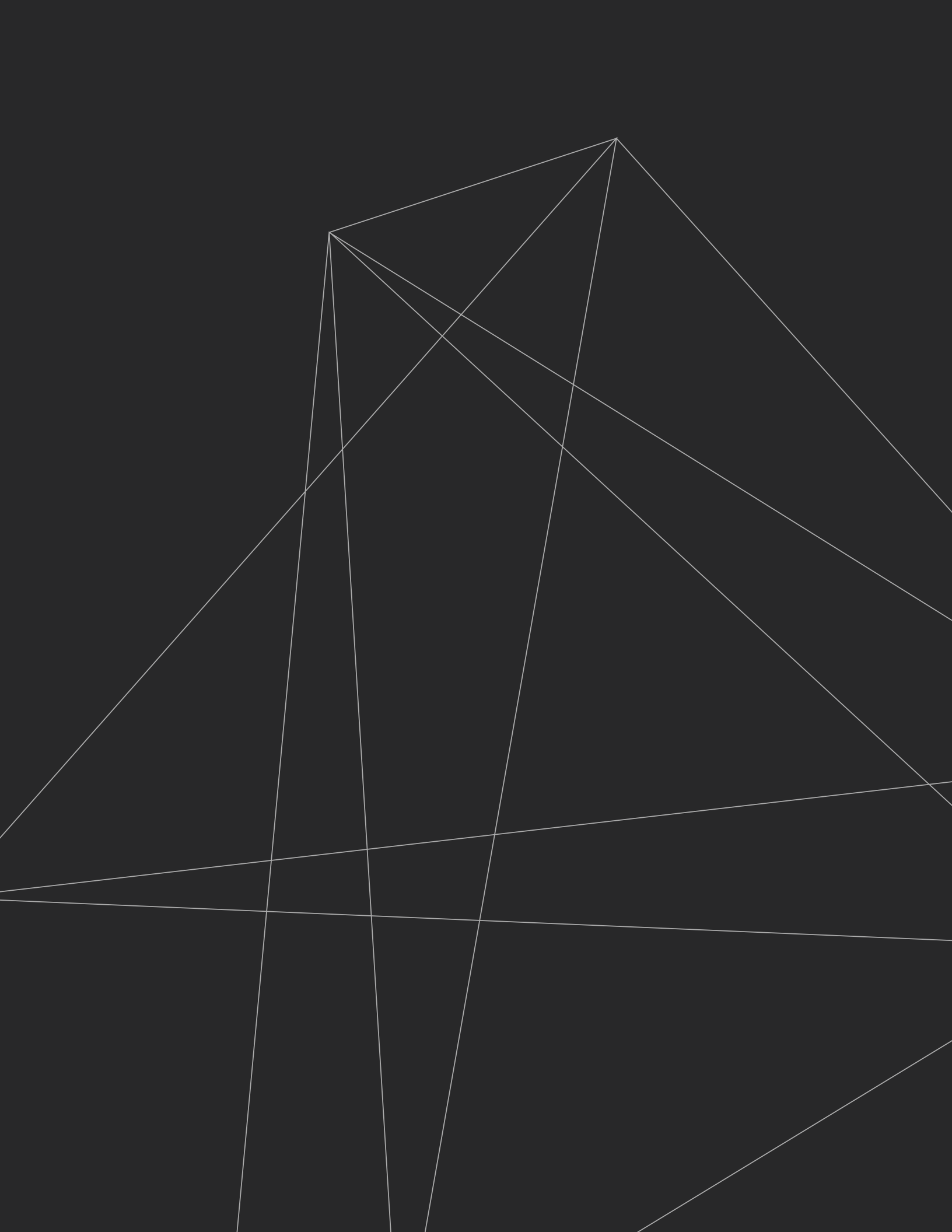# PERSONALIZED CHOICE & WELLBEING

TOWARDS A HEALTHY WORKPLACE

How choice and personality impact perception of
wellbeing and what this means for workplace design

A REPORT BY

CADRE | Center for Advanced Design Research and Evaluation

A NON-PROFIT KNOWLEDGE INITIAITVE BY:

HKS

CHOOSING TO RESEARCH CHOICE AND WELLBEING

Previous work shows that the physical features of office environments have the potential to influence worker wellbeing. But what specifically about these environments and the individuals who enhabit them actually drives worker wellbeing? In the present work, industry literature and discussion prompted our consideration of wellbeing within the larger concepts of choice and control. While there is no codified framework for workplace wellbeing, many entities have begun to put forth their own approach. This research study takes an empirical approach to understanding the relationship between choice and control of one's physical environment as it relates to perceived wellbeing, thus making recommendations and best practices evidence-based and more actionable (versus anecdotal) in workplace design.

But how do these constructs of choice, control and wellbeing come together? The present study examines the relationships between worker wellbeing, environmental choice and control in the workspace, and the individual differences of the worker (i.e., personality, gender, age). 572 full-time knowledge-workers self-reported wellbeing, personality, gender, age, and perceived environmental choice and control within their current workspaces. Initial results indicate that perceived level of choice and control in one's workspace is strongly related to aspects of worker wellbeing (e.g., life, job, coworker satisfaction). For example, increased perceived choice is associated with higher job satisfaction. Also, increased perceived choice in type of workspace (e.g., desk, conference room, café) and increased perceived choice in type of furniture at one's workstation is associated with work-life balance satisfaction. Finally, results show that specific personality traits are associated with workers' perceptions of choice and control as well as overall wellbeing. This study confirms that happiness with choice and control, and all of the environmental components that workers might have choice and control over are indeed related to wellbeing. Further, this work highlights the role individual personality plays in perceptions of choice; which has implications for employers to rethink the one-size-fits-all approach in designing workspace.

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ACKNOWLEDGMENTS

CONTENTS

00 EXECUTIVE SUMMARY

OVERVIEW + HIGHLIGHTS

There is much discussion and interpretation within design industries, healthcare and international health organizations around the complex, concept of 'wellbeing'. However, there is a dire lack of consistent definitions and ways in which wellbeing is conceptualized, and thus measured. This makes for a lot of noise and very little focused application of evidence-based insights towards designing healthy workplaces that promote worker wellbeing. The key is situating choice and control within the larger context of policy, place and technology.

This report is the first in our series of workplace wellbeing. Here we focus on life satisfaction, job satisfaction, organizational commitment, and employee self-report of physical and mental health.

In this study, to define worker wellbeing, we focused on choice, control and perception of wellbeing. To do this, we first created a conceptual framework examining the ways in which workplace wellbeing is/ can be defined and/or measured. Specifically, we identified key metrics of life satisfaction, job satisfaction, organizational commitment, physical and mental health, self-reported productivity, satisfaction with work relationships and physical environment perceptions. Physical environment related wellbeing was addressed at two levels: 1) comfort, functionality and aesthetics, and 2) choice, control, privacy, belonging and fit.

Focusing on these five indicators of worker wellbeing, we wanted to examine how individual differences in the employee (personality, gender, and age) predict his or her perception of wellbeing. We found that age and gender do not have a significant impact on employee perceptions of wellbeing, however personality (assessed by using the Big 5 personality framework) does have an effect.

Overall we found that level of Extraversion/Introversion significantly predicted life and job satisfaction, organizational commitment and ability to focus, reminding us that workplaces should take into account individual personalities in how they are designed. Additionally, Extraversion/ Introversion and Emotional Stability were significant predictors of both self-reported physical and mental health.

Next, given the extensive debate around open offices, and the use of choice as a workplace design strategy, we wanted to explore if (and how) choice in the workplace translates to employee perception of wellbeing, and whether it transcends personality differences.

We found that upon controlling for personality in the statistical model, happiness with choice and happiness with control were significant predictors of employee wellbeing. This implies that providing choice (or perception of choice) can, in fact, be a powerful design strategy across all personality types.

We then investigated how type of office (sorted on a continuum from least to most private), perceived level of privacy and specific elements of the physical environment impacted happiness with choice and control. These elements are described in detail in the report.

Finally, we worked with design professionals to outline core principles for designing for choice, that is inclusive to all personality types- these insights and actionable implications for design are shared in this report.

WORKPLACE WELLBEING KEY TAKE AWAYS
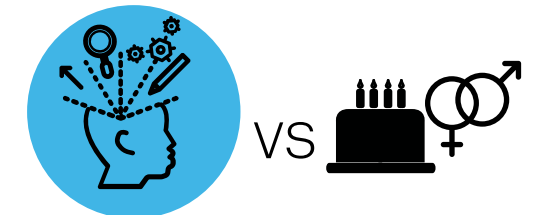
Personality matters (more than age & gender)
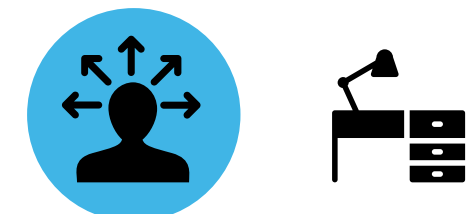
Choice matters (regardless of level of privacy)
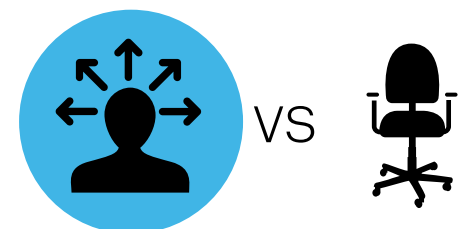
Access via choice matters (regardless of assigned/unassigned workspace)

