

**Taking a break is not a guilty pleasure: Improving employees' (Gen Y)  
well-being through work breaks using virtual reality**

by

Misun (Sunny) Kim

B.S., Sookmyung Women's University, 2008

A THESIS

submitted in partial fulfillment of the requirements for the degree

MASTER OF SCIENCE

Department of Hospitality Management  
College of Health and Human Sciences

KANSAS STATE UNIVERSITY  
Manhattan, Kansas

2020

Approved by:

Major Professor  
Dr. Jichul Jang

# **Copyright**

© © Misun (Sunny) Kim 2020.

## **Abstract**

Hospitality employees today are experiencing stressful work environments such as long working hours and irregular work schedules. The exposure to inhospitable experiences results in escalation of job stress, leading to impaired psychological well-being. Work breaks, time off when work-related tasks are not required, has been considered a feasible way to enhance employees' well-being. Previous studies have shown that work breaks are related to positive outcomes including alleviated work stress, fatigue, and increased well-being, yet there are still many unanswered questions. Thus, the current research provides empirical evidence to better understand the role of employee break room where employees spend during within-day breaks in increasing positive work-related outcome using Generation Y, born from 1982 to 2000. This study comprises two studies. Drawing from effort-recovery model (E-R Model) and the Conservation of Resources Theory (COR), Study 1 examined employees' perceptions of physical environment of employee break room (i.e., thermal comfort, air quality, lighting, acoustic quality, office layout, office furnishings, cleanliness, maintenance). In addition to that, how their perception towards the physical environment of the employee break room affects employees' psychological well-being through a mediator of work engagement is investigated. Going further, Study 2 focused on layout of the employee break room. Specifically, I attempted to examine whether a proper layout creating private spaces with individual pods in employee break room makes an impact on perceived workplace friendship opportunities and their positive affect.

For Study 1, an online survey using 311 Millennials employees who are currently working or have worked for any types of hospitality operations in the United States was conducted. For Study 2, the experiment in a pretest–posttest experimental design using Virtual Reality (VR) technique and was conducted using 90 hospitality employees. The participants wore a virtual reality headset, which allowed the participants to experience a realistic three-dimensional image of the staff break room that the participants could perceive as real. Participants were randomly presented with virtual reality models of the manipulated and existing physical environment of a staff break room.

As a result, in Study 1, physical environment of employee break room was positively related to work engagement. Work engagement was also positively associated to employees' psychological well-being. In addition, the partial mediating role of work engagement between

physical environment of employee break room and employees' psychological well-being was supported. The results of Study 2 showed that employees in employee break room with individual pods would report higher workplace friendship opportunities and positive affect.

This study contributes to the literature in at least three ways. First, this study provided empirical evidence regarding the importance of within-day breaks and employee break room in a hospitality setting. Also, the current study contributed to previous hospitality literature by adopting a methodological innovation. Participants are able to be fully immersed with a virtual environment and interact with it. Thus, adopting virtual reality technique allowed this study to overcome limits of experimental method. Thirdly, this research examined work engagement as an underlying link between physical environment of employee break room and employees' psychological well-being. Identifying this process is essential to better understand and to effectively manage their employees.

My thesis provides helpful guidance to practitioners to enhance employees' psychological well-being. Managers should maintain a favorable physical condition of the employee break room. Also, managers should configure employee break rooms in a way which employees can have opportunities both to mingle with coworkers and to secure their privacy concurrently by utilizing a movable wall or a partition.

**Keywords:** Work Breaks, Within-day Breaks, Physical Environment of Employee Break Room, Psychological Well-being, Virtual Reality Technique, Generation Y, Work Engagement, Workplace Friendship Opportunities, Positive Affect

# Table of Contents

|  |                        |
|--|------------------------|
| List of Figures .....  | viii                   |
| List of Tables .....   | ix                     |
| Acknowledgements .....   | x                      |
| Chapter 1 - Introduction.....  | 오류! 책갈피가 정의되어 있지 않습니다. |
| Employees' Psychological Well-being in the Hospitality Industry .....                    | 1                      |
| Problem Statements .....   | 2                      |
| Purpose of This Study .....  | 5                      |
| Research Questions .....   | 6                      |
| Significance of This Study .....   | 6                      |
| Definitions .....  | 8                      |
| Chapter 2 - Literature Review.....   | 10                     |
| Background Information .....   | 10                     |
| Within-day Work Breaks .....   | 10                     |
| Physical Environment of Employee Break Room .....  | 15                     |
| Work Engagement .....  | 17                     |
| Layout of Open-designed Employee Break Room .....  | 20                     |
| Hypothesis Development .....   | 21                     |
| Overarching Theories .....   | 21                     |
| Effort-Recovery Model (E-R Model) .....  | 21                     |
| The Conservation of Resources Theory (COR) .....   | 22                     |
| Study 1 .....  | 24                     |
| Physical Environment of Employee Break Room and Work Engagement .....                    | 24                     |
| Work Engagement and Psychological Well-being .....                                       | 26                     |
| Study 2 .....  | 28                     |
| Layout of Open-designed Employee Break Room and Positive Affect .....                    | 28                     |
| Layout of Open-designed Employee Break Room and Workplace Friendship Opportunities ..... | 30                     |
| Proposed Research Model.....   | 31                     |
| Chapter 3 - Method .....   | 33                     |

|   |    |
|---|----|
| Study 1 Research Design .....   | 34 |
| Study 1 Target Population and Sample.....                                 | 35 |
| Study 1 Pilot Test.....   | 36 |
| Study 1 Data Collection Procedures .....                                  | 37 |
| Study 1 Measurements.....   | 38 |
| The Physical Environment of Employee Break room .....                     | 38 |
| Work Engagement .....   | 38 |
| Psychological Well-being .....  | 39 |
| Control Variables .....   | 39 |
| Study 2 Research Design .....   | 43 |
| Study 2 Target Population and Sample.....                                 | 44 |
| Study 2 Pilot Test.....   | 44 |
| Study 2 Data Collection Procedures .....                                  | 45 |
| Study 2 Measurements.....   | 46 |
| Positive Affect .....   | 47 |
| Workplace Friendship Opportunities .....                                  | 47 |
| Chapter 4 - Results.....  | 49 |
| Study 1 The Profile of The Respondents .....                              | 49 |
| Study 1 Confirmatory Factor Analysis .....                                | 50 |
| Study 1 Test of Hypotheses .....  | 51 |
| Study 2 The Profile of The Respondents .....                              | 54 |
| Study 2 Test of Hypotheses .....  | 55 |
| Chapter 5 - Discussion .....  | 57 |
| Summary of Major Findings.....  | 57 |
| Theoretical Implications .....  | 58 |
| Practical Implications .....  | 61 |
| Limitations & Future Studies.....   | 62 |
| Conclusion .....  | 64 |
| References .....  | 66 |
| Appendix A – Institutional Review Board Approval Letter for Study 1 ..... | 92 |
| Appendix B – Institutional Review Board Consent Form for Study 2 .....    | 94 |

|  |     |
|--|-----|
| Appendix C – Surveys for Study 1 .....               | 97  |
| Appendix D – Surveys for Study 2 .....               | 103 |
| Appendix E – Pictures of Virtual Reality Video ..... | 10  |

## **List of Figures**

|   |    |
|---|----|
| Figure 2.1 Proposed Research Model .....                | 31 |
| Figure 3.1 The Whole Process of The Current Study ..... | 33 |



## **List of Tables**

|   |    |
|---|----|
| Table 2.1 Summary of The Main Work Breaks Studies.....            | 11 |
| Table 3.1 Measurement for Study 1.....                            | 41 |
| Table 3.2 Measurement for Study 2.....                            | 48 |
| Table 4.1 The Profile of The Respondents for Study 1. ....        | 50 |
| Table 4.2 Results of Confirmatory Factor Analysis. ....           | 51 |
| Table 4.3 Means, Standard Deviations, and Correlations.....       | 52 |
| Table 4.4 Results of Linear Regression Analysis. ....             | 53 |
| Table 4.5 Bootstrapped Mediation Analysis.....                    | 54 |
| Table 4.6 The Profile of The Respondents for Study 2. ....        | 55 |
| Table 4.7 Means, Standard Deviations, and Pair sample t Test..... | 56 |

## **Acknowledgements**

First of all, I wish to express my sincere appreciation to my major professor, Dr. Jichul Jang. His expertise, support, guidance, trust, and patience pushed me further than I thought I could go throughout my master's years. I could not have been luckier to have studied with him.

I would like to thank my committee members, Dr. Hyungchan Kim, Dr. Jared Durtschi, and Dr. Jin Lee who have gifted me with their extraordinary expertise and advice.

My appreciation also extends to every and each of members of department of hospitality management, especially Ms. Ericka Bauer for her invaluable encouragement.

I would like to thank Dr. Jungjin Hwang and Dr. Yasue Kuwahara who have believed in me and encouraged me to continue my study.

I cannot be thankful enough for my parents, Byungjoo Kim and Sungae Jung, and my precious little sisters, Minjoo Kim, Minseo Kim and Joy. Your endless love and support always make me realize how blessed I am and how much god loves me.

Last but not least, thank you god for loving me and allowing me to have what I have.

# **Chapter 1 - Introduction**

*The pause principle: step back to lead forward – Kevin Cashman.*

This chapter provides a rationale for the research conducted. Within this chapter, the first section discusses employees' psychological well-being in the hospitality industry. In the second section, problems regarding work breaks are stated. The objectives of the current study are discussed in the third session. In the fourth and fifth sections, the research questions and significance of the study follows. The definition of terms is addressed at the end of this chapter.

## **Employees' Psychological Well-being in The Hospitality Industry**

Service employees in the hospitality industry are the agents who provide intangible services to customers by directly interacting with them on behalf of organizations. They play a significant role in influencing customers' satisfaction and offer competitive advantage for companies as the source of service differentiation (Tsaur & Tang, 2013). However, hospitality employees today are struggling with stressful work environments which are described as long working hours, irregular work schedules, and emotional labor for demanding customers (Chiang, Birtch, & Kwan, 2010; Zhao, Qu, & Ghiselli, 2011). The exposure to inhospitable experiences may result in escalating of work stress and emotional exhaustion (Ariza-Montes, Arjona-Fuentes, Han, & Law, 2018). For instance, 80.3% of employees in the hospitality industry suffer from burnout at work; this ubiquitous burnout at work is associated with employees' lower psychological well-being (Paychex, Inc., 2019). Psychological well-being indicates people's judgments based on the frequency or intensity of positive feeling states (Diener, Larsen, Levine, & Emmons, 1985). Employees' psychological well-being is closely related to the overall

effectiveness of employees' psychological functioning, standing as a wider concept than job satisfaction (Wright & Cropanzano, 2000). Considering how employees deliver intangible products is directly related to the competitive advantages of hospitality firms, employees' psychological well-being to perform customer services cannot be stressed enough (Baker & Kim, 2020). In line with it, workplace stress not only impair their psychological well-being, but also increases employee turnover and absenteeism (Chiang & Jang, 2008; Hinkin & Tracey, 2000; Tews, Michel, & Stafford, 2013). As a result, the turnover rate in the hospitality industry is much higher (74.9%) compared to the rate for the all the private sector workers which stood at 48.9% in 2018 (Restaurant.org, 2018). Altogether, understanding innovative ways to enhance employees' psychological well-being may be linked with the ultimate prosperity of hospitality firms.

### **Problem Statements**

Workplace stress has become a serious problem in the hospitality industry. Work stress is related to numerous negative consequences in both psychological and physiological ways such as heart disease, chronic pain, depression, continuous anxiety, and interpersonal conflict which can lead to the impairment of employees' well-being (Colligan & Higgins, 2006). Work breaks, which refer to time off when work-related tasks are not required (Troughakos, Beal, Green, & Weiss, 2008), has been considered an efficient way to enhance individuals' well-being (Fritz, Ellis, Demsky, Lin, & Guros, 2013). Past studies on recovery have shown the relationship between various types of work breaks (i.e., vacation, weekends, and end-of-day) and their positive effects on work-related outcomes. For example, Westman and Etzion (2001) showed that vacation alleviated perceived job stress, burnout, and absenteeism. The relationship between

recovery experiences and positive effects such as serenity, and self-assurance was identified by Fritz, Sonnentag, Spector, and McInroe (2010). Fritz, Yankelevich, Zarubin, and Barger (2010) found that psychological detachment during the breaks at the end-of-day reduced emotional exhaustion while increasing life satisfaction. According to the recent study of Kühnel, Zacher, De Bloom, and Bledow (2017), recovery from self-initiated short breaks are positively related to daily engagement. Zhu, Kuykendall, and Zhang (2019) added empirical evidence of the positive relationship between within-day work breaks and employees' reduced fatigue and positive affect.

Despite a handful of prior studies on the potential advantages of work breaks, there are still many unanswered questions. First, the majority of studies have mainly focused on break outside of work including the end of day activities (at home), vacations, or weekends (Kim, Park, & Headrick, 2018; Trougakos & Hideg, 2009). Even though such comparably lengthy breaks do have a considerable impact on employees physically and psychologically as identified by previous studies, the beneficial effects do not last but fade away after a short period of time (Kühnel & Sonnentag, 2011). Moreover, extended breaks cannot be realistically taken frequently. Thus, within-day work breaks; breaks taken during a worker's shift, which includes formally scheduled breaks and micro-breaks, informally self-initiated time off (Kim, Park, & Niu, 2017; Trougakos & Hideg, 2009), may be effective to be utilized for organizations and employees for high-quality recovery. Unfortunately, little is known about how employees recover during within-day breaks (Kim, Park, & Headrick, 2018). Especially, where employees take within-day breaks and how the physical environment of employee break room affects employees' attitudes and behaviors are often neglected by both academia and industry. It is surprising since previous research showing that the indoor environment affects employees' physical and psychological health to a great extent is well-documented (Choi, Loftness, & Aziz,

2012; Otterbring et al., 2018). In the hotel industry, most employee break room are spare spaces right next to a laundry room or storage room which are usually in unfavorable conditions. Most restaurants do not even have an employee break room. It would be intuitive that the physical environment of an employee break room would significantly affect employees' affective state and perception since employee break rooms are where workers stay during within-day breaks.

Going further, considering among various physical components of the employee break room, layout is known as the most impactful but hidden factor to change inhabitants' attitude and perception with its relation to privacy (Rashid, Wineman, & Zimring, 2009), more attention to layout of employee break room is needed. Employee break rooms in hospitality operations are mostly open designed without any physical barriers. It is logical to reason that common downsides of an open-designed space are a lack of privacy, a higher level of noise, increased irritation and fatigue (Brand & Smith, 2005; Haynes, 2008; Smith-Jackson & Klein, 2009), eventually leading to incomplete recovery. Thus, it is of great importance to recognize and identify the significant role of the physical layout of employee break rooms on employees during within-day breaks.

Second, virtual reality has been underutilized in hospitality industry despite its high potential capacity as a research methodology (Tussyadiah, Wang, Jung, & tom Dieck, 2018). There are numerous hospitality studies that have been conducted on servicescape, store environment, and merchandise display which is either closely or remotely related to physical factors in hospitality industry (Kim & Moon, 2009; Zemke & Pullman, 2008). However, previous studies were limited to a few methodologies such as survey, recalling, or utilizing visual images (Kim & Moon, 2009; Park, Back, Bufquin, & Shapoval, 2019; Zemke & Pullman, 2008). These methods have a possibility to raise the memory bias of respondents and bear a lack of

reality, possibly being related to an issue of internal and external validity of study (Kim & Moon, 2009; Pierce & Aguinis, 1997).

