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UNDERSTANDING HOW HUMAN RESOURCE POLICIES INFLUENCE THE CAREER
PROGRESSIONS OF NASA'S TECHNICAL WORKFORCE

Abstract

One of the most attractive features of a space agency career is the autonomy and opportunity to work on interesting projects. This environment creates a motivated technical workforce, but it also limits the ability for HR managers to ensure that staff, both technical and project, are prepared for the future needs of the agency. For example, from an innovation perspective NASA's technology management system assumes that technologists individually split their effort between research projects and mission-system developments. As a result, knowledge of mission needs directly informs R&D and vice versa. However, in practice individual technologists tend to focus on one or the other at particular points in their careers, severely limiting the assumed knowledge transfer mechanism (Szajnfarber, 2011). If HR managers hope to control aggregate workforce characteristics, there is a need for a better understanding of how management-level incentives drive individual behavior and how those incentives impact future organizational needs. In the long run, this research seeks to create a discrete choice model to simulate these individual/management level dynamics. This paper focuses on the first step towards that goal: contextually examining the technical workforce at two NASA centers to characterize the incentive-performance links. Based on both in-depth interviews with scientists and engineers and representative survey data, this paper develops a taxonomy of preference structures, which aims to capture the ways individuals make tradeoffs among project opportunities. Our findings suggests that preference structures can be broadly categorized as either "explorer," "exploiter," or "bridger" and that the orientation for each category is influenced by personal characteristics such as age, education and experience. These insights can inform HR policies, in particular identifying ways in which aggregate workforce dynamics can, and cannot, be influenced. Future work will create a model-based environment in which to test these policies explicitly.