01 BACKGROUND

CHOICE & CONTROL

PERSONALITY

TYPE OF OFFICE
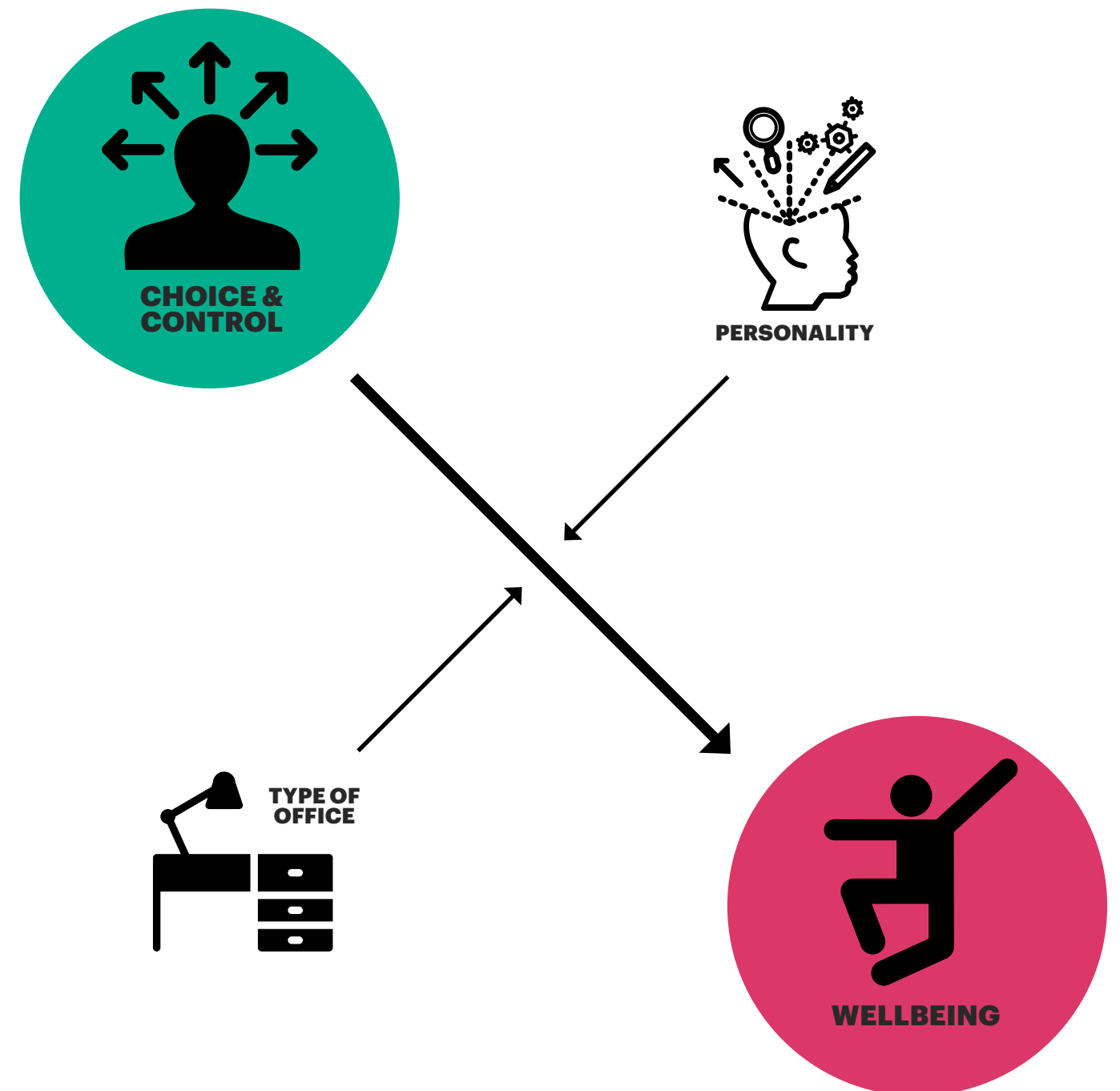
WELLBEING

WHO IS DEFINING WELLBEING AND HOW?

CENTERS FOR DISEASE CONTROL
The CDC acknowledges that there is no single determinant of worker wellbeing, but in general, wellbeing is dependent upon good health, positive social relationships and availability and access to basic life resources. In addition to worker wellbeing, wellbeing can be influenced by genetics, personality, and demographic (e.g., age, gender, socio-economic status) factors. More specifically genetic and personality factors are viewed as closely related and can reflexively impact individual wellbeing.[1]

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT
The Organization for Economic Cooperation and Development (OECD) also provides a broad but empirical perspective of wellbeing. Their Better Life Index (launched in May 2011) considers twenty-three indicators across eleven domains which includes (but is not limited to) income, housing, health, safety, and civic example. Pew Research Center's analysis of the Better Life Index data reveals that while a more formalized construct, wellbeing is a nuanced outcome as it relates to social-cultural values and prioritizes. For example, financial wealth and household income may be more representative measures of wellbeing for for some individuals; while for others it is paid time off from work or larger homes.[2]

AMERICAN PSYCHOLOGICAL ASSOCIATION
In 2015, the APA Center for Organizational Excellence announced the inaugural recipient of the new Organizational Excellent Award, which is intended to highlight effective application of psychology concepts of wellbeing in the workplace. Additionally, the APA also implements the Psychologically Healthy Workplace Award which recognizes healthy, high-performing work environments. Company recipients of these awards have spaces and policies designed to address employee involvement, work-life balance, training and development and employee recognition.[3]

INTERNATIONAL LABOUR ORGANIZATION
The International Labor Organization defines wellbeing as:

"Workplace wellbeing relates to all aspects of working life, from the quality and safety of the physical environment, to how workers feel about their work, their working environment, the climate at work and work organization. The aim of measures for workplace well-being is to complement OSH [occupational safety and health] measures to make sure workers are safe, healthy, satisfied and engaged at work..." [4]

This complimentary view of a more holistic workplace, which encompasses aspects ranging from worker perceptions of enviornment to stringent safety standards is ideal but no small order. ILO have identified workplace health issues that include stress, bullying, conflict, alcohol and drug abuse and mental health disorders[4]. Offering more than guidelines and awards, the ILO proactively has 38 up-to-date instruments relevant to OSH to provide a framework for employers to improve working conditions[5]. The ILO has also designed the SOLVE training package to better integrate workplace health promotion into occupational safe and healthy measures at the enterprise level. This program offers training to prevent psychological risks and promote health and wellbeing at work through policy design and action.[4]

Overall, these international entities are not only anecdotally recognizing the need for a more holistic wellbeing framework, but actively working to set policy and standards. These policies and standards to reflect this framework are informed by conceptual definitions and increasingly empirical measures.

Power DMS
HKS 2014. Orlando, FL.
Photogarpher: Nick Seago

CDC
Good health, positive social relationships and availability and access to basic life resources

OECD
Twenty-three indicators across eleven domains, from income to housing, life expectancy and time off from work

APA
Employee involvement, work-life balance, training and development and employee recognition

ILO
quality and safety of the physical environment, to how workers feel about their work, their working environment, the climate at work and work organization

VALUE + INVESTMENT: EXAMPLES OF APPLICATION

When it comes to seeing just how measurements, insights and recommendations apply, it is interesting to look to some industry leaders' own stance on what wellbeing means to them and how wellbeing impacts the environment of their workplace— either through design or amenity offerings/programming. For example, technology leaders like Google, Facebook and Twitter provide free or subsidized fresh food and access to fitness opportunities for their employees during the workday. PepsiCo offers on-site/on-campus medical facilities for employees to access free preventative care like annual physicals/exams and provide follow-up treatment. Convenient, on-site amenities like these afford employees the ability to take less time away from work to accomplish these tasks— thus bolstering the company's bottom line, and increasing employee likelihood to participate. The financial incentives for these workplace wellbeing initiatives is compelling; employers can save on operating costs while ensuring they have happier and healthier employees. However, industry interventions and offerings are often rooted in assumed rather than empirical value to end-users and the company's profit margins. The assessment of a return on investment (ROI) for wellbeing-focused strategies is particularly challenging because of the lack of consistent metrics and clear frameworks to understand and measure wellbeing. However, some organizations are taking the lead in this effort to empirically assess wellbeing.

WHAT ARE INDUSTRY FRAMEWORKS AND MEASURES?

Gallup-Healthways
In 2008, Gallup partnered with Healthways to begin measuring how people feel about and experience their daily lives. Called the Gallup-Healthways Well-Being Index®[6], it captures information about both individuals and larger populations to identify and prioritize key factors related to wellbeing to inform wellbeing improvement strategies at worker, organizational and community levels. The Gallup-Healthways Well-Being Index® includes more than 2.3 million survey responses and provides a comprehensive view of wellbeing across five elements: purpose, social, financial, community and physical. The on-going study reveals that levels of wellbeing correlate with healthcare utilization and cost, and productivity measures such as absenteeism, presenteeism and job performance. These primary outcomes are then related to organizational and economic vitality.[7]

ARCHITECTUAL AND DESIGN INDUSTRY DISCUSSION

Industry leaders within the architectural and design industry have also engaged in discussion centered on the relationship between workspace design and wellbeing, but at a much more general and yet equally specific level. This industry discussion lacks a cohesive framework that evaluates both the individual and the environment in tandem. Two examples that are emergent in the space are the WELL Building Standard (developed by Delos and administered by the International WELL Building Institute) and the Fitwel certification (being launched by the CDC and Center for Active Living in 2017) respectively.