Third, the theoretical process underlying the unique relationship between the physical environment of the employee break room and their psychological well-being is yet to be tested. Even though past research has found a direct relationship between work breaks and psychological well-being (Sonnentag, 2001; Sonnentag, 2003; Sonnentag & Natter, 2004), a few studies have focused on why and how the physical environment of employee break rooms may impact employee outcomes by integrating work engagement as a potential mediator (e.g., Kim, Park, & Headrick, 2018). Work engagement is well-known to be one of the most important factors of occupational well-being, eliciting overall psychological well-being (Kanste, 2011; Shimazu, Schaufeli, Kubota, & Kawakami, 2012; Shuck & Reio, 2014; Rothmann, 2008).

### **Purpose of This Study**

All in all, the current study attempted to bridge the knowledge gaps by

- 1) examining the impact of physical environments of employee break room on work engagement,
- 2) examining the positive relationship between work engagement and employees' psychological well-being,
- 3) examining work engagement as a potential mechanism on between the physical environment of employee break room and psychological well-being, and
- 4) examining whether a layout with individual pods in open-designed employee break room fosters or constrain employees' positive affect, and

5) examining whether a layout with individual pods in open-designed employee break room fosters or constrain employees' workplace friendship opportunities.

### **Research Questions**

I explored the following research questions in this study:

- (1) Is the physical environment of employee break room positively related to work engagement?
- (2) Is work engagement positively related to employees' psychological well-being?
- (3) Does work engagement mediate the relationship between the physical environments of employee break room and employees' psychological well-being?
- (4) Will employees in an employee break room with individual pods report higher employees' positive affect?
- (5) Will employees in an employee break room with individual pods report higher workplace friendship opportunities?

### **Significance of This Study**

This study contributes to knowledge on the effect of within-day work breaks on employees' psychological well-being in a hospitality context where the related studies are extremely rare. First, this study offered empirical evidence regarding the significance of the employee break room during within-day breaks in a hospitality setting. Hard work has been emphasized in the workplace, being a great virtue or key to success. Many hospitality companies praise employees who work hard from early morning to late at night by creating a hard-working climate. In contrast, taking a break has been seen as "goofing around" or as a bad work ethic at



the workplace. Accordingly, appropriate within-day work breaks has been neglected and to no one's surprise, so has employee break room where employees take their within-day work breaks. A large body of environmental psychology literature in an office setting has generally demonstrated the relation between the built environment and workers (Aries, Veitch, & Newsham, 2010; Lee & Brand, 2005). However, there is still a lack of research investigating the impact of the physical surroundings of employee break room on employees' outcomes in the hospitality literature. Hospitality managers also are missing chances to utilize the employee break room without an awareness of the importance of the resting area. By examining various components of the physical environment (i.e., thermal comfort, air quality, lighting, acoustic quality, furnishings, cleanliness, maintenance) and layout of employee break room, this study can address this knowledge gap by enhancing better understanding the impact of the physical environment of employee break rooms on employees' psychological well-being in a hospitality setting. In other words, this study can provide empirical evidence that taking time off in a proper employee break room is not a guilty pleasure, rather a necessity not only enhancing individuals' psychological well-being but also reinforcing employers' competitive advantages through having happy employees.

Second, the current study contributes to previous hospitality literature by adopting a methodological innovation, a Virtual Reality technique (Harrison, Haruvy, & Rutström, 2011; Pierce & Aguinis, 1997). The stimulated environment created by virtual reality are visually rich and takes place in real-time (Harrison, Haruvy, & Rutström, 2011). In such stimuli, participants are able to affect the environment and interact with it which makes it similar to the physical world (Harrison, Haruvy, & Rutström, 2011). Adopting virtual reality technique allows this study to overcome limits of experimental method testing physical dimension (Lee et al., 2003).

Thirdly, work engagement, a positive fulfilling state of mind in a work setting, was identified as a vital but an unknown mechanism from the physical surroundings of employee break room to psychological well-being. Examining this process is necessary to better understand how the physical environment of the employee break room may enhance employees' psychological well-being in order to enable hospitality managers to effectively manage their employees. Previous studies have identified that work engagement is a potential mediator to play a salient role in the formation of well-being at work and further the quality of life (Bakker, Schaufeli, Leiter, & Taris, 2008; Narainsamy, & Van Der Westhuizen, 2013; Rothmann, 2008). Thus, it would be noteworthy to identify how the physical surroundings of employee break room affects work engagement that leads to employee psychological well-being as well.

### **Definitions**

**Individual Pod:** A defined place configured by partitions with the purpose of creating private space and securing privacy

**Layout:** How the arrangement and configuration in spaces are laid out (Rashid, Kampschroer, Wineman, & Zimring, 2006).

**Micro-breaks:** informally self-initiated and a momentary time off (Kim, Park, & Niu, 2017; Trougakos & Hideg, 2009).

**Physical Environment of Employee Break Room:** the manmade, physical surroundings as opposed to the natural or social environment such as air quality, lighting, and layout (Bitner, 1992, p.58)

**Psychological Well-being:** People's judgments based on the frequency or intensity of positive feeling states (Diener, Larsen, Levine, & Emmons, 1985).

**Positive Affect:** to the extent to which an individual's level of pleasurable engagement with the environment (Clark, Watson, & Leeka, 1989).

**Within-day Work Breaks:** breaks taken during the day includes formally scheduled breaks and micro-breaks during workers' shift

**Work Breaks:** the time when work-related tasks are not required as the processes of recovery (Sonnentag & Geurts, 2009).

**Work Engagement:** a positive, fulfilling, work-related state of mind (Schaufeli & Bakker, 2004). Work engagement has three dimensions; vigor, dedication, and absorption (Schaufeli, Salanova, González-Romá, & Bakker, 2002). Vigor is "high levels of energy and mental resilience while working" and dedication is described as being strongly involved in one's work with a sense of passion. Absorption is "being fully concentrated and happily engrossed in one's work" which makes workers feel like time passes by quickly (Bakker & Demerouti, 2008, p. 2).

**Workplace Friendship Opportunities:** The degree to how easy employees have a conversation and build an informal intimacy with other coworkers (Hackman & Lawler, 1971).

## **Chapter 2 - Literature Review**

This chapter provides a comprehensive overview of key findings, concepts, and background theories in relation to the hypothesized developments. Hypotheses that the current study suggested are stated.

### **Background Information**

#### **Within-day Work Breaks**

During the breaks with no extra work stressors, employees can reduce their fatigue and replenish physical and psychological resources consumed for work demands (Ragsdale, Beehr, Grebner, & Han, 2011).

Meanwhile, within-day work breaks refer to breaks taken during worker's shift which includes formally scheduled breaks and micro-breaks. Within-day work breaks are shorter than other breaks since such breaks occur while employees are still at the workplace. Formally scheduled breaks mean rigidly scheduled breaks mostly by company or state law such as lunch break or rest break, whereas micro-breaks are informally self-initiated and are a momentary time off (Kim, Park, & Niu, 2017; Trougakos & Hideg, 2009). The length of microbreaks are generally expected to last from a few seconds to several minutes (Kim, Park, & Headrick, 2018). Less literature has examined within-day breaks compared to other breaks so far (Sonnentag & Fritz, 2015). An example of a micro-break could be responding to text messages on a smart phone or chatting with colleagues at work.

**Table 2.1. Summary of The Main Work Breaks Studies (Continuing)**

| <b>Author(s)</b>                      | <b>Break Category</b> | <b>Break Measure</b>  | <b>Dependent Variables</b>   | <b>Main findings</b>   |
|---------------------------------------|-----------------------|---|--|--|
| Lounsbury and Hoopes (1986)           | Vacation              | Length of Vacation, Vacation Satisfaction (at Pre- and Post- vacation)  | Job Satisfaction, Job Involvement (measured as central life interest and as valued self), Organizational Commitment, Turnover Intention, Life Satisfaction | Job involvement decreased after a vacation while turnover intention and Life satisfaction increased after a vacation, no significant change in job satisfaction.   |
| Westman and Eden (1997)               | Vacation              | Vacation Satisfaction (at Pre- and Post- vacation)  | Burnout, Relief, Interpersonal Stress, Vacation Satisfaction, Gender as a moderator  | Perceived job stressors and experienced burnout declined during vacation and increased after returning from vacation back. Women and those with a high level of vacation satisfaction showed a greater relief.   |
| Westman and Etzion (2001)             | Vacation              | The Timing of Vacation  | Job stress, Burnout, Absenteeism   | Vacation alleviated perceived job stress, burnout, and absenteeism.  |
| Fritz and Sonnentag (2006)            | Vacation              | Vacation Experiences (Positive/Negative Work Reflection), Mastery, Relaxation, Nonwork Hassles, Workload (at Pre- and Post- vacation) | Health complaints, Burnout, Self-Reported Task Performance, Self-Reported Effort Expenditure   | Health complaints and exhaustion significantly decreased during vacation. After vacation, less effort expenditure was necessary to fulfill the daily work chores.  |
| Kühnel and Sonnentag (2011)           | Vacation              | Vacation Effects, Leisure time Relaxation Experiences   | Work Engagement, Emotional Exhaustion, Pupil Misconduct, Time Pressure   | Beneficial effects of vacation on emotional exhaustion, work engagement were identified but such effects faded out within one month after vacation.  |
| Fritz and Sonnentag (2005)            | Weekends              | Nonwork Hassles, Social Activities, Positive Work Reflection  | Individual Health, Task Performance, Burnout, Proactivity, General Well-being  | Nonwork hassles were related positively to disengagement and poor general well-being, and negatively to task performance. Social activity was negatively associated with disengagement and poor general well-being while it shows a positive correlation with task performance. Lastly, positive work reflection did not contribute to general well-being. |
| Kühnel, Sonnentag, and Westman (2009) | Weekends              | Psychological Detachment  | Work Engagement, Job Involvement   | Psychological detachment during the short respite predicted change in work engagement.   |

|  |            |  |   |   |
|--|------------|--|---|---|
| Fritz, Sonnentag, Spector, and McInroe (2010)  | Weekends   | Recovery Experiences (Relaxation, Mastery, Control, and Detachment), Non-Work Hassles  | Affect (Joviality, Serenity, Self-Assurance, Hostility, Fear, Sadness, Fatigue)                                     | Relaxation, mastery, and detachment are associated to positive affect. The experience of control has less of an impact on affective states than other weekend experiences.  |
| Sonnentag (2003)                               | End-of-Day | Day-level Recovery   | Day-level Work Engagement, Day-level Personal Initiative, Day-level Pursuit of Learning                             | Recovery has a positive effect on work engagement and proactive behavior and the effect of recovery on proactive behavior is mediated by work engagement.   |
| Fritz, Yankelevich, Zarubin, and Barger (2010) | End-of-Day | Psychological detachment   | emotional exhaustion, life satisfaction, task performance, proactive behavior                                       | Psychological detachment decreases emotional exhaustion while increasing life satisfaction. There are the nonlinear relationships between psychological detachment and task performance, proactive work behavior.   |
| Sonnentag, Binnewies, and Mojza (2008)         | End-of-Day | Recovery experiences during the weekend (relaxation, mastery, control, and detachment), sleep quality  | Morning Effect  | A lack of psychological detachment causes negative activation and fatigue. Relaxation leads to serenity but not to positive activation. Also, mastery experiences are related to positive activation but not to serenity.<br>Sleep quality is correlated to all affect measures the most.                               |
| Sonnentag (2001)                               | End-of-Day | The amount of time spent on job-related and other task-related activities, household and child-care activities, low-effort, social activities, physical activities     | Individual's Situational Well-being before going to sleep   | The amount of time spent on job-related and other task-related activities was negatively related to well-being before going to sleep while the amount of time spent on low-effort activities, social activities, and physical activities were negatively related to the well-being. Household activities had no effect. |
| Sonnentag and Fritz (2007)                     |            | Recovery experiences (psychological detachment, relaxation, mastery, control) and Job Stressors, Job Control, Coping Styles, Personality, and Psychological Well-being |   | Developing and creating of a measure for assessing four recovery experiences dimension. Also, job stressors and job control were related to recovery experiences, yet coping was not.<br>Nonsignificant relationship between personality and recovery.  |
| Tucker (2003)                                  | Within-Day | Conceptual Study   |   | Reviewed of previous studies regarding the impact of rest breaks upon accident risk, fatigue and performance.   |
| Demerouti, Bakker, Geurts, and Taris (2009)    | Within-Day | Conceptual Study   |   | Suggested the model of daily recovery from work   |
| Hunter and Wu (2016)                           | Within-Day | Break Activities (less-effortful, preferred, non-work-related, outside the office), Break Length, The timing of break  | Emotional Exhaustion, Job Satisfaction, Organizational Citizenship Behavior, Resources Post-Break, Somatic Symptoms | Only preferred break and the time of break are associated with resources post-break, leading to somatic symptoms. Resources post-break are correlated to emotional exhaustion, job satisfaction, and organizational citizenship behavior.   |

|  |                |  |         |   |
|--|----------------|--|---------|---|
| Trougakos,<br>Hideg, Cheng,<br>and Beal (2014) | Within-<br>Day | Social activities, Autonomy<br>(Moderator), Work Activities,<br>Relaxing Activities during lunch<br>breaks | Fatigue | Social and work activities during lunch break increased fatigue while relaxing activities decreased. The moderating effect of autonomy on the relationship between social, work, relaxing activities and fatigue was supported. |
| Sonnentag and<br>Fritz (2015)                  | Within-<br>Day | Conceptual Study   |         | Reviewed previous empirical studies of psychological detachment from work during nonwork time and proposed the mediating and moderating role of psychological attachment between job stressors and well-being                   |

Researchers examining within-day work breaks have focused on the effect of break activities on employees' physical and psychological aspects (See. Trougakos, Hideg, Cheng, & Beal, 2014). For instance, social and work activities during lunch break increased fatigue while relaxing activities during this time did the opposite and decreased fatigue (Trougakos, Hideg, Cheng, & Beal, 2014). The moderating effect of autonomy on the relationship between social, work, relaxing activities and fatigue was also supported, indicating a feeling of control in micro-breaks as essential for recovery (Trougakos, Hideg, Cheng, & Beal, 2014).

Hunter and Wu (2016) tested whether break activities (less-effortful, preferred, non-work-related, outside the office) were related to various variables such as emotional exhaustion, job satisfaction, organizational citizenship behavior, and somatic symptoms with a mediating effect of resources post-break. They also explored the impact of break length and the time of day the break was taken as key characteristics of within-day breaks. Their findings suggested that activities voluntarily chosen by individuals and breaks taken earlier in the work shift helped recovery. Recovery of resources from within-day breaks resulted in less somatic symptoms, decreased emotional exhaustion, and increased job satisfaction and OCB after experiencing micro-breaks. Another study by Kim, Park, and Headrick (2018) suggested that socialization and cognitive activities during within-day breaks were positively correlated with greater sales performance with a full mediating effect of increased positive affect. Also, work engagement moderated the association between break activities and job performances, indicating employees with a low level of work engagement are more susceptible to the effect of break activities. The summary of previous studies on work breaks are presented in Table 2.1.

In the current study, the operational definition of within-day work break refers to any type of break including formally scheduled breaks which is a relatively long and fixed period of



time during the workday, as well as microbreaks as long as employees get to spend time physically in the employee break room. With such a definition, I attempt to examine the effect of the physical environment of employee break rooms during within-day work breaks on employees' attitudes and perception.

