 6.

Table 2. Mean Performance by Promotion System and Other Contingency Factors

	Ability		Structure		Transferability		Monitoring Period	
	Off	On	Hierarchy	Team	Off	On	Short	Long
Random	54.4	75.8	60.3	69.9	62.4	67.8	63.1	67.0
Up-or-Out	53.4	77.0	63.0	67.4	60.3	70.0	63.1	67.2
Absolute	55.4	78.6	65.4	68.5	65.2	68.8	66.1	67.8
Relative	52.2	74.7	59.5	67.3	60.3	66.5	60.5	66.3
Seniority	54.2	75.7	60.2	69.7	62.1	67.8	63.0	66.9
Total	53.9	76.4	61.7	68.6	62.1	68.2	63.2	67.1

An average performance increase of 7% was also observed when moving from hierarchical to team-based structures. Again, however, the effect was unevenly distributed with random and seniority systems registering the greatest gains. This supports Hypothesis 7. Similarly, while skill transferability and monitoring period led to an average performance benefit of 6% and 4% respectively, up-or-out systems enjoyed an almost 10% gain with transferability while absolute merit systems received less than 4% in transferability and less than 2% from increasing the monitoring period. This supports Hypothesis 10.

**Conclusion**

This study has explored the impact of a number of promotion systems commonly practiced in organizations on organizational performance. Through the computer simulation of organizations in a distributed decision making setting, the results indicate that the effectiveness of any promotion system is dependent on a range of factors including the nature of the task environment, the design of the organizational structure, the individual capability difference, the frequency of monitoring, the criteria of performance, and the transferability of task knowledge.

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