The WELL Building Standard
The WELL Building Standard is based on the application of a wellbeing framework. This standard builds upon previous, more individual and environmentally focused frameworks such as LEED (sponsored by USGBC and certified by the Green Business Certification Inc.) to promote design choices like the presence of fitness facilities, visibility of stairs and other, more physical activity related aspects of design, spaces for rest and restoration, and environments that afford healthy dietary options[8]. Each of the goals set forth by the WELL Building Standard are aimed at promoting both a "well" environment and "well" occupants using over 100 features across seven categories or "Concepts": air, water, nourishment, light, fitness, comfort and mind. Each of these features are identified as "Preconditions" (for baseline WELL certification) or "Optimizations" (enhancements which determine the level of certification above baseline).[9] In line with Gallup-Healthways' approach, the concept of wellbeing is beginning to be explored as interconnected and interdependent factors able to be measured. The standard also continues to bridge the fields of real estate and environment with architecture and design.[6]

Fitwel Certification
The Center for Active Design is beta launching (with a full release in 2017) the Fitwel rating and certification program for healthy workplaces that is evidence-based, wide-ranging and economical.[10]

Fitwel is a web-based scorecard consisting of more than sixty benchmark criteria (yet to be released) organized by sections of a building, from the lobby to the cafeteria, which generates a numeric score at the completion of the scorecard. The scorecard has seven health impact categories as a structure for assessment: provides healthy food options, instills feelings of wellbeing, promotes occupant safety, impacts community health, reduces morbidity and absenteeism, social equality for vulnerable populations and increases physical activity. The Fitwel program has "a vision for a healthier future where every building is enhanced to support the wellbeing of its occupants, and support healthy communities." [11]

INDUSTRY WELLBEING FRAMEWORKS AND MEASURES

Name	Originator/ Sponsor	Values/ Dimensions	Scale/ Measures	Date Originated
Better Life Index	OECD Organisation for Economic Co-operation and Development	23 indicators grouped into 11 dimensions: Community • Education • Environment • Governance • Health • Housing • Income • Jobs • Life Satisfaction • Safety • Work-Life Balance	1-10	May 2011
Building Standard (WELL)	Developed by Delos, administered by the International WELL Building Institute and certified by Green Business Certification Inc. (which does LEED)	100+ Features (performance-based or descriptive standards) and 7 Concepts: (Preconditions or optimizations) Air • Water • Nourishment • Light • Fitness • Comfort • Mind	Silver Gold Platinum	V1 2016
Healthyways Well-Being Index	Gallup-Healthways	Purpose • Social • Financial • Community • Physical	0-100 (previously 0-10)	2008
Fitwel	Developed by the CDC and GSA, administered by the Center for Active Design	60+ benchmark criteria organized by sections of the building 7 Impact Categories Provides healthy food options • Instills feelings of wellbeing • Promotes occupant safety • Impacts community health • Reduces morbidity and absenteeism • Social equality for vulnerable populations • Increases physical activity	40-140	Pilot 2016 Launch 2017
LEED (Leadership in Energy & Environmental Design)	U.S. Green Building Council	Location and Transportation • Sustainable Sites • Water Efficiency • Energy and Atmosphere • Materials and Resources • Indoor Environmental Air • Innovation • Regional Priority	0-100 Certified 40-49 Silver 50-59 Gold 60-79 Platinum 80+	1994

The table above, while not exhaustive, represents a sampling of larger and more structured wellbeing frameworks. Despite various measures and standards for wellbeing, a consistent, comprehensive framework is lacking. The workplace wellbeing series is a larger initiative to identify a comprehensive framework around wellbeing and the built environment. The most direct (and evident) measure of wellbeing is arguably the employees' own self-reported perception of wellbeing within the domains of both life and at work. In conducting a wide scan of the literature and input from industry experts, the parameters were identified for worker wellbeing.

With so much discussion about the importance of wellbeing within the workplace, there is a need to understand implications for design and construction, and assess how the design of the physical environment can influence a worker's perception of wellbeing. Based on through review, our team has identified 5 key parameters for worker wellbeing.

PARAMETERS FOR WORKER WELLBEING

1. **Life satisfaction**

2. **Job satisfaction**

3. **Physical health**

4. **Mental health**

5. **Organizational commitment**

WHAT IS THE IMPORTANCE OF CHOICE AND PERSONALITY?

Parallel to the growing interest in workplace wellbeing is an ongoing debate on open offices versus private offices; This debate also holds implications towards needing to design for different personalities. Susan Cain's work, "Quiet: The Power of Introverts in a World That Can't Stop Talking" [12], argues that modern Western culture misunderstands and undervalues the traits and capabilities of introverted people. If personality is something that needs to be considered in office design, in addition to just maximizing space real estate, how do we begin to negotiate this in workspace design?

Outside of industry trends and anecdotal evidence, there is limited empirical literature exploring the growing interest about if and to what extent open layouts is affording more choice in the workplace. A small but compelling study of 172 student in German universities were asked to rank different jobs that combined either a more traditional, modernist, or post-industrial architecture. Results suggest that

post-industrial architecture ("a flat, transparent façade with an open office layout and areas for recreation") was preferred over a modernist office, with participants willing to forego an average of €4,700 (or roughly 10% of their starting salary) to have a job with this kind of work environment.[13] Growing interest in how open offices, and choice in the workplace, can address individual needs based on different personality types requires further, empirical study.

If individuals' needs matter, and choice and control are believed to influence wellbeing, then we need to understand where choice and personality fall into the dialogue about workplace wellbeing. Further, if workplace wellbeing is truly the overall objective, examining the ways in which each of these pieces (the environment, the individual, an occupants choice/control, and employee wellbeing) work together is crucial. Towards this end the research seeks to answer these below qustions.

OUR RESEARCH QUESTIONS

What is wellbeing and how can we assess it in a workplace environment via worker self-report?

How do individual differences, especially personality traits, impact worker perceptions of wellbeing?
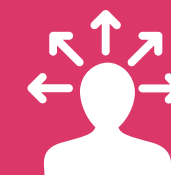
Can perceived choice (and control) over one's environment be a strategy to improve worker wellbeing - regardless of personality type?

What elements and specific strategies of workplace design can be used to improve employee happiness with choice and control in their workplace?

HARVEST

03 METHODOLOGY

METHODOLOGY

To address these questions, a survey tool was developed based on an extensive review of the literature and utilized several existing tools (described below) Specifically, the questionnaire focused on measures of wellbeing, perceptions of cho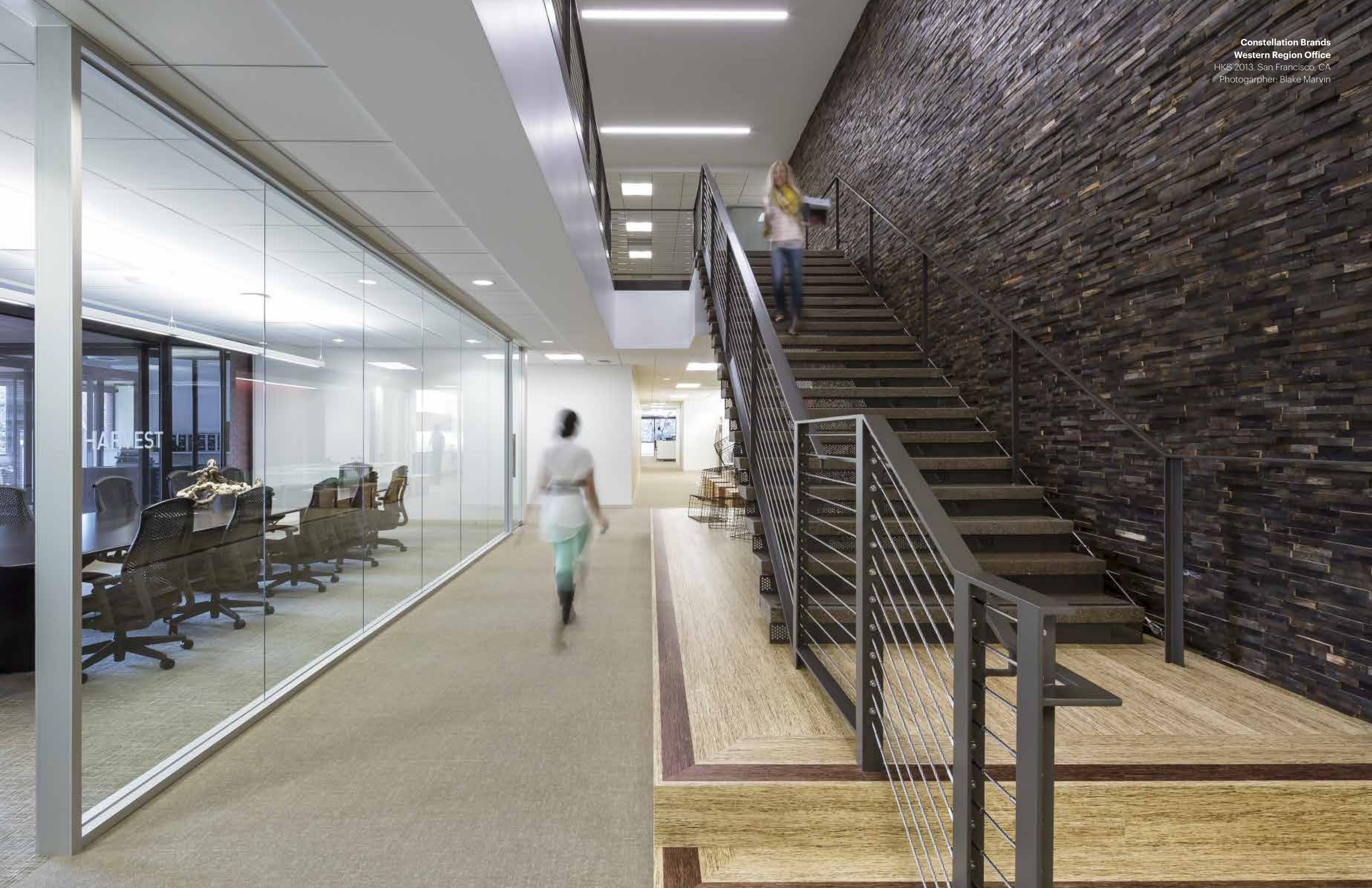ice and control, and personality. Overall, the survey tool was constructed, internally tested (by three expert evaluators for face validity) and then piloted externally for construct validity with 51 survey respondents through an unbiased, third-party, independent vendor to conduct a panel survey (Questionpro). The final tool was administered to an external panel via the same survey provider.

572 panel participants were compensated at a competitive rate on this platform for their participation. To be eligible for participation, workers had to be full-time knowledge-workers (i.e., "someone whose job primarily involves handling or using information") at their current company. Because we were interested in the influence that workplace environment has on knowledge workers, workers who worked from home more than 2 times per week were excluded from our study.

Participants were asked basic demographic questions (age, gender, ethnicity, education) as well as the location of office, position, hours worked, type of office and type of industry and company size. In addition to demographic questions, participants were also given the Ten Item Personality Inventory (TIPI)[14] measure the Big Five personality dimensions (Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness to Experience). This scale measures the Big Five using a one to seven likert scale.

HOW DID WE MEASURE WORKER WELLBEING?

To assess worker perceptions of their own wellbeing we asked about life satisfaction, sense of life purpose, and physical and mental health. Life satisfaction was measured with the widely used and validated Satisfaction With Life Scale (SWLS)[15]. The SWLS is a brief 5- item metric that demonstrates high levels of reliability and validity. Items of the SWLS present statements about participants' global perception of their life (e.g., "I am satisfied with my life." So far, I have gotten the important things I want from my life."), and participants are asked to rate their agreement with each statement on a 7-point Likert scale (1= strongly disagree, 7 = strongly agree). A question on life purpose was added.