### **Physical Environment of Employee Break Room**

For this study, I adopted Bitner (1992, p.58)'s definition of physical environment, "the manmade, physical surroundings as opposed to the natural or social environment." Bitner (1992) suggested a structure showing how the physical environment (e.g., servicescape) impacts employees' behaviors through a series of internal responses in a cognitive, emotional, and physiological way. First, employees' perception of the physical environment might influence their cognitive perspective, especially their belief or attribution to a place and their organizations (Bitner, 1992; Kim & Moon, 2009). Also, the perceived physical surroundings may derive an emotional response to the place in two dimensions: pleasure-displeasure and degree of arousal (Bitner, 1992; Mehrabian & Russel, 1974). Such emotional reactions in turn, lead to approach/avoidance behaviors (Bitner, 1992; Mehrabian & Russel, 1974). Lastly, Bitner (1992) suggested that employees' perception to the physical environment was related to physiological responses. The impact of the physical surroundings on users and the ultimate behavioral change of employees are well-documented in a vast amount of previous research not only in engineering and design, but also in the hospitality industry (Bitner, 1992; Choi, Loftness, & Aziz, 2012; Lucas, 2003; Newman, 2007; Otterbring et al., 2018; Ryu & Jang, 2007; Wakefield & Blodgett, 1996).

Drawing upon Bitner (1992)'s concept of servicescape towards employee break room and physical factors consisting of employee break room can be thought to affect employees cognitively, emotionally, and physiologically (Bitner, 1992). Such employees' responses to the physical environment of employee break room in multi-dimensions drive a behavioral change.

For detailed environmental dimensions of the physical environment of employee break room, I adopted "industry standard" Post-Occupancy Evaluation (POE) database from CBE (Center for the Built Environment) at the University of California, Berkeley. The survey questionnaire has eight different dimensions for respondents including, (1) thermal comfort, (2) air quality, (3) lighting, (4) acoustic quality, (5) office layout, (6) office furnishings, (7) cleanliness, and (8) maintenance (Zagreus, Huizenga, Arens, & Lehrer, 2004). Thermal comfort is defined as a "state of mind which expresses satisfaction with the thermal environment" (ASHRAE, 2004). Thermal comfort is related to occupants' sensation of "warm" or "cool" which is a subjective concept depending on individual's perception (Lin & Deng, 2008). The second dimension, air quality, refers to the level of indoor air quality in a building (Al Horr et al., 2016). The indoor air quality level is known to be affected by building conditions such as material, construction, indoor furnishing and also outdoor conditions (Al Horr et al., 2016). Lighting is one of the critical factors of physical environmental quality. In the current survey set, lighting is not restricted to the natural light, rather indicating the optimal amount of any sort of light in a room and the visual comfort of it. Next, the dimension of acoustic quality in the survey measures the degree of unwanted sound and sound privacy which indicates "ability to have conversations without overhearing." The perception of workers of an acoustic environment is expected to have an impact on workers in various ways such as stress level, satisfaction, work performance, and well-being (Huang, Zhu, Ouyang, & Cao, 2012). Office layout, the types of arrangement or

configuration within space, is recognized as one of the leading factors since it is closely related to other indoor quality dimensions and various employee related outcomes (Rashid, Wineman, & Zimring, 2009). The amount of space, design, proximity, privacy, and ease of interaction is decided by office layout, ultimately influencing a wide range of outcomes such as work process, productivity, organizational climate, and employees' satisfaction (Haynes, 2008; Lee, 2010; Wheeler & Almeida, 2006). Cleanliness and maintenance in the survey indicates general cleanliness and the cleaning service of space. Lastly, all things considered, how satisfied a respondent is with space was asked. I expect these physical environmental factors can be applied to employee break room and are closely associated with employees' attitudes, and their consequent behaviors. Indoor environment has a strong influence on employees in a variety range of aspects including physical and psychological health (Choi, Loftness, & Aziz, 2012; Otterbring et., 2018).

### **Work Engagement**

Engagement originally stemmed from previous research on burnout by Maslach, Schaufeli, and Leiter (2001). They defined work engagement as a “persistent, positive affective-motivational state of fulfillment” (2001, p. 417). Maslach, Schaufeli, and Leiter (2001) claimed burnout as a chronic status characterized by emotional exhaustion, cynicism, and lack of professional efficacy, being a highly relative factor to work engagement. Some researchers have believed that work engagement and burnout are the opposites of each other on the same continuum (sets of exhaustion–vigor, and cynicism–dedication items; Maslach & Leiter, 1997; Schaufeli, Salanova, González-Roma, & Bakker, 2002). Later, Schaufeli, Salanova, González-Roma, and Bakker (2002) argued that engagement and burnout needed to be distinguished

because they describe different types of mental states (negative vs. positive). Other scholars also have added evidence to this that the energy dimensions (exhaustion vs. vigor) appear to be two separate concepts even though the cynicism/disengagement and dedication can be each other's opposite (Demerouti, Mostert, & Bakker, 2010; González-Romá, Schaufeli, Bakker, & Lloret, 2006). In such a manner, work engagement is defined as a "positive, fulfilling, work-related state of mind" with three core components; vigor, dedication, and absorption (Schaufeli, Salanova, González-Romá, & Bakker, 2002). Vigor is "high levels of energy and mental resilience while working" and dedication is described as being strongly involved in one's work with a sense of passion. Absorption is being fully concentrated and happily engrossed in one's work which makes workers feel like time passes by quickly (Schaufeli, Salanova, González-Romá, & Bakker, 2002). Lastly, dedication refers to being deeply involved in one's work with a sense of significance (Schaufeli, Salanova, González-Romá, & Bakker, 2002). In short, employees with a high level of work engagement are energetic, passionate, and have a pleasant feeling about their work (Bakker & Demerouti, 2008).

In work breaks and recovery literature, work engagement is a highly relevant concept due to its strong impact on employees' work-related outcome and their well-being. Work engagement has a high correlation with job performance (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007c). Bakker, Demerouti, and Verbeke (2004) found that more engaged employees showed a better performance both in in-role and extra-role behaviors. In addition to that, Bakker, Walker, and Harland (2006) added the empirical evidence that engaged employees were more likely not only to accomplish their roles but also to go the extra mile that leads to creativity. Engaged employees have a higher chance to experience affective emotions (Schaufeli & Van Rhenen, 2006). Working passionately with high work engagement can be perceived as an

affective event itself, creating positive emotions such as passion and interest (Schaufeli, Salanova, González-Romá, & Bakker, 2002). Employees who are highly engaged to work have been proved to suffer less from physical problems (Hakanen, Schaufeli, & Ahola, 2008). Lastly, engaged workers tend to have a greater capacity to manage their resources which can help themselves from stressful work stressors, leading to improved psychological well-being (Britt, Adler, & Bartone, 2001; Llorens, Schaufeli, Bakker, & Salanova, 2007; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007b).

Work engagement has been debated to show stable individual variations (Salanova, Grau, Cifre, & Llorens, 2000). However, within one person, work engagement not only fluctuates from day to day (Kahn, 1990; Sonnentag, 2003; Sonnentag, Dormann, & Demerouti, 2010) but even throughout the day (Sonnentag & Kühnel, 2016). Empirical studies have shown that different work tasks can change the level of work engagement during a day, in terms of the usage of personal resources (Bakker, 2014; Sonnentag, 2011; Sonnentag, 2017; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007a). Thus, it is logical to assume that the flexible fluctuation of work engagement is contributed to within-day break experiences.

Meanwhile, work engagement serves an important role in a various way especially in the hospitality industry with an inherent nature of service. Lyu, Zhu, Zhong, and Hu (2016) showed that work engagement mediates the correlation between abusive supervision and customer-oriented organizational citizenship behavior. Karatepe (2013) also addressed that work engagement works as a mediator between high-performance work practices and job performance and extra-role customer service.

## **Layout of Open-designed Employee Break Room**

Drawing to work breaks, employee break room as a physical surrounding can be thought to give an impact on employees during work breaks. Among a large number of factors of physical environment, this study concentrated on layout.

The term layout refers to the arrangement and configuration in how space is laid out (Rashid, Kampschroer, Wineman, & Zimring, 2006). Layout has been described as the most fundamental and significant aspect that influences employees' behavior since it can determine the type of space and consequential outcomes relevant to employees and organizations (Lee, 2010; Maher & von Hippel, 2005). The majority of studies on layout have been conducted in an office setting. In terms of layout, the physical office designs are variously defined from traditional or private to open design (Kim & De Dear, 2013). A considerable amount of attention has been given to the more contemporary open-plan space for its significant effect on workers (Lee, 2010). Open-plan design is characterized by an absence of the floor-to-ceiling wall and the traditional physical barriers (Zalesny & Farace, 1987). The absence of internal physical barriers allows open-plan space to be more flexible at a minimized cost to meet changing needs (Brennan, Chugh, & Kline, 2002). Easier access to other individuals in open-plan space facilitate interactions amongst workers. Accordingly, more frequent communication might lead to higher levels of cooperation, and knowledge-sharing between workers (Brennan, Chugh, & Kline, 2002; Kaarlela-Tuomaala, Helenius, Keskinen, & Hongisto, 2009). Such merits in social relations are also associated with overall favorable group sociability and organizational climate (Brand & Smith, 2005; Zalesny & Farace, 1987). Increased morale and productivity have been claimed as one of the positive outcomes of an open design office (Haynes, 2008).

Although many have advocated open design office, mixed results have been reported as well (Altman & Baruch, 2010; Brookes & Kaplan, 1972; Kaarlela-Tuomaala, Helenius, Keskinen, & Hongisto, 2009; Kim, & De Dear, 2013). A greater level of enclosure induces increased noise, distractions, a feeling of crowding, and environmental dissatisfaction (Altman & Baruch, 2010; Brookes & Kaplan, 1972; Marans & Yan, 1989; Sundstrom, Burt, & Kamp, 1980). Lower privacy (i.e., architectural privacy and psychological privacy) is the most negative aspect of an open-plan office by being exposed to others excessively (Sundstrom, Town, Brown, Forman, & McGee, 1982). A lack of privacy causes occupants' psychological discomfort and a sense of losing control (Wells, 2000). Employee break rooms in hotels are usually a plain room without any physical barrier to configure which fits under the definition of an open-plan design. Therefore, in this study, the employee break room was further considered as an open-plan design. Since employee break rooms in hotels are widely open with no partitioning in it, the aforementioned side effects of an open-designed space may be easily applied to hotel employees who use open-plan employee break room. In other words, hotel employees are likely to be left with a little territoriality and experience all the negative effects from open-designed employee break room during within-day breaks (Wells, 2000).

## **Hypothesis Development**

### **Overarching Theories**

#### **Effort-Recovery Model (E-R Model)**

Effort-Recovery Model (Meijman & Mulder, 1998) is essential to understand the interplay with resources and recovery through work breaks. The core assumption is that a certain amount of effort should be taken when individuals deal with a variety of issues in life.

Especially, with an innate nature of work tasks being effortful, employees unavoidably experience load reactions, resulting in draining their resources at the workplace. The load reaction is overall associated with increased stress levels from the secretion of cortisol (stress hormone). If the stress process prolongs, the load effect keeps being accumulated and develops into an “allostatic load” (McEwen, 1998). Given that such depleted resources from consumed efforts can be restored, it is necessary to have a recovery process to cut the psychophysiological deterioration cycle and restore lost resources (Geurts & Sonnentag, 2006). Thus, after individuals putting their effort to deal with various stimulations in life, their consumed effort should be restored to keep going on. In a work context prior studies that adopted effort-recovery model in their theoretical models empirically showed that employees need to have a full recovery from work breaks to return to the pre-demand levels after consuming their resources at work (Marzuq & Drach-Zahavy, 2012; Siltaloppi, Kinnunen, & Feldt, 2009; Tucker, Dahlgren, Akerstedt, Waterhouse, 2008; Zhu, Kuykendall, & Zhang, 2018). Putting this model in the current study, once hospitality workers use their extra effort at work such as to deal with customers and manage the hostile working environment, they should get replenished during their break at the employee break room.

### **The Conservation of Resources Theory (COR)**

Effort-Recovery Model and Conservation of Recovery theory has been argued to be complementary to one another (Hoover, 2017). Both theories postulate that work tasks require one's limited resources and facilitate the stress process. The necessity of recovery is stressed in both. COR theory, especially, focuses on the occurrence of stress. According to COR theory, people make an endeavor to protect, retain, and regain valuable resources (Hobfoll, 1989, 2002).



Resources are considered to be anything as long as they are valuable to the individual or help the individual to achieve a goal (Halbesleben, Neveu, Paustian-Underdahl, & Westman, 2014). The examples of resources defined by Hobfoll (1989) can be (a) objects including food, water, and shelter, and (b) personal characteristics such as skills, (c) energies including money, knowledge and lastly, (d) conditions such as marital status. Later in 2001, Hobfoll suggested inner energy including physical, emotional, feeling, and cognitive energy as resources. Self-regulatory capacity (Muraven & Baumeister, 2000), self-efficacy (Bandura, 1982), affective states (Weiss & Cropanzano, 1996) have been discussed as personal resources as well. In line with the definition of resources, it is logical to draw out the attributes of resources that affect each other. In other words, lacking one type of resource often leads to lacking another type of resources (Shirom, 2011). Fewer resources put individuals into a vulnerable position of losing the few resources they already have along with limited coping skills (Freedy & Hobfoll, 1994). Those with low resources have more challenges when it comes to gaining other resources because of individuals' capacity that is already maxed out to retain their resources. Eventually, individuals who lack the prioritized resources have a high chance to experience "cycles of resource loss", leading to a chronic burnout status (Shirom, 2011, p.312). It can also work the other way around. Holding one type of resource facilitates the process to gain other resources as well as reduce the risk of losing them (Cao & Qu, 2014). Thus, with the perspective of COR theory, inputting resources by taking work breaks is an important strategy to avoid the exhaustion of valuable resources and preserve resource pools.

## **Study 1**

### **Physical Environment of Employee Break Room and Work Engagement**

Individuals are largely influenced by physical surroundings in a physical and psychological way (Choi, Loftness, & Aziz, 2012; Otterbring et al., 2018). In this study, I propose that the physical environments of the employee break room are positively related to work engagement using Effort-Recovery Model (Meijman & Mulder, 1998) and COR theory (Hobfoll, 1989, 2002). When the employee break room is inhospitable, for instance, with excessive lighting, unwanted sound, not enough space, too cold or too warm temperature, and the lack of privacy, employees cannot help but adjust to the circumstance at the expense of ongoing regulation resources, resulting in an impaired replenishment of energy. On the contrary, if employee break room provides them with a favorable environment with satisfactory conditions such as a perfect amount of lighting, temperature, high air quality to breath, and a cozy couch in a clean space, individuals are able to focus on their recovery experience and eventually experience a recovered energy level with low fatigue and no other strain symptoms (Sonnentag, Mojza, Demerouti, & Bakker, 2012). From the perspective of vigor, one of three basic components of work engagement, being in a good condition from a complete recovery enables employees to be vigorous and makes it easy to fully invest in their work (Sonnentag, 2003). Additionally, the fact that hospitality firms make an endeavor for a nice physical environment of employee break room might boost employees' motivation to invest their time and effort to work by being perceived as an organizational support. Employees who are committed and immersed to work are typically seen as a high level of work engagement as it explains dedication and absorption, which are the other components of work engagement (Caesens & Stinglhamber, 2014; Schaufeli & Bakker, 2004).

Previous study identified that accumulated mental fatigue diminishes individuals' motivation to concentrate on work (Beckers et al., 2004). Incomplete recovery in a poor-conditioned employee break room also makes employees less willing to be devoted for themselves to work since they do not want to spend extra resources on top of the energy loss that they had during the break (Sonnentag, 2003). Hakanen, Bakker, & Schaufeli (2006)'s study can be evidence of this idea that employees are more likely to circumvent a deep involvement to work when they are exhausted from the lack of recovery. Individuals who are not sufficiently restored tend to get distracted from work tasks due to their attempt in acquisition of resources (Sonnentag, 2003). In other words, if employees have a full recovery from favorable physical surroundings, they might be able to obtain more vigor and easily focus on their work, leading to increased work engagement.

