KENT STATE UNIVERSITY

Department of Management and Information Systems

Working Paper Series

Capturing Patterns of Sexual Behaviors Using Clusters and Cophenetic Matrices

Deborah E Knapp, Robert H. Faley, Cathy L. Z. DuBois, and Kevin Dow
Kent State University

Working Paper **MIS2007:08**

Capturing Patterns of Sexual Behaviors Using Clusters and Cophenetic Matrices

Deborah Erdos Knapp, Robert H. Faley, Cathy L. Z. DuBois, and Kevin Dow
Kent State University

Although more than twenty years of sexual harassment (SH) research has improved our understanding of the construct and related phenomena, many issues continue to concern researchers and critics of SH literature. First, while SH has been examined from a number perspectives, research on the SH of males has been slower to evolve. We know much more about the nature and scope of the SH of women than of men at a time when the harassment of males is increasing dramatically. The Equal Opportunity Employment Commission (EEOC, 2007) reports that the SH of men has grown significantly over the past 15 years. According to the EEOC, 15% of SH reports in 2007 were made by men, up from 9% since 1992. Moreover, the overwhelming majority of these claims were male-on-male SH.

One under-researched area in the SH literature concerns the patterns with which men and women experience sexually harassing behaviors. Most early reports of differences between male and female targets of SH were based on the results of studies where sex differences were not the primary focus of the study (e.g., studies where sex was used as a control variable [e.g., see Malamut & Offerman, 2001; Sigal, Braden-Maguire, Patt, Goodrich, & Perrino, 2003; Tata, 2000). Although several studies have attempted to determine whether men and women differ with respect to their *perceptions* of potentially sexually harassing behaviors, they have not addressed the fundamental question of whether men and women actually *experience* SH in similar patterns. The objective of our study is to examine this issue while addressing a few methodological problems found in past SH studies.

In the examination that follows, we analyze six archival data sets from the military and federal government using a robust form of cluster analysis that indicates the probabilistic proximity of behaviors to one another as they occur in organizations. We also introduce a method of comparing clusters called cophenetic matrices. Cophenetic matrices allow us to more accurately capture similarities or differences in the ways in which men and women experience SH. To determine how accurately the dendrograms obtained from each cluster represent the estimates of similarities among sexually harassing behaviors, a cophenetic matrix is generated for each dendrogram and compared to the corresponding similarity matrix (generated from the cluster analysis) using the Mantel matrix correspondence test (Mantel, 1967). The cophenetic correlation for a cluster tree or dendrogram is defined as the linear correlation coefficient between the cophenetic distances obtained from the tree and the original distances (or dissimilarities) used to construct the tree. Thus, it is a measure of how faithfully the tree represents the dissimilarities among observations. To compare dendrograms obtained using different subject pools or different datasets, the corresponding cophenetic matrices of the dendrograms are used to estimate cophenetic correlations among them using the Mantel statistic.

Our results indicate that the patterns of sexually harassing behaviors cluster consistently in similar patterns regardless of the sex of the target. This counter-intuitive finding was maintained over time in both organizations surveyed. These findings have important implications for targets as well as their employers, including implications related to the timeliness and scope of remedial action.

From a remedial perspective, knowledge of the relationships within and across clusters can help an organization better identify the status of the existing hostile environment sexual harassment within its workplace regardless of the sex of the target. Moreover, this knowledge

can be used to identify the sexually harassing behaviors most likely to emerge if the existing harassment is not remedied in a timely manner. Thus, emerging patterns of unwelcome sexual behaviors can be identified sooner and remedied more effectively without requiring different remedial programs for male and female targets. This bodes well for organizations that want to identify the extent of the hostile environment sexual harassment within their workplaces so they can better mitigate their future liability.

References

Equal Employment Opportunity Commission (2007). Sexual Harassment Charges EEOC & FEPAs Combined: FY 1992 - FY 2005 [on-line]. Available: http://www.eeoc.gov/stats/harass.html.

Malamut, A. B., & Offermann, L. R. (2001). Coping with sexual harassment: Personal, environment, and cognitive determinants. *Journal of Applied Psychology, 86(6),* 1152-1166.

Mantel, N., 1967. The detection of disease clustering and a generalized repression approach. *Cancer Research, 27,* 209–220.

Sigal, J., Braden-Maguire, J., Patt, I., Goodrich, C., & Perrino, C. S. (2003). Effects of type of coping response, setting, and social context on reactions to sexual harassment. *Sex Roles, 48,* 157-166.

Tata, J. (2000). She said, he said. The influence of remedial accounts on third-party judgments of coworker sexual harassment. *Journal of Management, 26(6),* 1133-1156.