In addition to asking about life satisfaction with the SWLS, we also asked about satisfaction within the domain of workers' jobs. We adapted the SWLS to reflect job satisfaction. Specifically, the items addressed: worker job satisfaction, the feeling that one's job gives one a sense of purpose, feeling as though one's job provides opportunities for creativity and innovation, satisfaction with one's work-life balance, the likelihood of one staying at their current company, commitment to one's company, feeling as though one's values align with the values of his or her company, feeling as though one belongs within their office, and that their office fits their personality. Finally, we also asked

participants single item measures related to each worker's level of physical and mental health. These items were rated on a 7-point Likert scale (1= strongly disagree, 7 = strongly agree).

To measure perceived choice and control over one's workplace environment, participants were asked a series of questions on a 5-point Likert scale ("I feel as though I have..."1 = no control/ choice, 5 = complete control/ choice). In addition to global measures of perceived choice/control, workers were asked about their perceived control over their ability to adjust their furniture arrangement, work surfaces, chair, location of their computer/ primary work surfaces, their personal privacy, who could view their computer screen, the temperature, lighting and noise levels within their office. Additionally, workers were asked about their perceived choice over the personalization of their office, the type of furniture they had, the type of lighting, the type of workspace in which they could complete their tasks, the type of technology they used, their work schedule, and their ability to telecommute. Finally, to get a global sense of satisfaction of their perceptions of control and choice in their workspace, workers were asked how happy they were with both their overall perceived level of control and overall choice in their workspace.

Zev Yaroslavsky Family Support Center
HKS 2015, Los Angeles, CA.
Photographer: Blake Marvin

INDUSTRY WELLBEING SCALES

Name	Structure	Scale
Satisfaction with Life Scale (SWLS)	5 questions	1= strongly disagree 7 = strongly agree
Ten Item Personality Inventory (TIPI)	10 questions	1= strongly disagree 7 = strongly agree
Job Satisfaction (Modified version of the SWLS)	5 questions	1= strongly disagree 7 = strongly agree

OUR WELLBEING SCALE

Worker job satisfaction

The feeling that one's job gives one a sense of purpose

Feeling as though one's job provides opportunities for creativity and innovation

Satisfaction with one's work- life balance
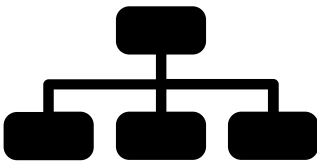
The likelihood of one staying at their current company

Commitment to one's company

Feeling as though one's values align with the values of his or her company
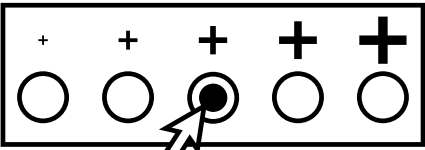
Feeling as though one belongs within their office

One's office fits their personality
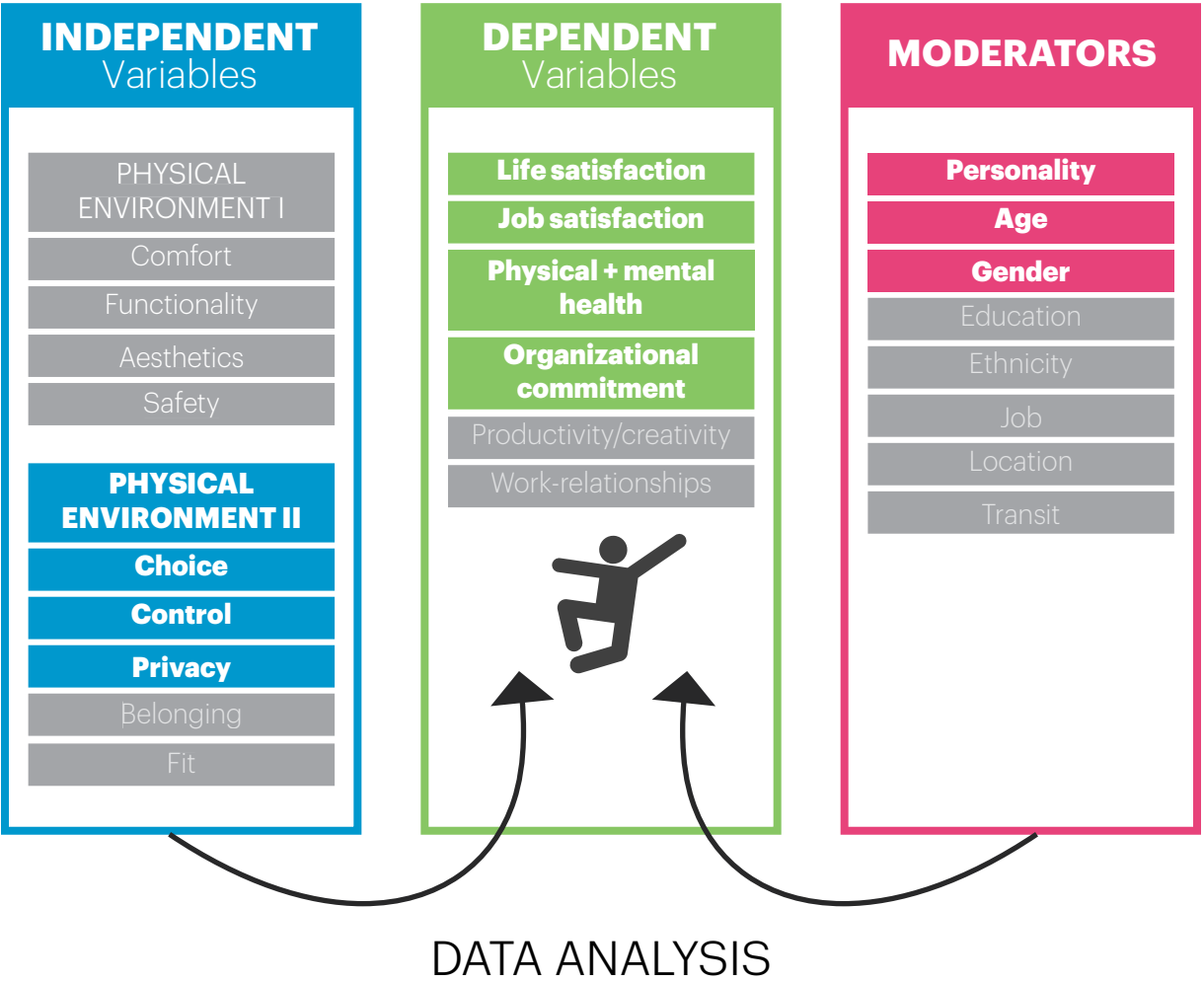
OUR STRUCTURE

Single questions

OUR SCALE

1 = no control/ choice
5 = complete control/ choice
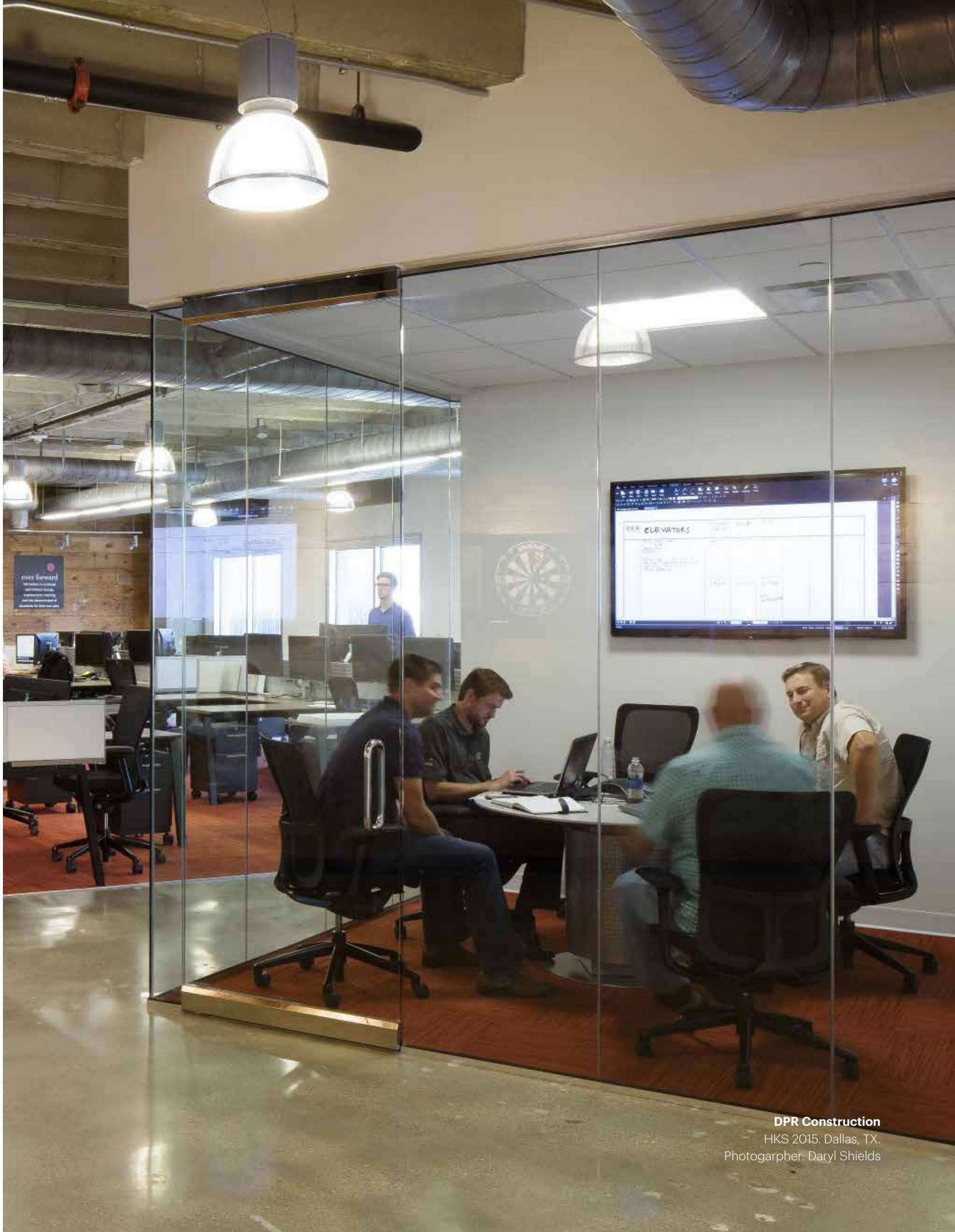
WHAT WAS OUR CONCEPTUAL FRAMEWORK?