The evidence of the hypothetical relationship from a psychological perspective between the physical environment of employee break room and work engagement can be found outside of recovery context. The fact that organizations offer employees well-conditioned employee break room can make employees feel appreciated and recognized (Nejati, Rodiek, & Shepley, 2016). Physical elements can be perceived as a cue in influencing employees' belief about how their organizations care about them in this study (Bitner, 1992). Thus, hospitable physical surroundings might be perceived as organizational support for employees in which a well-perceived organizational support is known to be a predictor of work engagement (Caesens & Stinglhamber, 2014).

To sum up, physical environment of employee break room aids employees to fully replenish their energy diminished from the course of the day without any disturbance. Thus, I predict

*Hypothesis 1: Physical environment of employee break room is positively related to work engagement.*

### **Work Engagement and Psychological Well-being**

I expect that enhanced work engagement from adequate recovery experience is positively correlated to employees' psychological well-being, individuals' emotional and cognitive assessment of their lives (Diener, Oishi, & Lucas, 2003). A large body of literature has found that there is a positive relationship between work engagement and occupational well-being, and eventually psychological well-being (Kanste, 2011; Shimazu, Schaufeli, Kubota, & Kawakami, 2012; Shuck & Reio, 2014; Rothmann, 2008). The relationship can be explained in various facets. First, engaged workers tend to love their job, which usually results in high job satisfaction (Lu, Lu, Gursay, & Neale, 2016). Since people spend most of their time at their job and being happy with one's job, it is naturally linked to a high level of psychological well-being (Rothmann, 2008). Also, engaged employees are more likely to experience positive emotion such as joy, happiness, and enthusiasm (Shimazu & Schaufeli, 2009). Such positive affect might restrain arousal of negative effects (i.e., psychological distress) and decrease the possibility of physical health deterioration (Shimazu, Schaufeli, Kubota, & Kawakami, 2012). Workers with a high level of work engagement are active and vigorous and the spillover effect was also found in other areas of life (Shimazu et al., 2008). In essence, overall psychological and physical betterment might be positively related to a higher level of psychological well-being.

To sum up, employees who are engaged to their jobs are likely to experience a blast in their life with following positive emotions such as enjoyment, joy and zeal, and further establish improved psychological well-being overall. Thus, I predict

*Hypothesis 2: Work engagement is positively related to employees' psychological well-being.*

With an exposure to well-conditioned physical environment of employee break rooms, employees are more likely to fully recharge and experience a high level of vigor, leading to enhanced work engagement (Sonnentag, Mojza, Demerouti, & Bakker, 2012). Employees' perception of organizational support with a favorable employee break room seems to be a factor to motivate employees to be willingly dedicated and absorbed to work without any disturbance which is considered as indicators of engaged employees.

Work engagement increased by the physical environment of employee break room is highly related to the level of happiness at work (Rothmann, 2008). In addition to that, other positive affect that employees feel at work might spill over to one's life, promoting higher psychological well-being in general.

To sum up, engaged employees from a complete recovery in a well-conditioned physical environment of employee break rooms tend to have a pleasant experience in life in general. Thus, I expected

*Hypothesis 3: Work engagement mediates the relationship between physical environment of employee break room and employees' psychological well-being.*

## **Study 2**

### **Layout of Open-designed Employee Break Room and Positive Affect**

Positive affect refers to the extent to which an individual's level of pleasurable engagement with the environment (Clark, Watson, & Leeka, 1989). Happiness, joy, excitement, enthusiasm and a state of high energy are exemplified as the indicatives of high positive affect (Pressman & Cohen, 2005), while low positive affect reflects lethargy and lassitude (Clark, Watson, & Leeka, 1989). Generically, positive affect subsumes a wide range of emotional experience including not only affective but also physical and cognitive states that are described as active and interested (Clark, Watson, & Leeka, 1989). Since positive affect is one of the subcategories of moods with negative affect, the terms positive affect and moods are predominantly interchanged in the emotion literature (Watson, Clark, & Tellegen, 1988). Negative affect, another subcategory of moods, represents a variety of negative emotional states such as fear, anger, and sadness (Watson, Clark, & Tellegen, 1988). Although there is still an ongoing argument in viewing positive affect as an opposite on the same bipolar scale or as orthogonal factors (Pressman & Cohen, 2005), this issue might be irrelevant in the current study and I focused on positive affect. Positive affect is the best feature to be considerably easy to fluctuate in the short term even during the course of a given day (Clark, Watson, & Leeka, 1989; Lyubomirsky, King, & Diener, 2005; Pressman & Cohen, 2005). Therefore, it is rational to assess current positive affect after the manipulation is intervened (Pressman & Cohen, 2005).

I suggest that a proper layout with individual pods in employee break rooms is positively related to employees' positive affect. Servicescape model (Bitner, 1992) can be easily applied to this casual relation. It has been well-supported that individuals' emotions are aroused by experiencing physical stimuli (Kim & Moon, 2009; Park, Back, Bufquin, & Shapoval, 2019).

Applying to employee break room, open-plan employee break room with no proper physical blockage might place employees to be exposed to excessive social interactions and extreme physical proximity. Social contacts in open-plan designs are not selectable, meaning it is hard for employees to control who they have an interaction with or when they socialize (Altman & Baruch, 2010). Unwanted social activities may deprive individuals' opportunities to experience positive affect through restful breaks by consuming affective resources (Aubert-Gamet, 1997; Trougakos, Jackson, & Beal, 2011; Vohs, Baumeister, & Ciarocco, 2005). Also, engaging continuously with colleagues during breaks also can be a causing factor in the decrease of positive affect since it hinders workers from being completely detaching from work. When employees fail to get psychological detachment from work, the winding process affects employees' affective status positively (Sonnentag, Binnewies, & Mojza, 2008). In opposite, if employees are able to have preferred social interactions, they may find it enjoyable.

Besides the social perspective of open-space break room, other negative consequences, especially little privacy, may add up to cause a negative impact on employees' positive affect as well. Privacy is a regulatory process of having control over or be free of any other disturbances (Newell, 1995; Laurence, Fried, & Slowik, 2013; Stone & Stone, 1990). With an innate characteristic of an open-plan design, workers in the employee break room cannot protect their physical and personal boundaries, being vulnerable to excessive noise (i.e., irrelevant speech) and visual unfreedom (Hatch, 1987). Therefore, a lower level of privacy can induce employees to engage in negative affect in a hostile configuration of employee break room. However, if an open designed employee break room is equipped with individual pods creating private spaces and a proper configuration of physical factors, employees can have a higher level of positive affect by securing privacy, and be free from discomfort (noise, visual invasion, social interruptions;

Jahncke, Hygge, Halin, Green, & Dimberg, 2011). Thus, balancing openness in an open-layout space is a key point for a successful design. Therefore, I also hypothesize;

*Hypothesis 4: Employees in employee break room with individual pods will report higher positive affect*

### **Layout of Open-designed Employee Break Room and Workplace Friendship Opportunities**

The openness of an open-plan design has been identified as a double-edge sword in terms of social interactions. As I have discussed earlier, excessive exposure to social activities has been demonstrated in generating negative outcomes (Desor, 1972; Maher & Hippel, 2005). However, a well-balanced level of enclosure with individual pods is capable of boosting optimal social relationships among inhabitants. Workplace friendship opportunities, the degree to how easy employees have a conversation and build an informal intimacy with other coworkers (Hackman & Lawler, 1971), capture the advantages of an open-space employee break area. A proper configuration with individual pods in employee break room gives employees a chance for selective self-exposure to socialization which enables them to save emotional regulation sources. With saved emotional resources, employees are able to concentrate on their chosen interactions and to develop better social relationships with them. Thus, workplace friendship opportunities are expected to increase. Oldham and Brass (1979)'s study has supported my assertion from a sociotechnical perspective. According to their study, close relationships at work need to be built up with a foundation of sharing personal thoughts and feelings with colleagues. Open-design space might not provide a private space where employees can have a personal conversation. In other words, the absence of a closed place in the opened employee break room might suppress confidential conversation as an obstacle to building advanced relationships with co-workers.



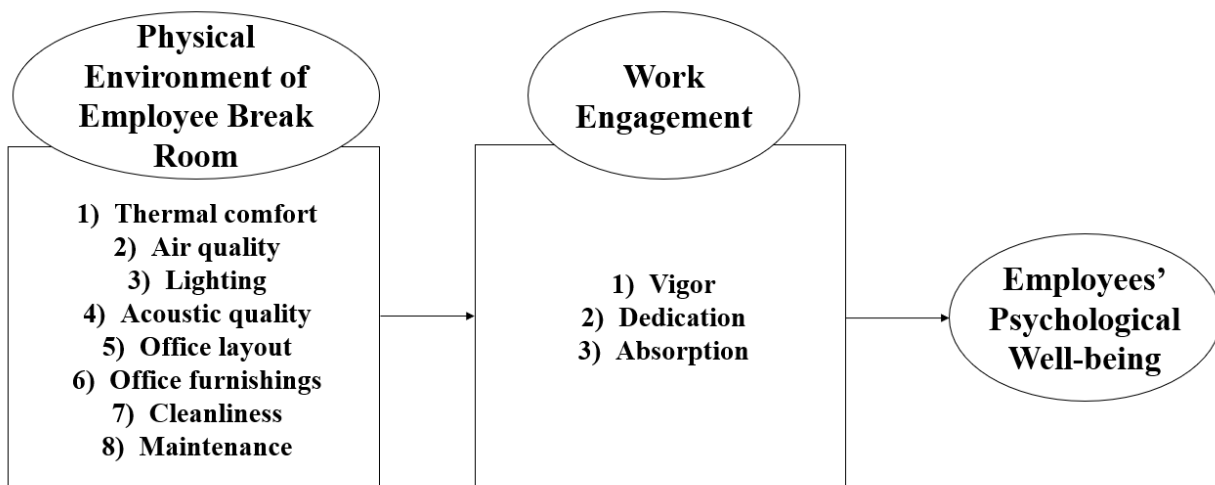
To sum up, private spaces created by individual pods can give a chance to employees for selective social interactions, and further help them to focus on their favorite relationship with saved energy.

Altogether, I expect

*Hypothesis 5: Employees in employee break room with individual pods will report higher workplace friendship opportunities.*

### Proposed Research Model

**Figure 2.1 Proposed Research Model**



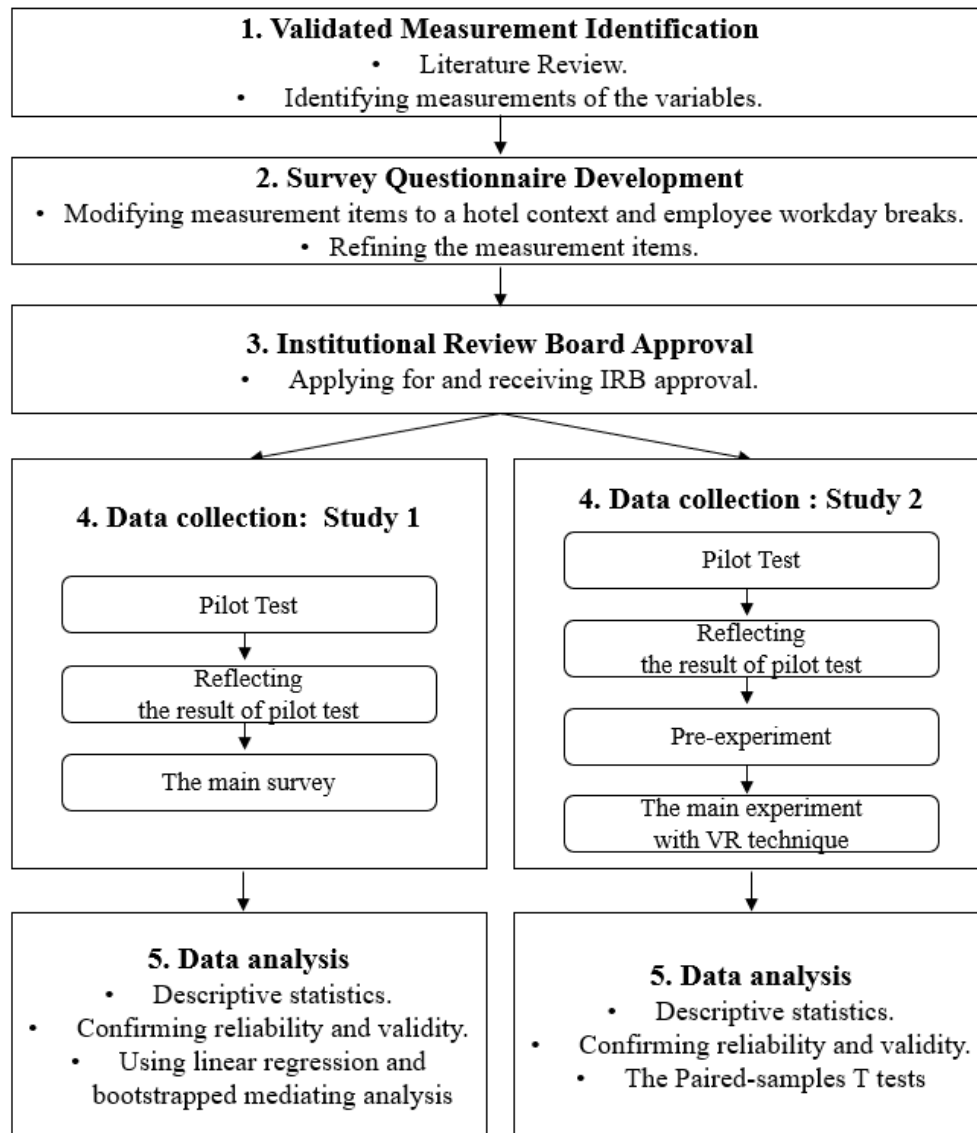
The model above described the proposed research model of the current study. The model portrays that the physical environment of employee break room, the independent variable in the study, is positively associated with work engagement and work engagement is related to psychological well-being. It is also included in the model that work engagement mediates the relationship between the physical environment of employee break rooms and psychological well-being. The hypothetical model of study 2 indicates that employees in employee break rooms with

individual pods will report a higher positive affect and workplace friendship opportunities than employees in employee break rooms with no individual pods.

## Chapter 3 - Method

This chapter describes the study's research methodology for the empirical test of the proposed hypotheses. The processes for testing the proposed model are presented in Figure 3.1. In a sub-section of the research design, information regarding data collection tool, samples, and sample sizes are provided. In the following section, I explained the results of pilot study, measurements that I adopted in this study, and data collection procedures.

**Figure 3.1 The Whole Process of The Current Study**



## **Study 1**

### **Research Design**

For the data collection in Study 1, I adopted a survey methodology in a quantitative design. Compared to qualitative methods, quantitative research designs establish statistically significant results by exploring a representative sample that reflects the population (Creswell, 2003). Quantitative research design is often used to verify a hypothesized claim, to identify changes of pre- and post-test measures and to confirm applied theories (Creswell, 2009; William, 2007). Among four representative quantitative research methods (i.e., survey research, correlational research, experimental research, and causal-comparative research; Sukamolson, 2007), the survey research method was applied to the current study. This method is commonly used for sampling data from respondents reflecting a population and measuring respondents' attitudes and behaviors in social sciences (Creswell, 2009; William, 2007). The survey method fits well with the purpose of the current study which examines the effect of the physical environmental factor of employee break room on employees' attitudinal changes in a hotel setting.

