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Author/Institution: Manuela Romero, University of Texas at El Paso

Other Authors/Institutions:

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Abstract:

Charting the Uncharted Path: A Study of Career Trajectories of Female Engineers

The advances of women in the workplace are many, yet female engineers still lag behind their male counterparts in representation, pay, promotion, etc. While census and other broad level analysis, indicates that their representation in the broader occupation of engineering has increased, we know relatively little about their representation within the various engineering jobs found in organizations. This study begins by providing a demographic analysis of the representation of female engineers within a single firm in the electronics manufacturing industry, a firm I call "ELECTRICO".

Much of the research on differences between men and women centers on rates of mobility, emphasizing that men move through the hierarchy at a much faster rate than do women. Little research, however, explores the patterns of mobility and the implications of these patterns for subsequent outcomes. The purpose of this analysis is to illustrate why "patterns" of job mobility are as important as rates of job mobility. Underlying fast rates of movement up the hierarchy are key jobs or key turning points. These positions are often the markers that enable rapid movement through the hierarchy. Without experience in these key positions, individuals do not have the necessary experience to help their rate of upward mobility.

This study uses the personnel records of engineering employees from ELECTRICO, a large for-profit firm in the electronics manufacturing industry. ELECTRICO has many offices and manufacturing plants in several cities of the U.S. and abroad and is like other high-technology firms. Like other firms in its industry, half of its workforce is comprised of professional employees such as engineers and therefore provides a nice sample, albeit small, of female engineers.(1) The data is extensive and rich with information and allows for distinctions at the individual job level.

The analysis is exploratory in nature yet describes the mechanisms by which the outcomes of female engineers differ from those of male engineers. This study suggests that if firms wish to increase the diversity of representation among engineers, especially in the higher echelons of the organization, then they need to address the trajectories, as well as important elements within the trajectories, by which individuals reach these positions.

(1) The small number is due to the representation of women in the profession rather than the firm's hiring practices. In fact, ELECTRICO's recruitment efforts aggressively target female engineers.