Our conceptual framework for the questionnaire, developed by a thorough review of the literature and industry expertise, is shown below. Items in bold are the focus of this study's investigation and analysis in this report. The non-bolds are items we will discuss in future publications.

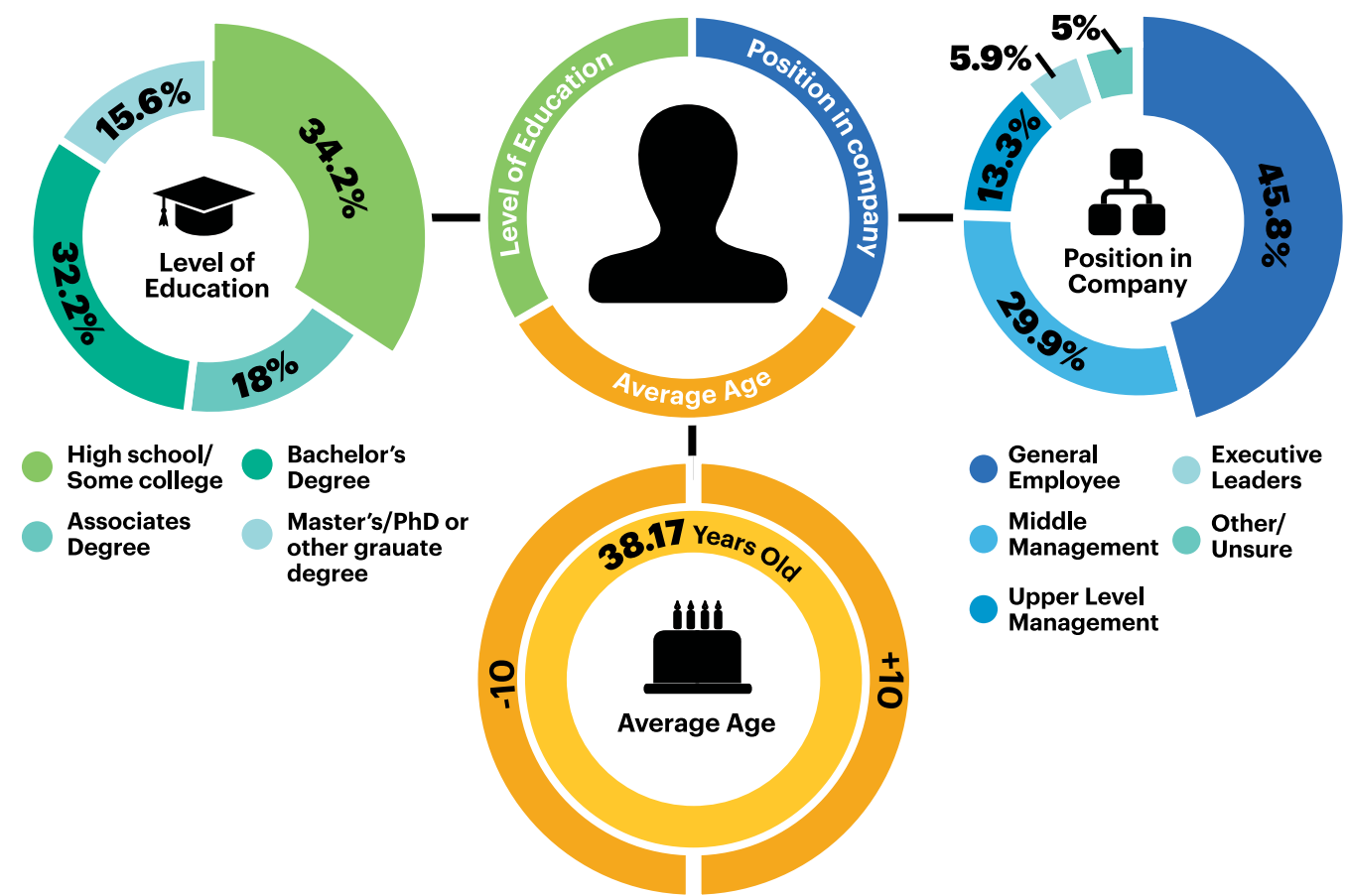| INDEPENDENT Variables	DEPENDENT Variables	MODERATORS
PHYSICAL ENVIRONMENT I	**Life satisfaction**	**Personality**
Comfort	**Job satisfaction**	**Age**
Functionality	**Physical + mental health**	**Gender**
Aesthetics	**Organizational commitment**	Education
Safety	Productivity/creativity	Ethnicity
PHYSICAL ENVIRONMENT II	Work-relationships	Job
Choice		Location
Control		Transit
Privacy		
Belonging		
Fit		

DATA ANALYSIS

First we computed descriptive statistics on all variables in question. Next we computed t-tests and correlations to begin exploring the relationships between the variables. To test the predictive relationships between variables, multiple regressions were also computed. First, bivariate correlations were computed between each criterion variable and relevant possible predictor variables only. Variables with significant correlations were selected for further analysis. Next, hierarchical multiple regression analyses were implemented to determine if those identified criterion variables could be predicted from the predictor variables. Personality variables and type of office were included in the first and second increments respectively for those with significant correlation. Happiness with choice/control and specific variables regarding choice/control were included in the third and fourth increments, again for those with significant correlation. Details for each of the models are described in the follow pages alongside the final results.

Privacy was opeationalized using type of assigned workspace as a proxy. It was arranged on a conceptual continuum from private office to open office with desks and partitions. A hierarchical approach was applied to understand specific environmental factors, then perceived choice and control of them and ultimately their happiness with choice and control.

This paper reports all statistically significant values with a minimum p-value of 0.05 (this includes p-values of 0.05 or less).
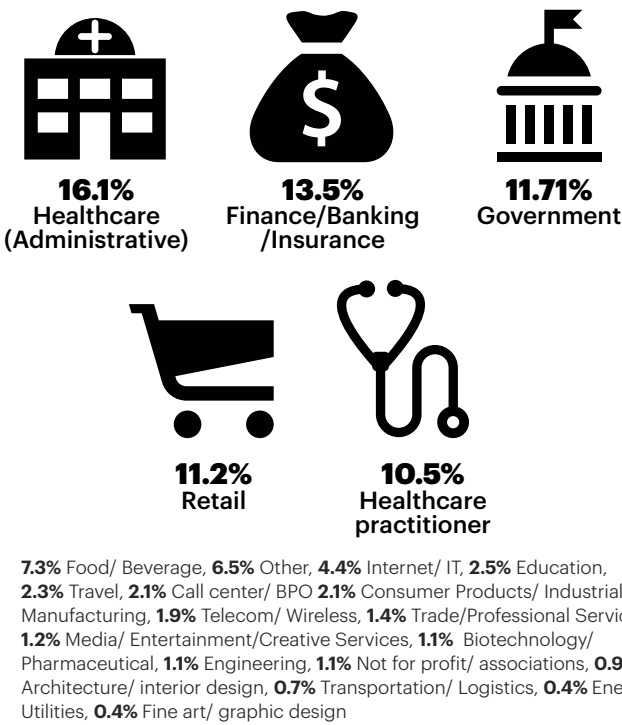
WHO WERE OUR PARTICIPANTS?

Level of Education
- 34.2%
- 32.2%
- 18%
- 15.6%

Position in Company
- 45.8%
- 29.9%
- 13.3%
- 5.9%
- 5%

Average Age
- 38.17 Years Old
- -10   +10

Level of Education
- ● High school/ Some college
- ● Associates Degree
- ● Bachelor's Degree
- ● Master's/PhD or other grauate degree

Position in Company
- ● General Employee
- ● Middle Management
- ● Upper Level Management
- ● Executive Leaders
- ● Other/ Unsure

572 knowledge workers (75.3% female, 24.7% male, <1% transgender or other identification) participated in the present study. The average age of our participants was 38.2 years (SD = 10.8). We also asked participants about their level of education and results conveyed that 34.2% had received a high school diploma or some college but no degree, 18% hold an associate's degree, 32.2% hold a bachelor's degree, and 15.6% hold a masters, doctorial, or other graduate degree. Finally, participants were asked to identify the kind of position that they had within their company. Results showed that 45.8% held positions as general employees, 29.9% were middle management, 13.3% were upper level management, 5.9% were executive leaders and the remaining 5% identified as other or unsure.

WHERE DID OUR PARTICIPANTS WORK?

PARTICIPANTS' INDUSTRIES

- **16.1%** Healthcare (Administrative)
- **13.5%** Finance/Banking /Insurance
- **11.71%** Government
- **11.2%** Retail
- **10.5%** Healthcare practitioner

7.3% Food/ Beverage, **6.5%** Other, **4.4%** Internet/ IT, **2.5%** Education, **2.3%** Travel, **2.1%** Call center/ BPO **2.1%** Consumer Products/ Industrial/ Manufacturing, **1.9%** Telecom/ Wireless, **1.4%** Trade/Professional Services, **1.2%** Media/ Entertainment/Creative Services, **1.1%** Biotechnology/ Pharmaceutical, **1.1%** Engineering, **1.1%** Not for profit/ associations, **0.9%** Architecture/ interior design, **0.7%** Transportation/ Logistics, **0.4%** Energy/ Utilities, **0.4%** Fine art/ graphic design

Participants came from a wide array of industries including architecture, education, finance, government, and healthcare—among other industries (see figure to left). All of our participants were residents of the U.S., but 81.1% worked for companies that only had in the US offices, and 18.9% had offices inside and outside of the U.S. Finally, we asked participants what type (i.e., private office, cubicle, etc.) of assigned workspace they had.