Amazon Mechanical Turk ([www.MTurk.com](http://www.MTurk.com)) was used for collecting data for this study. Amazon Mechanical Turk is a web-based labor market for data-collection tool (Paolacci & Chandler, 2014). The number of M-Turk workers is over 500,000 from 190 countries, affording an anticipation of a more diverse range of participants (Buhrmester, Kwang, & Gosling, 2011; Paolacci, & Chandler, 2014). Considering a challenge of monitoring web participants, attention check questions were included to remove participants who were not attentively answering questions, which was the most common concern related to Amazon M-Turk (Chandler, Mueller, & Paolacci, 2014). The examples of attentiveness test items were as

follows: “Please choose "*Strongly Disagree*" for this statement to continue the survey, or you will not be able to finish it.”

### **Target Population and Sample**

Target populations included Generation Y who were born between 1982 and 2000 (Gurau, 2012; Lu & Gursoy, 2016) and those who are currently working or have worked at any types of service operations such as restaurants, hotels, and catering companies. To sum up, to be eligible for Study 1, participants had to be (1) Generation Y who were born between 1982 and 2000 (Gurau, 2012; Lu & Gursoy, 2016), (2) currently working or have worked at any types of service operations such as restaurants, hotels, and catering companies, and (3) the operation facilities should be located in the United States.

The reason why the sample was Generation Y was two-fold. First, they comprise the biggest portion of the work force in the United States, numbering 76.2 million which is the biggest generation within the workforce (U.S. Census Bureau, 2015). All the point of views of Gen Y that is brought into the workplace including their series of values, belief system, and attitude, particularly towards work breaks, would give valuable information about an organizations’ effectiveness. In a people- and labor-intensive hospitality industry, employees are the very sources of organizations’ competitive advantages. Second, Generation Y seeks for work-life balance and “work to live” not “live to work” as Boomers do (Berkup, 2014). For generation Y, leisure is a critical work value (Twenge, Campbell, Hoffman, & Lance, 2010). Generation Y highly values the opportunity for time-off from work, such as vacation (Miller, Woehr, & Hudspeth, 2002). Also, Generation Y are known to have lower levels of organizational commitment and higher turnover compared to other generations (Lancaster & Stillman, 2002;

Twenge, 2008). They tend to be ready to leave the job when their job does not satisfy their leisure needs (Salahuddin, 2010). In other words, they are likely to easily explore a better job with more frequent and higher-quality work breaks. By having Generation Y as a sample, this study is able to achieve the goal of this study, to identify more evident pattern of the relationship of the physical environment of employee break room and employees' psychological well-being with a focus on Generation Y since earlier generations are retiring leaving no need for new programs.

To determine the effective sample size for the current study, G\*Power (3.1.9.2) analysis was used. Since the current research is in the realm of social and behavioral study and hopes to acquire statistical power at the recommended .80 level (Cohen, 1988), the effect size was set as 0.1 with an expectation of small effects (Cohen, 1988; Cunningham & McCrum-Gardner, 2007; Faul, Erdfelder, Lang, & Buchner, 2007). The result showed that the minimum sample size is 124. For more accurate information, I referred to guidance by Kotrlik and Higgins (2001). Their study showed that an appropriate sample size for this study would be 300 with a consideration of linear multiple regression and factor analysis as the data analysis methods which was adopted in the current study. With an average calculation, therefore, the total sample size to be gathered was 311 over the suggested number of 300.

### **Pilot Test**

Before the main study, conducting a pilot study provided a chance to test the adequacy and validity of research measurement and evaluate a feasibility of the major survey (Van Teijlingen & Hundley, 2002). To obtain the benefits of the pilot study, I adopted the pilot study before the major study with a sample of 30 participants. Participants to the pilot test had the same

requirement to take part in as the main study; (1) millennials, (2) employees who are currently working or have worked in any type of service operations including restaurants and hotels, (3) the operation facilities are located in the United States. The pilot study conducted through the Amazon Mechanical Turk. By utilizing Amazon Mechanical Turk, I could include more demographically diverse yet still reliable samples in a comparatively short period of time (Buhrmester, Kwang, & Gosling, 2016). In the pilot study, instead of work engagement, a feeling of energy (Quinn & Dutton, 2005) was initially tested as a mediator. According to the result, all items passed reliability test with a good Cronbach's alpha score (physical environment of employee break room: 0.93, employees' psychological well-being: 0.86).

### **Data Collection Procedures**

In order to conduct the study according to an unauthorized procedure, I received an approval from the Institutional Review Board (IRB) (See Appendix A).

Data collection was done through an online platform Amazon Mechanical Turk ([www.MTurk.com](http://www.MTurk.com)). First, I created an online survey page in Qualtrics. Once, the survey was made, the created online survey link in Qualtrics was embedded in a new project in Amazon Mechanical Turk. To complete the launch of my survey and recruit respondents in Amazon Mechanical Turk, I set how much reward per response was compensated and how many respondents were required. Participants were compensated with 50 cents. When they started the survey, voluntariness of the experiment and confidentiality of their information and response were guaranteed through a cover letter at the beginning of the survey. At the beginning of the survey, participants were required to answer screening questions asking their eligibility for the survey. I also embedded several attentive tests asking, "Please choose "Strongly Disagree" for

this statement to continue the survey, or you will not be able to finish it" to identify non-committed respondents.

## **Measurements**

All measurements utilized in this study had an ideal level of the Cronbach's alpha value over 0.7 that guarantees an internal consistency (Hair et al., 1998).

### **Physical Environment of Employee Break Room**

The physical environment of break rooms was measured using 16 items of Indoor Environmental Quality (IEQ) adopted from Zagreus, Huizenga, Arens, and Lehrer (2004). The questions were given with a 1-7 response scale, ranging from "*Strongly dissatisfied*" to "*Strongly satisfied*." I altered the word "workplace" to "employee break room" in the questions and replaced the examples (e.g., computer to vending machine) for the clearer purpose of this study. The Cronbach's alpha value for the 16 items in this study was 0.94. To see the relationship between other variables in the research model, all 16 components were combined and calculated as a one averaged value. The mean of the averaged value of 16 items was 4.96 with a standard deviation of 1.09. Table 3.1 provides all measurement items for the physical environment of employee break room.

### **Work Engagement**

Participants provided ratings of their level of work engagement with the nine items Utrecht Work Engagement Scale, the most widely used measurement to assess work engagement in academia (UWES; Schaufeli, Bakker, & Salanova, 2006). Three sub-dimensions of work



engagement (vigor, dedication, and absorption), were asked respectively (Schaufeli, Salanova, González-Romá, & Bakker, 2002). Questions asking the level of vigor were how energetic respondents would be at work. The extent to which employees feel passionate while working was asked through questionnaires of dedication. The measure to assess absorption was done by asking respondents was done by asking how engrossed they are in their work. Participants crossed the number from 1, “*Strongly disagree*”, to 7, “*Strongly agree*.” The Cronbach’s alpha was 0.91 and the mean of the averaged value of 9 items was 5.15 with a standard deviation of 1.11. The whole measurements are included in Table 3.1.

### **Psychological Well-being**

Psychological well-being was also rated with the questionnaire developed by the World Health Organization Well-Being Index (WHO-5) (Topp, Østergaard, Søndergaard, & Bech, 2015). The statements indicated how often subjects felt affective feelings in regard to psychological well-being. The one common instruction was suggested first (e.g., “Please indicate for each of the 5 statements which are closed to how you have been feeling over the past 2 weeks”). Response options ranged from 1, “*Strongly disagree*”, to 7, “*Strongly agree*.” The Cronbach’s alpha was 0.87. The mean of the averaged value was 5.32 and the standard deviation was 1.10. The detailed items can be found in Table 3.1.

### **Control Variables**

I included one demographic variables (education) and job satisfaction that have been found to affect psychological well-being as control variables (Keyes, Shmotkin, & Ryff, 2002; Wright & Cropanzano, 2000). A level of education is known to be closely related to available

resources and chances in well-being (Keyes, Shmotkin, & Ryff, 2002). A high job satisfaction has been widely accepted to be closely related to a high psychological well-being since “happy” workers can easily experience “happiness” in general life (Wright, 2005; Wright & Cropanzano, 2000).

**Table 3.1. Measurement for Study 1 (Continuing)**

| Variable                | Reference  | Scale   | Original items   | Revised items for this study | Cronbach's alpha |
|-------------------------|--|---|--|------------------------------|------------------|
| Work engagement         | Utrecht Work Engagement Scale (UWES; Schaufeli, Bakker, & Salanova, 2006). | from 1, "Strongly disagree," to 7, "Strongly agree" | <p>Vigor</p> <p>1) At my work, I feel bursting with energy</p> <p>2) At my job, I feel strong and vigorous</p> <p>3) When I get up in the morning</p> <p>4) I feel like going to work</p> <p>Dedication</p> <p>5) I am enthusiastic about my job</p> <p>6) My job inspires me</p> <p>7) I am proud of the work that I do</p> <p>Absorption</p> <p>8) I feel happy when I am working intensely</p> <p>9) I am immersed in my work</p> <p>10) I get carried away when I am working</p> |                              | .91              |
| Psychological Wellbeing | The 5-item World Health Organization Well-Being Index (WHO-5)              | From 1, "at no time", to 7, "all of the time"       | <p>1) I have felt cheerful and in good spirit</p> <p>2) I have felt calm and relaxed</p> <p>3) I have felt active and vigorous</p> <p>4) I woke up feeling fresh and rested</p> <p>5) My daily life has been filled with things that interest me</p>   |                              | .87              |

|   |   |   |  |   |     |
|---|---|---|--|---|-----|
| The physical environments of break room | Indoor Environmental Quality (IEQ) adopted from Zagreus, Huizenga, Arens, & Lehrer (2004) | from 1, “Strongly dissatisfied,” to 7, “Strongly satisfied” | <p>Thermal comfort</p> <p>1) How satisfied are you with the temperature in your workspace?</p> <p>Air quality</p> <p>2) How satisfied are you with the temperature in your workspace?</p> <p>Lighting</p> <p>3) How satisfied are you with the amount of light in your workspace?</p> <p>4) How satisfied are you with the visual comfort of the lighting (e.g., glare, reflections, contrast)?</p> <p>Acoustic quality</p> <p>5) How satisfied are you with the noise level in your workspace?</p> <p>6) How satisfied are you with the sound privacy in your workspace (ability to have conversations without your neighbors overhearing and vice versa)?</p> <p>Office layout</p> <p>7) How satisfied are you with the amount of space available for individual work and storage?</p> <p>8) How satisfied are you with the level of visual privacy?</p> <p>9) How satisfied are you with ease of interaction with co-workers?</p> | <p>Thermal comfort</p> <p>1) How satisfied are you with the temperature in your <i>employee break room</i>?</p> <p>Air quality</p> <p>2) How satisfied are you with the temperature in your <i>employee break room</i>?</p> <p>Lighting</p> <p>3) How satisfied are you with the amount of light in your <i>employee break room</i>?</p> <p>4) How satisfied are you with the visual comfort of the lighting (e.g., glare, reflections, contrast)?</p> <p>Acoustic quality</p> <p>5) How satisfied are you with the noise level in your <i>employee break room</i>?</p> <p>6) How satisfied are you with the sound privacy in your <i>employee break room</i> (ability to have conversations without your neighbors overhearing and vice versa)?</p> <p>Office layout</p> <p>7) How satisfied are you with the amount of space available for individual work and storage?</p> <p>8) How satisfied are you with the level of visual privacy?</p> <p>9) How satisfied are you with ease of interaction with co-workers?</p> | .94 |
|   |   |   | <p>Office furnishings</p> <p>10) How satisfied are you with the comfort of your office furnishings (chair, desk, computer, equipment, etc.)?</p> <p>11) How satisfied are you with your ability to adjust your furniture to meet your needs?</p> <p>12) How satisfied are you with the colours and textures of flooring, furniture and surface finishes?</p> <p>Cleanliness &amp; maintenance</p> <p>13) How satisfied are you with general cleanliness of the overall building?</p> <p>14) How satisfied are you with cleaning service provided for your workspace?</p> <p>15) How satisfied are you with general maintenance of the building?</p> <p>Overall satisfaction</p> <p>16) All things considered, how satisfied are you with your personal workspace?</p>  | <p>Office furnishings</p> <p>10) How satisfied are you with the comfort of your <i>employee break room</i> furnishings (chair, desk, <i>couch</i>, <i>vending machine</i>, equipment, etc.)?</p> <p>11) How satisfied are you with your ability to adjust your furniture to meet your needs?</p> <p>12) How satisfied are you with the colours and textures of flooring, furniture and surface finishes?</p> <p>Cleanliness &amp; maintenance</p> <p>13) How satisfied are you with cleaning service provided for your employee break room?</p> <p>14) How satisfied are you with cleaning service provided for your employee break room ?</p> <p>15) How satisfied are you with general maintenance of the building where your employee break room is in?</p> <p>Overall satisfaction</p> <p>14) All things considered, how satisfied are you with your personal employee break room?</p>  |     |

## **Study 2**

### **Research Design**

The experiment in a pretest–posttest experimental design using Virtual Reality technique (VR) was conducted in Study 2. In a pretest–posttest designed experiment, the subjects were treated with more than one of the conditions being studied. After being exposed to multiple treatments independently, participants were required to answer to the survey to see individuals' change in behavior or attitude (Charness, Gneezy, & Kuhn, 2012; Greenwald, 1976). A pretest–posttest design experiment has several advantages. First, its internal validity is seldom affected by random assignment which easily happens in a between-subjects design. Second, it augments statistical power of the result by increasing the sample numbers since each participant produces multiple responses. Lastly, given the nature of the within-subject design, the result naturally has a better fit to theoretical frames (Charness, Gneezy, & Kuhn, 2012). However, such a contextual comparison experiment is more vulnerable to “demand effect” which participants in an experiment catch the intentions of the experiment and change their behavior to the desired direction by the experimenters (Rosenthal, 1966).

Virtual Reality (VR) is a combination of technologies which allows users to interact within computer simulated environments as a vivid reflection of the real world, being immersed in the virtual world (Weiss & Jessel, 1998; Wirth et al., 2007). An increasing number of advantages using Virtual Reality technique has been reported. First, Virtual Reality technique makes it possible to control over presented stimulus more precisely, particularly in the case of repetitive experiments. Also, the technique can easily manipulate a scene parameter, allowing subjects to focus on a given environment. Third, as mentioned earlier, the Virtual Reality technique enables subjects to interact with a stimulated environment with a much higher level of

reality than a still image or video method (Castronovo, Nikolic, Liu, & Messner, 2013; Van Veen, Distler, Braun, & Bühlhoff, 1998). Mostly, virtual reality technique helps researchers to overcome the time and financial issues caused from a realization of design manipulation in a real world (Cosma, Ronchi, & Nilsson, 2016). Thus, for the experiment in the current study, Virtual Reality (VR) technique was adopted.

### **Target Population and Sample**

Target populations were the same as Study 1 (e.g., currently working or employees with working experience in any types of service operations who were born between 1982 to 2000—Millennials; Gurau, 2012; Lu & Gursoy, 2016) in the United States. To be eligible for study 2, the same three conditions were required to be met.

### **Pilot Test**

The pilot test was conducted before a subsequent main study to ensure the success of manipulation of the intervention and to test the feasibility of methods and procedures. The sample size for pilot study might differ depending on the main purpose of pilot study such as evaluating item performance or effecting size and making an administration of experiment easier (Hertzog, 2008). I employed 32 people as recommended by Nieswiadomy (2002). Thirty-two undergraduate students working at hotels were invited for the pilot-test. The results of pilot test indicated that scales for workplace friendship opportunities has a good reliability of 0.86. In the pilot test, the initial independent variable was emotional exhaustion instead of positive affect. Based on the practices of pilot test, the main survey was decided to replace emotional exhaustion to positive affect with a consideration of the enduring nature of emotional exhaustion. In the pilot

study, participants were identically exposed to virtual reality spaces in the order of existing condition first and manipulated condition later. In the main experiment, the order of virtual models was randomly mixed to overcome potential bias caused from within-subject design (Charness, Gneezy, & Kuhn, 2012).

