EXECUTIVE SUMMARY

PURPOSE OF STUDY

The purpose of this project was to:

1. Investigate how environmental factors contribute to employee experience/perception of the workplace and their attitudes and performance for the organization,
2. Explore how emerging sociometric sensing technologies can be incorporated in the assessment of the workplace toward a better understanding of the environments, and
3. Provide practical suggestions to support design practitioners and decision-makers seeking evidence-based design guidelines to transform workplaces.

RESEARCH SUMMARY

Under a new landscape of inherently global, digital, fast-paced, and competitive business environments, organizations are increasingly seeing the importance of the physical environment in driving performance as employees are the key engine that keeps organizations growing and innovating. To develop guidelines that ensure successful workplace development, the Connected, Collaborative, and Creative (3C) workplace design assesses levels of connectedness (environmental factors), collaboration (behavioral/perceived interaction), and workplace creativity (performance) facilitated by the workplace using strategic self-reports and advanced sociometers. This study includes the development of the 3C design research framework with an expert and up-to-date knowledge base, and its guidance in a series of case studies with diverse scenarios (e.g., all-day/multi-day charrettes, a large open office for college library technical support groups, ASID headquarters) that focus on employee experience of the workplace and attitude toward the organization in relation to 3C.

IMPLICATION HIGHLIGHTS

• Visual/sound privacy and noise level in the open office may be more satisfactory than in shared offices.
• Low acoustical and/or speech privacy may add negativity to workplace perception and perceived creativity.
• Balanced team participation/collaboration may have positive results in creativity and project performance.
• A certain level of flexibility in workstation layout may support balanced verbal interaction.
3C DESIGN: TOOLS FOR DESIGNING CONNECTED, COLLABORATIVE AND CREATIVE WORKPLACES

BACKGROUND

Despite organizations increasingly recognizing the value of the physical environment in shaping how their employees work, empirical studies elucidating this relationship are scarce and most research studying environmental influences on creativity and innovation has focused on the social environment. Investigating environmental design factors conducive to creative knowledge environments is becoming a critical issue not only for design researchers and practitioners, but also for organizations striving to recruit millennial talent with different preferences and expectations of the workplace. In order to address this need, the 3C project examined the effects of environmental factors on employee experience, perception of the workplace, attitude toward the organization, and their own creativity/performance via a series of case studies.

METHODOLOGY

A project team of interdisciplinary researchers developed a framework for workplace design that guided the evaluation of connectedness, collaboration, and creativity using strategic self-reports and sociometric badges. Office employees volunteered to wear the badges throughout the day for two weeks and complete a survey measuring their connectedness to the interior attributes of their office, their levels of collaboration regarding social and emotional dimensions of the workplace experience, and creativity as perceived productivity of the workgroup/organization and turnover intention. Collaboration was also measured using the sociometric badges capturing speech volume, movements, adjacencies, and face-to-face interactions. Data analysis was done by combining self-report data and badge data. Case studies include the ASID headquarters (old and new locations), Cornell University’s Olin Library tech support open office, the Milwaukee office of HGA Architecture and Engineers, and an IT startup company office in Boston.

KEY FINDINGS

- Case study participants reported higher satisfaction ratings for visual/sound privacy and noise in the open office than in the suite of shared offices.
- ASID HQ employees talked louder in the shared offices than in the open office. Louder speech in the office (previous conditions) also linked to a negative perception of the workplace and lower perceived creativity.
- Balanced verbal interactions were positively associated with the resulting creativity and performance among charrette teams.
- A workstation layout with medium-level flexibility was found to support the balanced verbal interaction better than high-level flexibility or fixed settings during the charrette.
PUBLICATIONS


PRESENTATIONS


RESEARCH BIO

SO-YEON YOON, ASID, PH.D., is an associate professor in the Department of Design and Environmental Analysis, and the director of DUET (Design-User Experience-Technology) Lab, Cornell University. She is a certified interior designer in both the U.S. and South Korea and practiced architecture in Korea. Given her Ph.D. in Information Science with an emphasis on Human Computer Interaction and User Experience, her research has been in the interdisciplinary areas of user experience and design in the context of physical environments.

ALAN HEDGE, PH.D., is a professor in the Department of Design and Environmental Analysis, Cornell University. He directs the Human Factors and Ergonomics Laboratory. His research focuses on design and workplace ergonomics issues. He is a frequent speaker at national and international conferences, a fellow of three professional ergonomics societies, and a certified professional ergonomist.

SHEILA DANKO, MFA, is a professor in the Department of Design and Environmental Analysis, Cornell University. Her multidisciplinary training in architecture and industrial, graphic, and interior design uniquely enables her to explore cross-cutting issues facing design practice, particularly at the intersection of design and leadership. Her work blends creativity theory, strategic business planning, and socially responsible design to create a whole-systems view of design leadership.