78% worked in assigned spaces

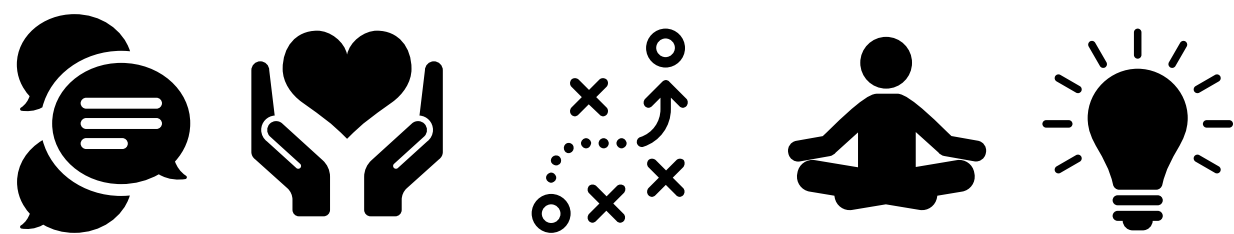**21.9%** worked in unassigned workspaces

Further, of our participants 33.3% had a private office, 20.9% a shared office, 20.7% an open office with cubicles, 5.8% an open office with high partitions, 6.7% an open office with low partitions, and 12.6% an open office with just desks and no partitions.

- **5.8%** Open office with high partitions
- **6.7%** Open office with low partitions
- **12.6%** Open office with no partitions
- **20.7%** Open office with cubicles
- **33.3%** Private offices
- **20.9%** Shared offices
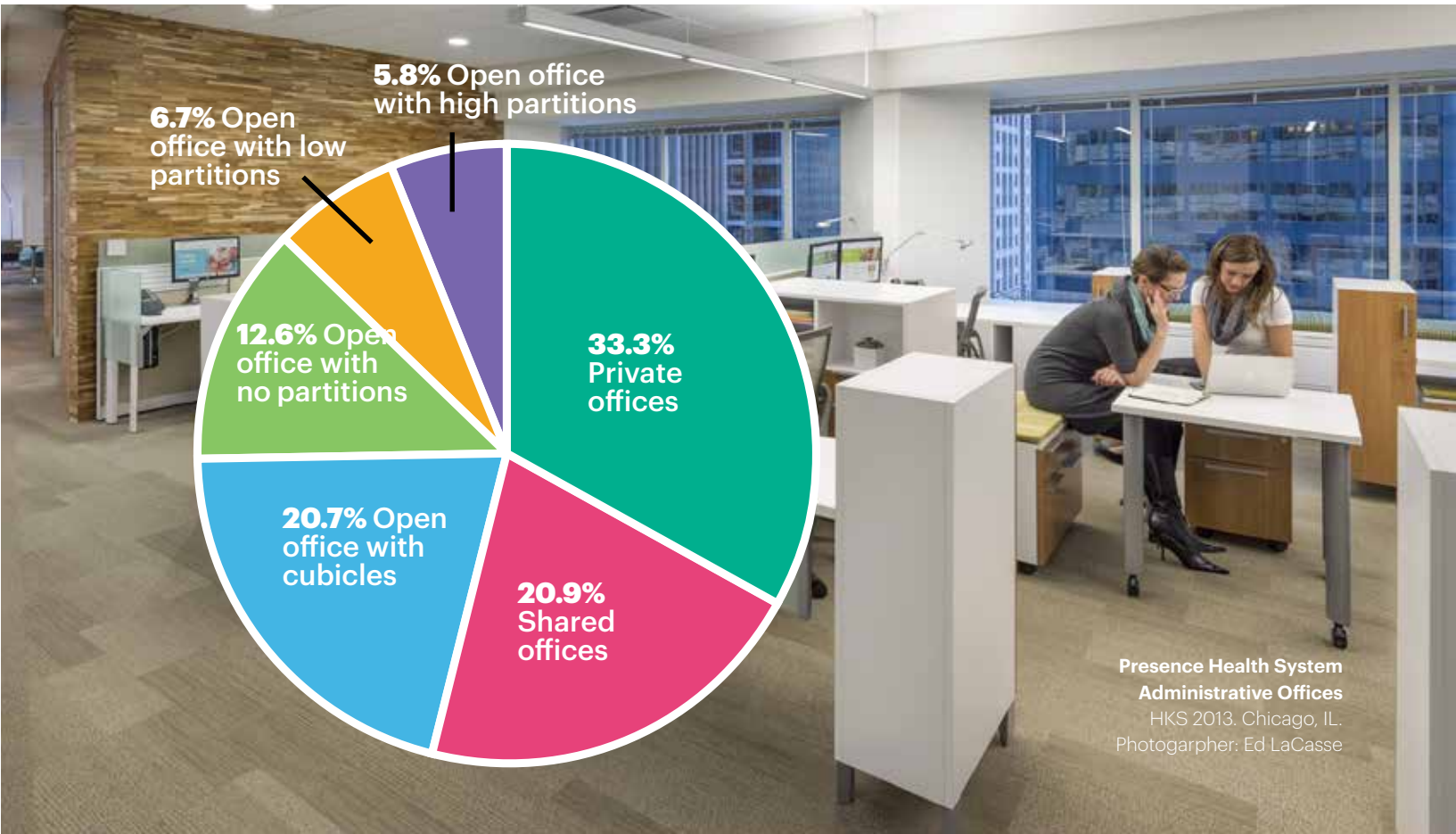
Presence Health System Administrative Offices
HKS 2013. Chicago, IL.
Photogarpher: Ed LaCasse

HOW DO WE MEASURE PERSONALITY?

The most widely accepted and validated tool for measuring personality is the Five Factor Model-- i.e., the "Big Five" personality framework. This framework measures personality on 5 broad dimensions (e.g., Extroversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness to Experience). Within this framework every individual posses some level of each of these five traits. Each trait is measured on a spectrum (e.g., level of "Introversion" to Extroversion", level of "Disagreeableness to Agreeableness", etc.)
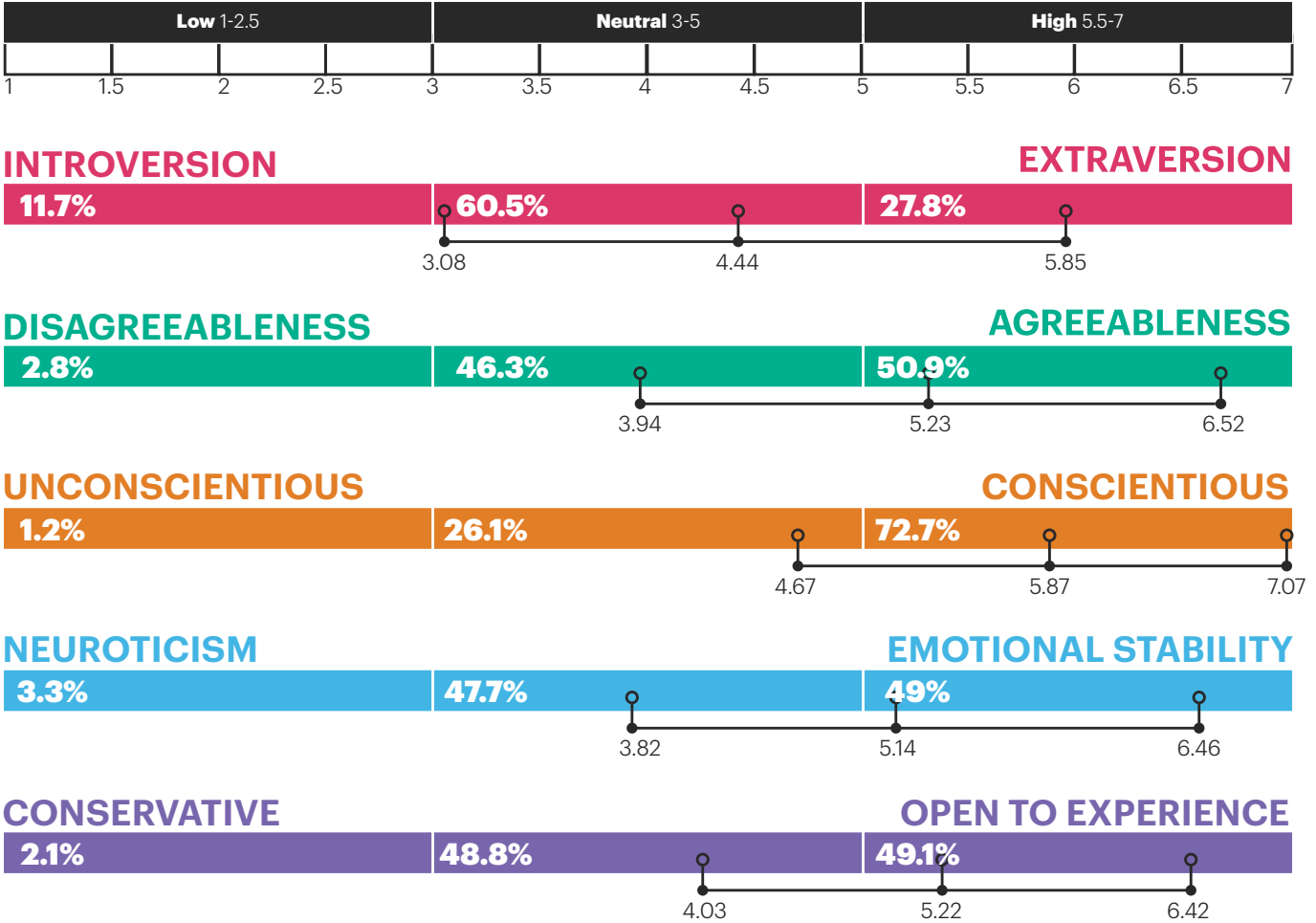
	Extraversion	Agreeableness	Conscientiousness	Emotional Stability	Openness
High	The life of the party, very assertive, very talkative, not only enjoys being around others but thrives in social environments	Kind, warm, concerned about making sure others feel at ease, easily empathizes with other's emotions, compassionate, goes with the flow, can be overly trusting	Detail oriented, always planning and looking ahead, highly responsible, rarely finds themselves unprepared, highly dependable and organized, strong sense of duty	Unflappable, calm, relaxed, not easily startled, tends to not worry/sweat the small the stuff, tend to have a very stable, unmoving mood	Enjoys thinking about abstract ideas, imaginative, intellectually curious, affinity towards art, literature, music, craves variety, aesthetically oriented, enjoys self inquiry
Low	Tends to be more quiet and reserved, recharges energy by spending time alone	Sometimes overly critical, puts own needs first, not keenly aware of what others' feelings, have difficulties trusting others, less likely to comply and go with the flow	Less structured and organized, tends to be a little more scattered, don't always look before they leap, more laid back	More anxious, a worrier, highly aware of their surroundings and situations, sensitive to their environment, tend to be a bit moody and experience highs and lows	Likes tradition, more conventional in how they approach situations, likes concrete concepts and thinking, likes to stick to what they know

WHAT PERSONALITIES DID OUR PARTICIPANTS HAVE?