### **Data Collection Procedures**

To collect the data, I recruited the participants from the university located in a small-sized city in the Midwest. Participants were recruited via an advertisement in the University's daily e-newsletter, in-class announcements, and flyers posted throughout campus. To be eligible for the study, potential participants should meet the following three conditions; (1) currently working or have worked for any types of service operations (2) located in the United States, and (3) should have been born between 1982 and 2000—Millennials; (Gurau, 2012; Lu & Gursoy, 2016).

Since the experiment for Study 2 was adopted with the utilization of Virtual Reality technique, the experiment was conducted in a virtual reality lab. Once the participants agreed to take part in the experiment, confidentiality and voluntary participation were guaranteed through a cover letter for Study 2 as well. In order to encourage participation, a \$10 gift certificate to a local coffee shop was given.

Before starting the experiment, participants were given a copy of the informed consent form. This consent form was guided and approved by Institutional Review Board (see Appendix B). The participants were also advised at the beginning of the study about side effects of virtual reality technology such as dizziness, motion sickness, and headache and that, they were free to discontinue the study. Participants were seated in an armchair in front of a computer on the table.

In the experiment, each subject was shown two virtual reality videos; existing condition and manipulated condition. An order of virtual reality models was randomly mixed. The examples of the manipulated virtual reality video were attached in Appendix E for the reference. A wireless joystick was provided to participants in order to navigate and move within the created environment. The video describing the existing condition was exposed first. The existing condition video portrayed a typical employee break room in the hotel. The virtual reality video was created based on the actual employee break rooms of hotels located in Mid-west to reflect break situations realistically. There was a wide table with coworkers sitting in chairs. Also, simple amenities such as coffee maker, small refrigerator, and lockers were equipped. No aesthetic design was added in the interior design. Researchers instructed subjects with how to use the joystick and answer to questions when subjects ask. After an exposure to the existing condition, respondents answered the questionnaires asking their positive affect and perceived workplace friendship opportunities. When subjects completed the survey, they explored the second virtual reality video with individual pods, a layout variation. There were partitions that blocks a certain amount of sound and sight from coworkers and secure privacy. In the individual pods, a cushion and small table were equipped. A table where workers can socialize was placed between the partitions of individuals pods. Subjects who finished the exploration of the second video were then distributed the same survey.

### **Measurements**

Overall contents regarding measurements such as 7-point Likert Scale from 1, “*Strongly disagree*” to 7, “*Strongly agree*” and the number of sessions to measure each variable.



### **Positive Affect**

Positive affect was assessed with ten adjectives by Crawford and Henry (2004). The items were to ask respondents' affective states for each adjective (i.e., excited and inspired) at the moment when the questions were asked. Positive affect was evaluated with 7-point scales. The Cronbach's alpha was 0.95 and the mean of the averaged value of 10 items was 5.06. The total of ten positive affect items can be found in Table 3.2.

### **Workplace Friendship Opportunities**

Workplace friendship opportunities were measured using Riordan and Griffeth (1995)'s six-item scale originally from Hackman and Lawler (1971). This scale was developed to assess to the extent to which it is easy for employees to build a friendship with their colleagues and how much prevalent it is at work. The Cronbach's alpha was 0.84. The mean of the averaged value of 6 items was 5.70. The detailed items can be found in Table 3.2.

**Table 3.2. Measurement for Study 2**

| Variable                                 | Reference                   | Scale   | Original items  | Reliability<br>(Cronbach's<br>alpha) |
|--|-----------------------------|---|---|--------------------------------------|
| Positive affect                          | Crawford and Henry (2004)   | 7-point scales  | 1) Interested<br>2) Alert<br>3) Attentive<br>4) Excited<br>5) Enthusiastic<br>6) Inspired<br>7) Proud<br>8) Determined<br>9) Strong<br>10) Active   | .95                                  |
| Workplace<br>friendship<br>opportunities | Riordan and Griffeth (1995) | from 1, "Strongly<br>disagree,"<br>to 7, "Strongly agree" | 1) I have the opportunity to get to know my coworkers<br>2) I am able to work with my coworkers to collectively solve problems<br>3) In my organization, I have the chance to talk informally and visit with others<br>4) Communication among employees is encouraged by my organization<br>5) I have the opportunity to develop close friendships at my workplace<br>6) Informal talk is tolerated by my organization as long as the work is completed | .84                                  |

## Chapter 4 - Results

This chapter has described the results of data analysis and based on the results, the interpretations of findings has been offered as well.

### Study 1

#### The Profile of The Respondents

Initially 347 of responses were collected from Amazon M Turk. I removed 36 of initial participants who were not qualified for eligible participants and did not pass attention check question such as “Please choose “*Strongly Disagree*” for this statement to continue the survey, or you will not be able to finish it” and those who did not finish the survey thoroughly by passing the questions. The final number of responses that I utilized for study 1 was 311. Of all eligible responses, 198 were men (63.7%), 112 were women (36.0%) and 1 answered as other gender (0.3%). The majority of respondents were Caucasian (non-Hispanic) (55%,  $n = 171$ ), followed by Asian/Pacific Islanders with 27.3% ( $n = 85$ ), African-American (non-Hispanic) with 10.0% ( $n = 31$ ), Latino or Hispanic with 6.8% ( $n = 21$ ) and Native American or Aleut with 1.0% ( $n = 3$ ). The distribution of occupational roles were 131 food service operations employees (42.1%), 129 hotel employees (41.5%), and 51 other service sectors including catering event company (16.4%). Among respondents who are working at hotels are working at midscale hotels the most (19.3%,  $n = 60$ ), following by economy hotel (10.3%,  $n = 32$ ), upscale hotel (6.8%,  $n = 21$ ), and luxury hotel (5.1%,  $n = 16$ ). For restaurant employees, fast food was dominant operation type (14.5%,  $n = 45$ ). Casual dining was the second (12.9%,  $n = 40$ ), following by fast-casual dining (10.6%,  $n = 33$ ), and fine dining (4.2%,  $n = 13$ ). 284 of respondents (91.3%) are working as a full time while 27 of them are a part timer (8.7%). The distribution of respondents’ tenure was as

follows; 3 to 5 years (44.4%,  $n = 138$ ), 1 to 2 years (32.5%,  $n = 101$ ), 6 to 10 years (13.5%,  $n = 42$ ), and less than 1 year (6.4%,  $n = 20$ ). The full profile of the participants is summarized in Table 4.1.

**Table 4.1 The Profile of The Respondents for Study 1**

| Demographics of Samples           |        |         | (N=311)                       |        |         |
|-----------------------------------|--------|---------|-------------------------------|--------|---------|
|                                   | Number | Percent |                               | Number | Percent |
| <b>Gender</b>                     |        |         | <b>Employment Status</b>      |        |         |
| Male                              | 198    | 63.7%   | Full time                     | 284    | 91.3%   |
| Female                            | 112    | 36.0%   | Part time                     | 27     | 8.7%    |
| Other                             | 1      | 0.3%    | <b>Working years in total</b> |        |         |
| <b>Ethnic Status</b>              |        |         | 3 to 5 years                  | 138    | 44.4%   |
| Caucasian (non-Hispanic)          | 171    | 55.0%   | 1 to 2 years                  | 101    | 32.5%   |
| Asian/Pacific Islanders           | 85     | 27.3%   | 6-10 years                    | 42     | 13.5%   |
| African-American (non-Hispanic)   | 31     | 10%     | Less than 1 year              | 20     | 6.4%    |
| Latino or Hispanic                | 21     | 6.8%    | More than 11 years            | 10     | 3.2%    |
| Native American or Aleut          | 3      | 1.0%    | <b>Type of hotel</b>          | 129    |         |
| <b>Highest level of education</b> |        |         | Midscale hotel                | 60     | 19.3%   |
| 4 years' College                  | 198    | 63.7%   | Economy hotel                 | 32     | 10.3%   |
| 2-years' College                  | 44     | 14.1%   | Upscale hotel                 | 21     | 6.8%    |
| Graduate School                   | 35     | 11.3%   | Luxury hotel                  | 16     | 5.1%    |
| High School                       | 34     | 10.9%   | <b>Type of restaurant</b>     | 131    |         |
| <b>Occupational roles</b>         |        |         | Fast food                     | 45     | 14.5%   |
| Restaurants                       | 131    | 42.1%   | Casual dining                 | 40     | 12.9%   |
| Hotels                            | 129    | 41.5%   | Fast-casual dining            | 33     | 10.6%   |
| Catering events company           | 40     | 12.9%   | Fine dining                   | 13     | 4.2%    |
| Other                             | 11     | 3.5%    |                               |        |         |

### Confirmatory Factor Analysis

I first ran the confirmatory factor analysis (CFA) using R to ensure whether the data fits my measurement model (i.e., Physical environment of employee break room, work engagement, and employees' psychological well-being). The CFA results indicated that my hypothesized three-factor model fits the data well. I evaluated four fit indices: (a) the  $\chi^2$  and degrees of freedom, (b) CFI (the comparative fit index), (c) SRMR (Standardized Root Mean Square Residual), and (d) RMSEA (the root-mean-square error of approximation). Previous scholars

suggested that the good model fit indices should be greater than .90 for CFI, for RMSEA and SRMR less than .08 (Byrne, 2001; Korsgaard & Roberson, 1995; Steiger, 1990; Vandenberg and Lance, 2000). The hypothesized model with three factors showed a potential adequate model fit ( $\chi^2 [402] = 1098.22^{***}$ , CFI = .88, SRMR = .05, and RMSEA = .08). Even though CFI might not be satisfying, the sample size was big enough to put more weight on other indices which showed a good model fit (Hu & Bentler, 1999; Kline, 2011; McDonald & Ho, 2002). Also, the current three-factor model indicated a better fit than alternative model we tested, a two-factor model in which physical environment of employee break room and work engagement were loaded together ( $\chi^2 [404] = 1729.69^{***}$ , CFI = .78, SRMR = .08, and RMSEA = .10) and a one-factor model in which all items were loaded onto one latent construct ( $\chi^2 [405] = 2010.14^{***}$ , CFI = .74, SRMR = .08, and RMSEA = .11). As a result, this model used in the current study is determined as the adequacy of fit. The results of CFA are presented in Table 4.2.

**Table 4.2 Results of Confirmatory Factor Analysis**

| Model              | $\chi^2$ | CFI  | SRMR | RMSEA | P value |
|--------------------|----------|------|------|-------|---------|
| Three-factor Model | 1098.22  | 0.88 | 0.05 | 0.08  | 0.000   |
| Two-factor Model   | 1729.69  | 0.78 | 0.08 | 0.10  | 0.000   |
| One-factor Model   | 2010.14  | 0.74 | 0.08 | 0.11  | 0.000   |

Note: CFI refers the comparative fit index, SRMR means Standardized Root Mean Square Residual, and RMSEA indicates the root-mean-square error of approximation.

### Test of Hypotheses

Table 4.3 presents the mean, standard deviations and zero-order Pearson correlations for all variables in study 1 including control variables.

**Table 4.3 Means, Standard Deviations, and Correlations**

| Variables | Mean | SD | 1 | 2 | 3 | 4 | 5 |
|-----------|------|----|---|---|---|---|---|
|-----------|------|----|---|---|---|---|---|

|             |      |      |       |       |       |       |     |
|-------------|------|------|-------|-------|-------|-------|-----|
| 1. EDU (CV) | 2.75 | 0.80 | 1     |       |       |       |     |
| 2. JS (CV)  | 5.23 | 1.29 | .28** | .80   |       |       |     |
| 3. PE       | 5.10 | 1.43 | .14*  | .47** | .94   |       |     |
| 4. WE       | 5.14 | 1.10 | .24** | .80** | .57** | .91   |     |
| 5. PW       | 5.31 | 1.10 | .11*  | .71** | .50** | .71** | .87 |

Note: \*\*Significant at the  $p < 0.01$  level, \* at the  $p < 0.05$  level,  $N=311$ , The reliabilities are in the main diagonal. All items were measured on a 7-point Liker scale ranging from 1 (strongly disagree) to 7 (strongly agree) except EDU. EDU means Education (1-High school, 2-2-years' college, 3-4 years' college, 4-Graduate School), JS means Job Satisfaction, CV refers to Control Variable, PE indicates Physical Environment of employee break room, WE refers to Work Engagement, and PW means Psychological Well-being.

The results of the analysis are presented in Table 4.4. To test hypotheses 1 and 2, I conducted a linear regression using the SPSS Statistics 22 and saw standardized coefficients of the hypothesized paths while testing education and job satisfaction as control variables. Hypothesis 1 suggested that physical environment of employee break room is positively related to work engagement and the association was found to be significant ( $r = .27, p < .001$ ). Thus, hypothesis 1 was supported. Hypothesis 2 proposed the association between work engagement and employees' psychological well-being. Work engagement was positively related to employees' psychological well-being ( $r = .26, p < .001$ ). Therefore, hypothesis 2 was supported as well.

Table 4.4 also indicates the R-squared values of each regression model of the study. Model 1 with job satisfaction and education showed 0.64 of R-squared value which is relatively high proportion of the variance. This value might be because of the highly close correlation between job satisfaction and work engagement since both two variables stand for a similar concept related to the degree to how happy employees are with their jobs (Lu, Lu, Gursay, & Neale, 2016; Rothmann, 2008). Despite of the high proportion of variance by control variables, physical environment of employee break room still explained for work engagement, showing an increasement in the R-square value and being statistically significant (Model 2; Changed  $R^2 =$

.05,  $p < .001$ ). With a dependent variable of employees' psychological well-being, control variables had 51% of explanatory power in model 3. This high proportion of control variables can be explained by previous studies identifying that job satisfaction is one of the most relevant factor to employees' psychological well-being (Wright, 2005; Wright & Cropanzano, 2000).

Model 4 showed an increased proportion of the variance with a variable of physical environment of employee break room and the model also was fully supported in a statistical sense (Model 4; Changed  $R^2 = .06$ ,  $p < .001$ ). After entering work engagement, compared to Model 3 with solely control variables, the R squared value went up, indicating the model accounted for 59% of the variation in employees' psychological well-being (Model 5; Adjusted  $R^2 = .59$ ,  $p < .001$ ).

**Table 4.4 Results of Linear Regression Analysis**

| Dependent Variable          | Work Engagement |         | Employees' Psychological Well-being |         |         |
|-----------------------------|-----------------|---------|-------------------------------------|---------|---------|
|                             | Model 1         | Model 2 | Model 3                             | Model 4 | Model 5 |
| <i>Control Variables</i>    |                 |         |                                     |         |         |
| Education                   | .04             | .30     | -.09*                               | -.09*   | -.10**  |
| Job Satisfaction            | .79***          | .63***  | .73***                              | .56***  | .40***  |
| <i>Independent Variable</i> |                 |         |                                     |         |         |
| PE                          |                 | .27***  |                                     | .30***  | .23***  |
| <i>Mediator</i>             |                 |         |                                     |         |         |
| WE                          |                 |         |                                     |         | .26***  |
| F-Value                     | 274.12          | 224.99  | 160.49                              | 134.67  | 109.44  |
| $R^2$                       | .64             | .69     | .51                                 | .57     | .59     |
| Adjusted $R^2$              | .64             | .68     | .51                                 | .56     | .58     |
| Changed $R^2$               | .64             | .05     | .51                                 | .06     | .08     |

Note: \*Significant at the  $p < 0.05$  level. \*\*\*Significant at the  $p < 0.001$  level, N=311, PE indicates Physical Environment of employee break room, WE refers to Work Engagement, and PW means Employees' Psychological Well-being.