For our sample, the Big Five means were 4.44 (SD = 1.41) for Extraversion, 5.23 (SD = 1.29) for Agreeableness, 5.87 (SD = 1.20) for Conscientiousness, 5.14 (SD = 1.32) for Emotional Stability, and 5.22 (SD = 1.20) for Openness. When assessing reliability of each measure and item average scores yielded what would be expected for a general like this. It is important to note that all people have some level of all five traits; however, it's more a matter of where one falls on the spectrum within each trait from high to low.

HOW DID OUR PARTICIPANTS REPORT THEIR PERSONALITIES?

Low 1-2.5	Neutral 3-5	High 5.5-7

1   1.5   2   2.5   3   3.5   4   4.5   5   5.5   6   6.5   7

INTROVERSION — **EXTRAVERSION**
11.7% | 60.5% | 27.8%
3.08   4.44   5.85

DISAGREEABLENESS — **AGREEABLENESS**
2.8% | 46.3% | 50.9%
3.94   5.23   6.52

UNCONSCIENTIOUS — **CONSCIENTIOUS**
1.2% | 26.1% | 72.7%
4.67   5.87   7.07

NEUROTICISM — **EMOTIONAL STABILITY**
3.3% | 47.7% | 49%
3.82   5.14   6.46

CONSERVATIVE — **OPEN TO EXPERIENCE**
2.1% | 48.8% | 49.1%
4.03   5.22   6.42

The chart above shows an adaptation of Gosling, Rentfrow and Swann's original scale (2013) using both the average score with bars showing the upper and lower extension of the standard deviation. The percentages within each solid bar section disclose the percentage of respondents whose average fell within that range (either low, neutral or high).
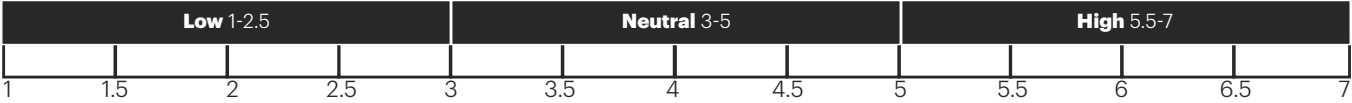
HOW DID WORKERS REPORT ON WELLBEING?

Theoretical and factor analysis of the results revealed multiple components of worker wellbeing. In this initial paper we focus on and address 5 main components of worker wellbeing: life satisfaction, job satisfaction, physical healthy, mental health and organizational commitment.

The chart below shows both the average score with bars showing the upper and lower extension of the standard deviation. The percentages within each solid bar section disclose the percentage of respondents whose average fell within that range (either low, neutral or high).

Perceptions of physical and mental health are relatively lower than reported levels of life and job satisfaction as well as commitment to organization.
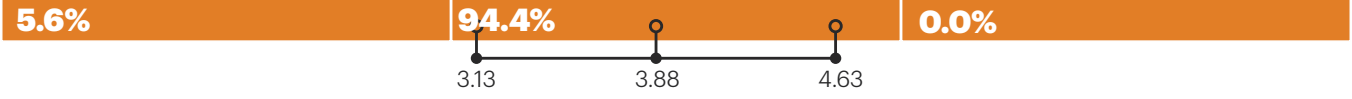
HOW OUR PARTICIPANTS REPORT THEIR WELLBEING

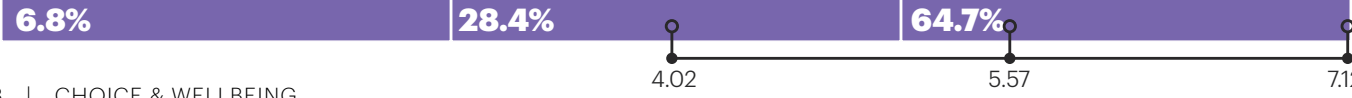| Low 1-2.5	Neutral 3-5	High 5.5-7

1   1.5   2   2.5   3   3.5   4   4.5   5   5.5   6   6.5   7

LIFE SATISFACTION

8.6%	38.7%	52.7%

3.64   5.18   6.72

JOB SATISFACTION

10.3%	32.3%	57.4%

3.67   5.28   6.89

PHYSICAL HEALTH

5.6%	94.4%	0.0%

3.13   3.88   4.63

MENTAL HEALTH

3.7%	96.3%	0.0%

3.29   4.04   6.52

ORGANIZATIONAL COMMITMENT

6.8%	28.4%	64.7%

4.02   5.57   7.12

HOW DO INDIVIDUAL DIFFERENCES, ESPECIALLY PERSONALITY TRAITS, IMPACT WORKER PERCEPTION OF WELLBEING

First, correlations were run between personality characteristics, age and gender and our five indicators of worker wellbeing (life satisfaction, job satisfaction, organizational commitment, physical health and mental health). Initial correlations revealed that in most cases neither age nor gender was significantly related to to indicators of wellbeing. Significant correlations werefound between personality factors and five indicators. Given the strong correlations a regression analysis was conducted to assess if personality, could in fact, predict workers' self-reported wellbeing. These findings are summarized in the next page.

The findings raise some interesting insights for researchers to investigate further. For example, we found that level of Extraversion was positively correlated to all wellbeing indicators. By contrast Conscientiousness was inversely correlated (in other words, the less conscientious one is, the lower their self-reported levels of wellbeing). Interestingly, those who are more agreeable tend to actually have lower levels of life satisfaction compared to those are are more disagreeable. The implication of these findings in individual differences are beyond the scope of this study, however, future research should work to explore these interesting differences further.

	Life Satisfaction	Job Satisfaction	Organizational Commitment	Physical Health	Mental Health
Extraversion	+	+	+	+	+
Agreeableness	-	+	+	Ø	-
Emotional Stability	+	Ø	+	+	+
Open to Experience	-	+	Ø	Ø	-
Conscientious	Ø	-	-	-	-

+ Positive   **-** Negative   **Ø** No Correlation

HKS Headquarters
HKS 2013. Dallas,TX.
Photogarpher: Daryl Shields

THE FOLLOWING PERSONALITY TRAITS WERE IDENTIFIED AS PREDICTORS:
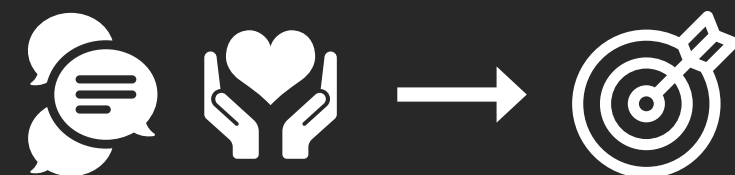
Extraversion and Emotional Stability predict high life satisfaction

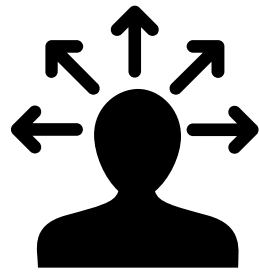**Extraversion, Agreeableness and Emotional Stability and openness predict high job satisfaction**

Extraversion, Agreeableness, Emotional Stability and Open to Experience predict strong organizational commitment

Extraversion and Agreeableness predict ability to focus

CAN CHOICE (AND CONTROL) OVER A WORKER'S ENVIRONMENT BE A STRATEGY TO IMPROVE WORKER PERCEPTION OF WELLBEING, REGARDLESS OF PERSONALITY TYPE?

Workers were asked about their happiness with choice, control, privacy, sense of belonging and sense of fit in their arrangement. All five of these physical environment questions were highly correlated ($p<0.05$) with key indicators of worker wellbeing;

Given the strong role of these traits in predicting general worker wellbeing, it was important to control for personality to assess if choice and control in the workplace, could predict perceptions of worker wellbeing above and beyond just the individual personalities of the workers themselves.

Therefore hierarchical regressions were run controlling for personality to address the impact of happiness with choice and control.

When controlling for personality, happiness with choice was found to be a predictor of life satisfaction, job satisfaction, both mental and physical health, organizational commitment and ability to focus.
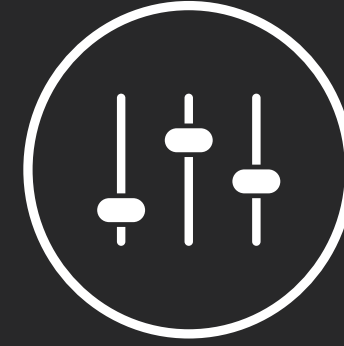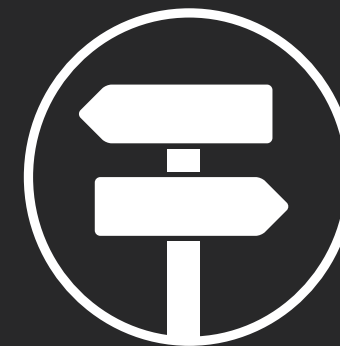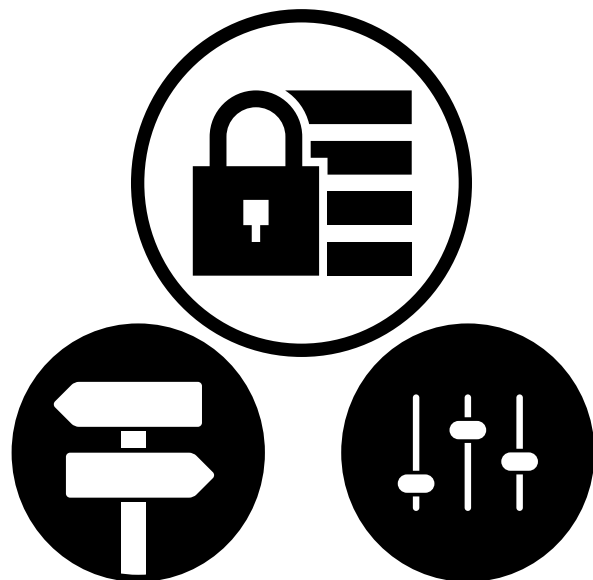
Similarly, when controlling for personality, happiness with control was found to be a predictor of life satisfaction, job satisfaction, both mental and physical health, organizational commitment and ability to focus.