To test hypothesis 3 proposing the mediating effect of work engagement between physical environment of employee break room and employees' psychological well-being,

I conducted Preacher and Hayes' (2008) with 5,000 bootstrapped resamples with confidence intervals set at 95% in SPSS using PROCESS v3.4 by Andre F. Hayes. The confidence intervals between the lower 2.5% and the upper 2.5% of this indirect effect did not include zero, confirming the significant indirect effects of physical environment of employee break room on employees' psychological well-being through work engagement. The results are summarized in Table 4.5.

**Table 4.5 Bootstrapped Mediation Analysis**

| Indirect Effect | 95% Confidence Interval |           |       |       |
|-----------------|-------------------------|-----------|-------|-------|
|                 | Est.                    | <i>SE</i> | Lower | Upper |
| PE → WE → PW    | .0701                   | .0333     | .0184 | .1485 |

Note: PE indicates Physical Environment of employee break room, WE refers to Work Engagement, and PW means Employees' Psychological Well-being.

## Study 2

### The Profile of The Respondents

The total of 91 subjects participated in the experiment of Study 2. One response was removed due to its incompleteness and the number of 90 was finally utilized for the hypothesis testing. The research design was a pretest-posttest design where each subject was exposed to both treatments and measurement survey periods. Out of 90 participants, 53 (58.9%) were female and 37 were male (41.1%). The distribution of ethnic status of respondents was as follows; Caucasian (non-Hispanic) (42.2%,  $n = 38$ ) following by Asian/Pacific Islanders with 35.6% ( $n = 32$ ), Latino or Hispanic with 16.7% ( $n = 15$ ), African-American (non-Hispanic) with 4.4% ( $n = 4$ ), and Native American or Aleut with 1.0% ( $n = 1$ ). The majority of industry of study sample was restaurants, accounting for 60% ( $n = 54$ ). Others (i.e., dairy bar and bar) followed afterward with 27.8% ( $n = 25$ ) and hotels with 6.7% ( $n = 6$ ). The aggregate percentages of employment



status were 13.3% full time ( $n = 12$ ) and 86.7% part time ( $n = 78$ ). The 93.3% ( $n = 84$ ) of participants were single. The 50.0% ( $n = 25$ ) of the study sample had a working experience or were working at casual dining, followed by fast food with 20.0% ( $n = 10$ ), fast-casual dining with 16.0% ( $n = 8$ ), and fine dining with 14.0% ( $n = 7$ ). Each 50.0% and 33.3% of respondents ( $n = 3, 2$ , respectively) are working or have worked for midscale, upscale, and luxury hotel while one sample worked at economy hotel (16.7%). The number of 44 participants was shown the manipulated conditions first and the rest of the participants ( $n = 46$ ) experienced the existing conditions first. The demographic information is presented in Table 4.6.

**Table 4.6 The Profile of The Respondents for Study 2**

| Demographics of Samples         |        |         | (N=90)                    |        |         |
|---------------------------------|--------|---------|---------------------------|--------|---------|
|                                 | Number | Percent |                           | Number | Percent |
| <b>Gender</b>                   |        |         | <b>Marital Status</b>     |        |         |
| Female                          | 53     | 58.9%   | Single                    | 84     | 93.3%   |
| Male                            | 37     | 41.1%   | Married                   | 6      | 6.7%    |
| <b>Ethnic Status</b>            |        |         | <b>Employment Status</b>  |        |         |
| Caucasian (non-Hispanic)        | 38     | 42.2%   | Part time                 | 78     | 86.7%   |
| Asian/Pacific Islanders         | 32     | 35.6%   | Full time                 | 12     | 13.3%   |
| Latino or Hispanic              | 15     | 16.7%   | <b>Type of restaurant</b> | 54     |         |
| African-American (non-Hispanic) | 4      | 4.4%    | Casual dining             | 25     | 50.0%   |
| Native American or Aleut        | 1      | 1.1%    | Fast food                 | 10     | 20.0%   |
| <b>Occupational roles</b>       |        |         | Fast-casual dining        | 8      | 16.0%   |
| Restaurants                     | 54     | 60.0%   | Fine dining               | 7      | 14.0%   |
| Others                          | 25     | 27.8%   | <b>Type of hotel</b>      | 6      |         |
| Hotels                          | 6      | 6.7%    | Upscale hotel             | 3      | 50.0%   |
| Bar                             | 3      | 3.3%    | Midscale hotel            | 2      | 33.3%   |
| Catering events company         | 2      | 2.2%    | Economy hotel             | 1      | 16.7%   |

### Test of Hypotheses

I conducted the paired-samples  $t$  tests using SPSS so as to test hypotheses 4 and 5.

Hypothesis 4 predicted that employees in employee break room with individual pods would report higher employees' positive affect. Indeed, the respondents reported an increase in positive affect after exploring manipulated virtual reality model with individual pods (Hypothesis 4; Before  $M = 4.03$ , After  $M = 5.23$ ,  $t(89) = 6.88$ ,  $p < .001$ ).

For workplace friendship opportunities (Hypothesis 5), there was a significant mean difference before and after the manipulated virtual reality model. After experiencing the manipulated virtual reality model, the respondents reported higher level of workplace friendship opportunities with coworkers in their workplace (Hypothesis 5; Before  $M = 5.24$ , After  $M = 5.66$ ,  $t(89) = 3.34$ ,  $p < .001$ ). The results of the paired-samples  $t$  tests are shown below in Table 4.7.

**Table 4.7 Means, Standard Deviations, and Pair Sample  $t$  Test**

| Variables                           | Time   |      |       |      |           |    |
|-------------------------------------|--------|------|-------|------|-----------|----|
|                                     | Before |      | After |      | Pair Test |    |
|                                     | M      | SD   | M     | SD   | t         | df |
| 1. Positive Affect                  | 4.03   | 1.46 | 5.23  | 1.06 | 6.88***   | 89 |
| 2. Workplace Friendship Opportunity | 5.24   | 1.11 | 5.66  | 0.81 | 3.34**    | 89 |

## **Chapter 5 - Discussion**

This chapter has discussed the implications, limitations of this research project and suggestion for future research. According to the results of data analysis, all hypotheses suggested in this study (Hypothesis 1,2,3,4, and 5) were supported. The impactful role of the physical environment of employee break room on employees' psychological well-being through work engagement during within-day breaks was empirically identified. Also, individual pods securing private spaces turned out to make changes in employees' perception and affective status (i.e., workplace friendship opportunities and positive affect).

### **Summary of Major Findings**

Results reveal that the physical environment of employee break room can have a positive influence on work engagement (Hypothesis 1). This result is in the same line with Coffeng et al., (2014)'s study identifying that the intervention of the physical environment possibly influence on dedication and absorption, subdimensions of work engagement. The correlation between work engagement and employees' psychological well-being (Hypothesis 2) as well as the mediating role of work engagement between the physical environment of employee break room and employees' psychological well-being were supported (Hypothesis 3), thus showing that work engagement might boost or constrain employees' psychological well-being by being affected by a condition of indoor environment of employee break room. This result confirmed E-R model (Meijman & Mulder, 1998). According to the data of study 2, employees who take within-day breaks in an employee break room with individual pods reported a higher level of positive affect (Hypothesis 4). This results indicates that securing a privacy from a private space may be highly related to employees' affective status. In addition to that, an increase in employees' perception

of workplace friendship opportunities was seen in an employee break room with individual pods (Hypothesis 5), being consistent with the previous study of Colbert, Bono, and Purvanova (2016). The series of results showed that individual pods creating personal space and having an individual's privacy is beneficial in forming employees' their perception towards social opportunities.

### **Theoretical Implications**

First, this study is one of the first to address the importance of work breaks, particularly within-day breaks, in the hospitality industry. Hospitality employees are suffering from the doubled burden of physical and emotional labor, causing uncontrollable stress. Accumulated stress from the poor work environment adds up to the severe level and eventually aggravate employees' psychological well-being. With the restorative effect and advantages of within-day breaks on employees' well-being, more attention to within-day breaks should be urgently paid on. Researchers in health care field have started to recognize the importance of staff break areas and conducted related research. There are a handful of studies regarding the relationship between the conditions of staff break area and a wide range of outcomes in healthcare industry. For example, Nejati, Rodiek, and Shepley (2016) identified that high-quality staff break areas can improve nurses' job satisfaction and performance. In a qualitative part of their study, well-conditioned staff break areas are also beneficial to make employees feel appreciated. Nejati, Shepley, Rodiek, Lee, and Varni (2016) added to evidence that restorative environmental characteristics such as privacy, tranquility, visual access to outdoors, and daylight have the potential to lower the fatigue level and to improve the overall break efficiency. These studies and according results can be applied to the hospitality industry since the nature of both industries

have a lot in common; a shortage of labor, high turnover, irregular working hours, and high exposure to customers (Bitner, Booms & Tetreault, 1990; Witkoski & Dickson, 2010). Thus, the study awakes both the hospitality industry and academia to the significant impact of taking a within-day breaks in a well-maintained employee break room on employees' psychological well-being as a pioneer and provide an empirical grounding for future work breaks study.

Second, in particular, to advance more comprehensive understanding about on-the-job recovery, I took into account where employees take a within-day breaks. The results of the study showed that physical environment (i.e., thermal comfort, air quality, lighting, acoustic quality, office layout, office furnishings, cleanliness, maintenance) of employee break room clearly affects employees' psychological well-being through work engagement with a notion of servicescape model (Bitner, 1992). The effects of service facilities from the customers' perspective have been well-recognized and thereby extensively studied (Mattila & Wirtz, 2001; Mason & Paggiaro, 2012; Reimer & Kuehn, 2005). Not equal attention has been paid to the impact of a manmade physical environment on employees and most of the previous servicescape studies exploring employees' side predominantly has investigated the context of service encounters in a role of service providers (Kearney, Coughlan, & Kennedy, 2012; Parish, Berry, & Lam, 2008). The current study drew upon the servicescape model of the interactive impact of the physical surroundings on employees' moods and perception while they are taking within-day breaks. Thus, the findings of the study support the servicescape model in a context of the physical environment of employee break room and within-day breaks.

Third, this study identified work engagement as underlying paths connecting the physical environment of employee break room to employees' psychological well-being. I tested the mediation effects of work engagement confirming ER model (Meijman & Mulder, 1998) and

COR theory (Hobfoll, 2002): In a well-maintained employee break room, employees can gain vigor, one of the subdimensions of work engagement by not consuming extra effort during within-day breaks. Such vigor serves as a foundation of individual resources (Siltaloppi, Kinnunen, & Feldt, 2009) and the newly acquired personal resources play an important role as an essential source of positive psychological well-being (Liao, Shonkoff, & Dunton, 2015). Companies putting their effort to equip and maintain a favorable physical environment of employee break room is seemingly a cue of organizational support that can evoke employees' dedication and absorption to their work, subdimensions of work engagement. Put together, a favorable employee break room can aid employees to have a complete recovery from within-day breaks and increase work engagement by creating a variety of positive affective resources such as happiness and enthusiasm (Shimazu & Schaufeli, 2009). The positive emotion is spilled over to other areas of life as well (Shimazu et al., 2008). In other words, the results of the study theoretically confirmed that employee break room is closely related to stalling employees' extra resources consumption and to creating new kinds of resources, leading to overall increased well-being.

Lastly, this study broadened the horizon of organizational behavior studies by adopting virtual reality technology (VR) in the experiment. The objective of the study 2 was to identify the effect of a proper configuration with individual pods which create private spaces and secure privacy for employees. Virtual reality technology is a great means to experimentally portray the physical surroundings and efficiently manipulate the physical variable at a low cost which is often challenged in field settings (Pierce & Aguinis, 1997). Also, since virtual reality environment interacts with users in real-time, the participants can receive "action-supportive information on what users can do with the environment", increasing the reality of the experiment

(Cikajlo & Matjačić, 2009; Tussyadiah, Wang, Jung, & Dieck, 2018, p.4). The vividly created VR model offers a highly realistic environment for the participants to explore and to be more immersed in a virtual world than any written type of vignettes or even videotapes (Pierce & Aguinis, 1997). These advantageous characteristics of VR consequently enhance the internal and external validity of the experiment (Pierce & Aguinis, 1997).

### **Practical Implications**

This study also makes significant practical contributions to the hospitality field. First, managers in the hospitality industry should not overlook the importance of within-day break. With the beneficial effect of within-day breaks in terms of work engagement and employees' psychological well-being, firms may strategically create an organizational climate to encourage employees to take a proper within-day break without having employees feel guilty about it. Also, managers are strongly recommended to maintain employee break room in a good condition. All physical environmental components can be applied as criteria for the maintenance of employee break room. For example, to keep an ideal temperature setting is important for employees' thermal comfort in the employee break room (Roelofsen, 2015). To have the right amount of lighting as well as to control air quality with air purifier can contribute to affecting employees' well-being (Freihoefer et al., 2015; Mills, Tomkins, & Schlangen, 2007). Besides, ergonomic furniture to release physical fatigue of hospitality employees is another thing to be suggested for their better within-day breaks (Nejati, Rodiek, & Shepley, 2016). Meanwhile, all these sorts of efforts in a company-level should be lasted persistently enough for employees to perceive as organizational support and enough to develop into improved psychological well-being.

In line with study 2, a private space in the employee break room should be equipped in order to trigger employees' positive affect by securing visual and sound privacy and to balance social activities. Thus, when hospitality firm designs an employee break room, it should consider an open-space design with proper configurations in it. The best possible layout is to create personal spaces with several individual pods in it as the experiment did. First, furniture such as sofa booth or high back sofa that have naturally guarantees a sort of privacy are valid answers. These options also gives employees the ability to create their own private space in their needs which can maximize the advantages of individual pods. One thing needed not to be forgotten is to arrange a communal area at the same time where employees can communicate when they want with each other. In that sense, utilizing movable walls or partition can be adopted for a sense of flexibility at low expense.

### **Limitations & Future Studies**

The current study embraces a few limitations that future studies may be better able to be addressed. First, even though this study showed physical environment of employee break room as the core component of employees' psychological well-being during within-day breaks, there might be other factors of work breaks affecting employees' psychological well-being such as break length and break time (Kim, Park, & Headrick, 2018). Break activities meaning what employees engage in during within-day break also can have an impact on employees' attitude and behaviors. Thus, it can be suggested for future studies to see how each physical components of employee break room (i.e., overall satisfaction towards employee break room, individual pods) affect work breaks and employees' psychological well-being by taking into account work breaks related variables and expand the scope of the study.



In line with this rationale, state law related to work breaks may need to be considered as one of the influential factors on the dependent variable. I only recruited subjects who participated in the experiment in the current study who were working in the hospitality facilities located in the Mid-west region. However, every state has its own state laws regarding work breaks regarding. Only twenty states require meal breaks by law (U.S. Department of Labor, 2020). For example, California, Colorado, Washington, or Guam requires 30 minutes if work exceeds five hours per day while Nevada requires 30 minutes of meal breaks if work is for 8 continuous hours (U.S. Department of Labor, 2020). Interestingly, Illinois has established hotel room attendant rules for hotel housekeeping employees to have 30 minutes meal period a day in which they work over seven hours. When it comes to generic paid within-day breaks, only nine states such as California, Colorado, Kentucky, and Oregon require a 10-minute rest period for every 4 hours of work. As explained, distinct work break state laws might have an effect on formulating the pattern of work breaks. Thus, future research should go further to examine how within-day breaks and recovery differs under each state. In addition to that, Oliver (2016) found that there were gaps in employee satisfaction between in fine dining restaurants and casual dining restaurants possibly due to the working atmosphere and the amount of money earned during the shift. Thus, another recommendation for further studies would be to look into other work and organizational factors such as the specific context of workplace including types of restaurants and hotels.