What role does level of privacy play when considering happiness with choice and control?

Due to the fact office type has the potential to influence one's perception of space, it was important to control for this as well. To examine this question, first we looked at the relationship between happiness with choice and control as it relates to a worker's office type (i.e., how open or private each workers' office was).

Unsurprisingly, results indicated that the more private the workspace, the happier the worker tended to be with his or her choice and control over the environment.

Further inquiry also revealed that these findings were consistent regardless of whether or not a person was in an assigned or unassigned office space. In other words, **when people have more privacy, they are most satisfied with the choice and control they have within their workspace-- regardless of whether or not they have consistent ownership of that space** or are "borrowing" it for a work session.

When controlling for personality, **happiness with choice and happiness with control was still found to be a predictor of life satisfaction, job satisfaction, both mental and physical health, organizational commitment and ability to focus.**
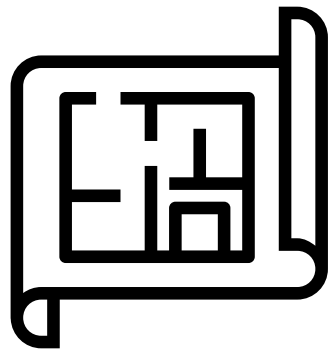
WHAT ELEMENTS OF THE WORKPLACE DESIGN, AND WHAT SPECIFIC STRATEGIES, CAN BE USED TO IMPROVE EMPLOYEE HAPPINESS WITH CHOICE AND CONTROL IN THEIR WORKPLACE?

Between choice/control and worker wellbeing, the next step was to assess which specific characteristics of the workplace could contribute to a worker's happiness with the choice and control they have over their workplace. Overall, choice over personalization of space was more highly related to happiness rather than choice over furniture type, etc. Overall, control over one's office chair was more highly rated than control over furniture arrangement etc. his suggests that a more personal/intimate scale of personalization is more impactful than general personalization, i.e. seat > space.

Analysis of happiness with choice and control and worker wellbeing was further broken down into assigned and unassigned spaces due to the inherent changes in level of choice/control in these two space types. See graphics on next page for key findings.

A small sampling of questions we asked about worker's physical work environments:
- Do you have a personal workspace assigned in your office?
- Which of the follow best describes your desk?
- How much privacy do you feel you have in your perosnal workspace?
- How many days per week do you eat lunch in the following places?
- How do you rate the air quality, lighting and noise in your office?

The following survey questions shed insight into the larger survey tool used in this study and suggest that a simple pre-design questionnaire could be formalized and incorporated as part of basic workplace design services due to their ability to uncover meaningful insights.

Vubiquity
HKS 2015. London, UK.
Photogarpher: Thierry Cardineau

ASSIGNED SEAT / UNASSIGNED SEAT

|	ASSIGNED SEAT	UNASSIGNED SEAT
HAPPINESS WITH CHOICE	• choice in lighting • choice in types of workspaces • choice in schedule	• ability to personalize • ability to choose different types of workspace
HAPPINESS WITH CONTROL	• having control over one's work surfaces	• having some level of control over their chair • personal privacy • lighting

05 DISCUSSION

WORKPLACE WELLBEING:
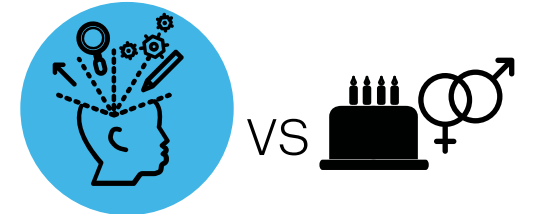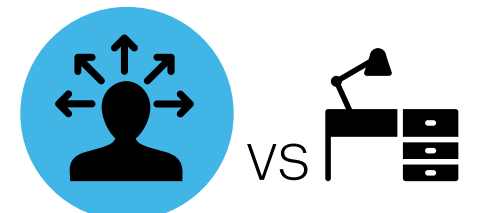
KEY TAKEAWAYS

 VS

Personality matters (more than age & gender)

 VS

Choice matters (regardless of level of privacy)
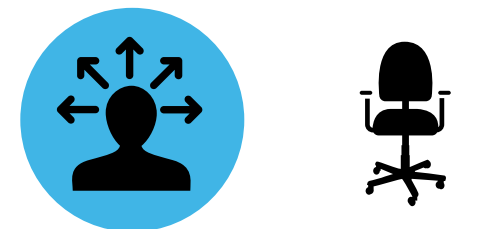
Access via choice matters (regardless of assigned/unassigned workspace)

MAKE CHOICE PERSONAL

KEY TAKEAWAYS

WHAT ARE THE KEY TAKE-AWAYS AND HOW DO THEY APPLY TO REAL DESIGN WORK?

Personality & Perception

Our biggest learning as a research team is that personality is a key component of worker wellbeing, and choice, as powerful as it can be, needs to be personal. We cannot expect to provide a range of neutral choices and expect that workers avail of those choices in order to enhance wellbeing. Choices have to address the needs of variable privacy, because different personalities may need a different level of privacy. This also holds true for control.

One issue that we have not addressed in detail is acoustic privacy- and acoustic privacy expectations based on personality type. This is an ongoing research initiative. The blending of personality variables with a universal palette of choices fundamentally changes the dialogue around choice in the workplace. If choice can impact wellbeing, and our results show it can, then lets empower it further by making choice personal.

Personalized Choice & Ownership

This marks the signal of a new paradigm of choice-based architectural design where custom solutions can be made for each employee by bringing together policy, place and technology choices- in unique ways to cater to the different needs of different personalities.

Policy, Place and Technology

Making choice personal requires a more comprehensive approach to design, extending our recommendations to tangential considerations that support the design intent matching inhabited reality of spaces. Perceptions of choice and control are directly and significantly impacted by these aspects. Decision fatigue, includes decisions about "where" to do this work. Comfy chairs and a variety of meeting spaces isn't the whole story. The engagement has to be organic, the technology has to support the movement and the culture/policies have to accept and embrace.
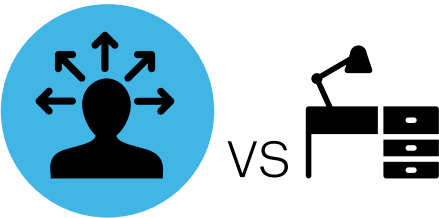
Continuing the Conversation

There is great potential to pursue more topic specific analysis to better understand key design considerations like privacy, noise/focus, comfort, workspace type and seating assignment.
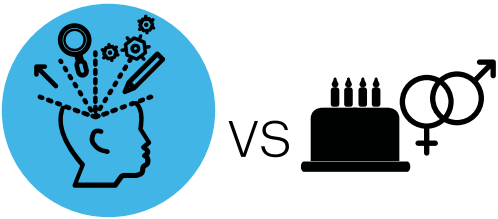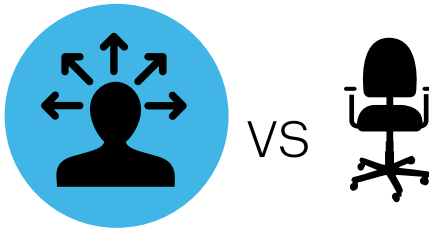

**Personality matters
(more than age & gender)**

**Choice matters
(regardless of level of privacy)**

**Access via choice matters
(regardless of assigned/unassigned
workspace)**

Gender and generational differences have received significant attention in the workplace literature, but personality remains an under studied area. Our findings, albeit with a relatively small sample size (572) revealed that of the three, age, gender and personality, only personality had a statistically significant relationship to worker perceptions of wellbeing. This implies that personality must be taken seriously in the workplace of today. If the level of extraversion implies a higher level of work/life satisfaction, it is only a reminder for us to be even more careful and sensitive to the needs of those who may be less extroverted. Working closely with HR to understand the personality make up of a workforce could be a tremendous opportunity to enhance workplace wellbeing

Recommendation: Do a Big 5 Personality Study before determining workplace solutions.

A large bone of contention in the workplace dialogue is the private vs open office debate. In this research we looked at type of office as simply a continuum, where every office type was coded by level of privacy. Not surprisingly, the higher the level of privacy afforded by the office, the higher was the perception of happiness with choice. But we stepped out of this debate, which is often driven by real estate rather than wellbeing concerns, by controlling for level of privacy in our analysis.

The results were revealing- when we control for the variance that a particular type of office, or type of personality, can cause, we find that happiness with choice and control can signficantly improve wellbeing. This finding held true regardless of whether workers had assigned or unassigned workspaces. This is important- it implies that allowing choice in a workplace, or control over one's workplace can be a powerful tool to improve workers perception of wellbeing, regardless of the type of office workers have.

Recommendation: Provide (healthy) choices and control so perception of wellbeing can translate to physical and mental health.

While happiness with choice and control were predictors of wellbeing, regardless of whether workers had assigned or unassigned spaces- our results indicate slight variability in what is important for workers who have assigned spaces vs those who dont. For both groups having choice in "types" of workspace is important; For those with assigned workspaces, abilty to personalize space is the second most important factor. On the other hand, for workers with unassigned work spaces, choice in lighting, and choice over schedule take precedence.

In our analysis of elements that predicted happiness with control we found that control over one's chair and level of privacy was more important for workers with assigned spaces, whereas control over workspace was more important for workers with unassigned spaces. it is likely that control oer workspace is taken as a given for those who have assigned spaces, but is an aspiration for those that do not.

Recommendation: Allow a range of different workspaces to reflect the different modalities of work workers may need to engage in- make these visible and accessible so their is a perception of choice. For hoteling stations make schedules transparent and provide some choice over lighting, and control over workspaces so they can have ownership

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