Thirdly, since I adopted a cross-sectional survey methodology to my study and all measurements were evaluated at one time, this study is hard to be free of common method bias (CMB) and potential distortion of the results (Campbell & Fiske, 1959; Podsakoff, 2003). To overcome this possible bias, making a separation between measurements temporally,

methodologically, or psychologically might be introduced (Podsakoff, MacKenzie, & Podsakoff, 2012). Future study might adopt a time lag between measurement, the most frequently suggested method (Podsakoff, MacKenzie, & Podsakoff, 2012).

Fourthly, the samples were only limited to employees who are working at and have worked for hospitality operations located in the United States. Consequentially, the results might be able to only apply to specific groups with certain conditions to be eligible for the current study. However, each industry has its unique nature and interactions with workers in the industry. All country also features their own cultural background which significantly influences employees' attitude and behavior. Thus, future study can broaden the extent of a study to cross-cultural and -industry.

Last, as discussed earlier, virtual reality technique (VR) with multi-sensory stimuli allows participants in the experiment to think they are in a real place instead of set of images while experiencing a sense of presence (Slater & Wilbur, 1997). Such persuasive feature of VR technique can bring out the changes of attitude and actual behavior from participants (Fox, Bailenson, & Binney 2009; Fox, Christy, & Vang, 2014).

## **Conclusion**

Despite mentally and physically high-demanding work environment of the hospitality industry, research regarding employee breaks which can replenish losses of psychological and emotional resources have not been conducted as much as it is needed. This study showed that taking within-day breaks in a well-conditioned room at a given workday can be a valid way to improve employees' psychological well-being through an increase of work engagement and layout of employee break room where it protects employees' privacy and personal spaces can

give a considerable impact on employees' positive affect and perception towards a possibility of social relationship development. Hopefully, these findings can be an intellectual grounding for further research on within-day breaks and the physical environment of employee break room and provide a helpful message to both academia and industry.

## References

- Al Horr, Y., Arif, M., Kaushik, A., Mazroei, A., Katafygiotou, M., & Elsarrag, E. (2016). Occupant productivity and office indoor environment quality: A review of the literature. *Building and Environment*, 105, 369-389.
- Altman, Y., & Baruch, Y. (2010). The organizational lunch. *Culture and Organization*, 16(2), 127-143.
- Aries, M. B., Veitch, J. A., & Newsham, G. R. (2010). Windows, view, and office characteristics predict physical and psychological discomfort. *Journal of Environmental Psychology*, 30(4), 533-541.
- Ariza-Montes, A., Arjona-Fuentes, J. M., Han, H., & Law, R. (2018). The price of success: A study on chefs' subjective well-being, job satisfaction, and human values. *International Journal of Hospitality Management*, 69, 84-93.
- ASHRAE (2004) *Standard 90.1: Energy Standard for Buildings Except Low-Rise Residential Buildings*. Atlanta, GA: American Society of Heating, Refrigerating and AirConditioning Engineers, Inc.
- Aubert-Gamet, V. (1997). Twisting servicescapes: diversion of the physical environment in a re-appropriation process. *International Journal of Service Industry Management*, 8(1), 26-41.
- Bakker, A. B. (2014). Daily fluctuations in work engagement: An overview and current directions. *European Psychologist*, 19, 227-236.
- Bakker, A. B., & Demerouti, E. (2008). Towards a model of work engagement. *Career Development International*, 13(3), 209-223.

- Bakker, A. B., Demerouti, E., & Verbeke, W. (2004). Using the job demands-resources model to predict burnout and performance. *Human Resource Management: Published in Cooperation with the School of Business Administration, The University of Michigan and in alliance with the Society of Human Resources Management*, 43(1), 83-104.
- Bakker, A. B., Schaufeli, W. B., Leiter, M. P., & Taris, T. W. (2008). Work engagement: An emerging concept in occupational health psychology. *Work & Stress*, 22(3), 187-200.
- Bakker, E., Walker, H., & Harland, C. (2006). Organizing for collaborative procurement: An initial conceptual framework. *Advancing Public Procurement: Practices, Innovation and Knowledge-Sharing*, 14-44.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37(2), 122-147.
- Beckers, D. G., van der Linden, D., Smulders, P. G., Kompier, M. A., van Veldhoven, M. J., & van Yperen, N. W. (2004). Working overtime hours: relations with fatigue, work motivation, and the quality of work. *Journal of Occupational and Environmental Medicine*, 46(12), 1282-1289.
- Berkup, S. B. (2014). Working with generations X and Y in generation Z period: Management of different generations in business life. *Mediterranean Journal of Social Sciences*, 5(19), 218-229.
- Bitner, M. J. (1992). Servicescapes: The impact of physical surroundings on customers and employees. *Journal of Marketing*, 56(2), 57-71.
- Bitner, M. J., Booms, B. H., & Tetreault, M. S. (1990). The service encounter: diagnosing favorable and unfavorable incidents. *Journal of Marketing*, 54(1), 71-84.
- Brand, J. L., & Smith, T. J. (2005, September). *Effects of Reducing Enclosure on Perceptions*

- of Occupancy Quality, Job Satisfaction, and Job Performance in Open-plan Offices*. In Proceedings of the Human Factors and Ergonomics Society Annual Meeting (Vol. 49, No. 8, pp. 818-820). California, CA: SAGE Publications.
- Brennan, A., Chugh, J. S., & Kline, T. (2002). Traditional versus open office design: A longitudinal field study. *Environment and Behavior*, 34(3), 279-299.
- Britt, T. W., Adler, A. B., & Bartone, P. T. (2001). Deriving benefits from stressful events: The role of engagement in meaningful work and hardiness. *Journal of Occupational Health Psychology*, 6(1), 53-63.
- Brookes, M. J., & Kaplan, A. (1972). The office environment: Space planning and affective behavior. *Human Factors*, 14(5), 373-391.
- Buhrmester, M. D., & Kwang, T., & Gosling, S. D., (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science*, 6, 3-5.
- Caesens, G., & Stinglhamber, F. (2014). The relationship between perceived organizational support and work engagement: The role of self-efficacy and its outcomes. *Revue Européenne de Psychologie Appliquée/European Review of Applied Psychology*, 64(5), 259-267.
- Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin*, 56(2), 81-105.
- Cao, X., & Qu, J. J. (2014). Analysis of Origins and Main Contents of Conservation of Resource Theory and Implications. *Human Resources Development of China*, 15, 75-80.
- Castronovo, F., Nikolic, D., Liu, Y., & Messner, J. (2013, October). An evaluation of

- immersive virtual reality systems for design reviews. In Proceedings of the 13th international conference on construction applications of virtual reality (Vol. 47).
- Charness, G., Gneezy, U., & Kuhn, M. A. (2012). Experimental methods: Between-subject and within-subject design. *Journal of Economic Behavior & Organization*, 81(1), 1-8.
- Chiang, C. F., & Jang, S. (2008). The antecedents and consequences of psychological empowerment: the case of Taiwan's hotel companies. *Journal of Hospitality & Tourism Research*, 32(1), 40-61.
- Chiang, F. F., Birtch, T. A., & Kwan, H. K. (2010). The moderating roles of job control and work-life balance practices on employee stress in the hotel and catering industry. *International Journal of Hospitality Management*, 29(1), 25-32.
- Choi, J. H., Loftness, V., & Aziz, A. (2012). Post-occupancy evaluation of 20 office buildings as basis for future IEQ standards and guidelines. *Energy and Buildings*, 46, 167-175.
- Cikajlo, I., & Matjacic, Z. (2009, June). Virtual reality tasks to enhance the therapeutic options of the single-joint rehabilitation robot. In 2009 IEEE International Conference on Rehabilitation.
- Clark, L. A., Watson, D., & Leeka, J. (1989). Diurnal variation in the positive affects. *Motivation and Emotion*, 13(3), 205-234.
- Coffeng, J. K., Hendriksen, I. J., Duijts, S. F., Twisk, J. W., van Mechelen, W., & Boot, C. R. (2014). Effectiveness of a combined social and physical environmental intervention on presenteeism, absenteeism, work performance, and work engagement in office employees. *Journal of Occupational and Environmental Medicine*, 56(3), 258-265.
- Cohen, J. (1988). *Statistical Power Analysis for The Behavioral Sciences* (2nd ed.). Hillsdale,

NJ: Lawrence Erlbaum Associates, Inc.

- Colbert, A. E., Bono, J. E., & Purvanova, R. K. (2016). Flourishing via workplace relationships: Moving beyond instrumental support. *Academy of Management Journal*, 59(4), 1199-1223.
- Colligan, T. W., & Higgins, E. M. (2006). Workplace stress: Etiology and consequences. *Journal of Workplace Behavioral Health*, 21(2), 89-97.
- Cosma, G., Ronchi, E., & Nilsson, D. (2016). Way-finding lighting systems for rail tunnel evacuation: A virtual reality experiment with Oculus Rift®. *Journal of Transportation Safety & Security*, 8(sup1), 101-117.
- Crawford, J. R., & Henry, J. D. (2004). The Positive and Negative Affect Schedule (PANAS): Construct validity, measurement properties and normative data in a large non-clinical sample. *British Journal of Clinical Psychology*, 43(3), 245-265.
- Creswell, J. W. (2003). A framework for design. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 9-11.
- Creswell, J. W. (2009). Mapping the field of mixed methods research. *Journal of Mixed Methods Research*, 3, 95-108.
- Cunningham, J. B., & McCrum-Gardner, E. (2007). Power, effect and sample size using GPower: practical issues for researchers and members of research ethics committees. *Evidence-Based Midwifery*, 5(4), 132-137.
- Demerouti, E., Bakker, A.B., Geurts, S.A.E., & Taris, T.W. (2009). *Current Perspectives on Job-Stress Recovery: Research in Occupational Stress and Well being* (Vol. 7, p. 85–123). Bingley, UK: JAI Press.
- Demerouti, E., Mostert, K., & Bakker, A. B. (2010). Burnout and work engagement: a



- thorough investigation of the independency of both constructs. *Journal of Occupational Health Psychology*, 15(3), 209-222.
- Desor, J. A. (1972). Toward a psychological theory of crowding. *Journal of Personality and Social Psychology*, 21(1), 79-83.
- Diener, E., Larsen, R. J., Levine, S., & Emmons, R. A. (1985). Intensity and frequency: dimensions underlying positive and negative affect. *Journal of Personality and Social Psychology*, 48(5), 1253-1265.
- Diener, E., Oishi, S., & Lucas, R. E. (2003). Personality, culture, and subjective well-being: Emotional and cognitive evaluations of life. *Annual Review of Psychology*, 54(1), 403-425.
- Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G\* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175-191.
- Fox, J. Christy, R. J. Vang, M. H. (2014). 11 The Experience of presence in Persuasive Virtual Environments. *Interacting with Presence: HCI and the Sense of Presence in Computer-mediated Environments*, 164-178.
- Fox, J., Bailenson, J., & Binney, J. (2009). Virtual experiences, physical behaviors: The effect of presence on imitation of an eating avatar. *Presence: Teleoperators and Virtual Environments*, 18(4), 294-303.
- Freeddy, J. R., & Hobfoll, S. E. (1994). Stress inoculation for reduction of burnout: A conservation of resources approach. *Anxiety, Stress and Coping*, 6(4), 311-325.
- Freihoefer, K., Guerin, D., Martin, C., Kim, H. Y., & Brigham, J. K. (2015). Occupants'

- satisfaction with, and physical readings of, thermal, acoustic, and lighting conditions of sustainable office workspaces. *Indoor and Built Environment*, 24(4), 457-472.
- Fritz, C., & Sonnentag, S. (2005). Recovery, health, and job performance: effects of weekend experiences. *Journal of Occupational Health Psychology*, 10(3), 187-199.
- Fritz, C., & Sonnentag, S. (2006). Recovery, well-being, and performance-related outcomes: The role of workload and vacation experiences. *Journal of Applied Psychology*, 91(4), 936-945.
- Fritz, C., Ellis, A. M., Demsky, C. A., Lin, B. C., & Guros, F. (2013). Embracing work breaks. *Organizational Dynamics*, 42(4), 274-280.
- Fritz, C., Sonnentag, S., Spector, P. E., & McInroe, J. A. (2010). The weekend matters: Relationships between stress recovery and affective experiences. *Journal of Organizational Behavior*, 31(8), 1137-1162.
- Fritz, C., Yankelevich, M., Zarubin, A., & Barger, P. (2010). Happy, healthy, and productive: the role of detachment from work during nonwork time. *Journal of Applied Psychology*, 95(5), 977-983.
- Geurts, S. A., & Sonnentag, S. (2006). Recovery as an explanatory mechanism in the relation between acute stress reactions and chronic health impairment. *Scandinavian Journal of Work, Environment & Health*, 32(6), 482-492.
- González-Romá, V., Schaufeli, W. B., Bakker, A. B., & Lloret, S. (2006). Burnout and work engagement: Independent factors or opposite poles?. *Journal of Vocational Behavior*, 68(1), 165-174.
- Greenwald, A. G. (1976). Within-subjects designs: To use or not to use?. *Psychological Bulletin*, 83(2), 314-320.

- Hackman, J. R., & Lawler, E. E. (1971). Employee reactions to job characteristics. *Journal of Applied Psychology*, 55(3), 259-283.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (1998). *Multivariate data analysis* (Vol. 5, No. 3, pp. 207-219). Upper Saddle River, NJ: Prentice hall.
- Hakanen, J. J., Bakker, A. B., & Schaufeli, W. B. (2006). Burnout and work engagement among teachers. *Journal of School Psychology*, 43(6), 495-513.
- Hakanen, J. J., Schaufeli, W. B., & Ahola, K. (2008). The Job Demands-Resources model: A three-year cross-lagged study of burnout, depression, commitment, and work engagement. *Work & Stress*, 22(3), 224-241.
- Halbesleben, J. R., Neveu, J. P., Paustian-Underdahl, S. C., & Westman, M. (2014). Getting to the “COR” understanding the role of resources in conservation of resources theory. *Journal of Management*, 40(5), 1334-1364.
- Harrison, G. W., Haruvy, E., & Rutström, E. E. (2011). Remarks on virtual world and virtual reality experiments. *Southern Economic Journal*, 78(1), 87-94.
- Hatch, M. J. (1987). Physical barriers, task characteristics, and interaction activity in research and development firms. *Administrative Science Quarterly*, 387-399.
- Haynes, B. P. (2008a). Impact of workplace connectivity on office productivity. *Journal of Corporate Real Estate*, 10(4), 286-302.
- Haynes, B. P. (2008b). The impact of office layout on productivity. *Journal of Facilities Management*, 6(3), 189-201.
- Hertzog, M. A. (2008). Considerations in determining sample size for pilot studies. *Research in Nursing & Health*, 31(2), 180-191.
- Hinkin, T. R., & Tracey, J. B. (2000). The cost of turnover: Putting a price on the learning

- curve. *Cornell Hotel and Restaurant Administration Quarterly*, 41(3), 14-21.
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44(3), 513-524.
- Hobfoll, S. E. (2001). The influence of culture, community, and the nested-self in the stress process: advancing conservation of resources theory. *Applied Psychology*, 50(3), 337-421.
- Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of General Psychology*, 6(4), 307-324.
- Hoover, C. S. (2017). *An Experimental Test of Recovery Experiences Contributing to Resource Restoration* (Doctoral dissertation, University of Tulsa).
- Hospitality industry turnover rate ticked higher in 2018. (2019, May 9). Retrieved from <https://restaurant.org/Articles/News/Hospitality-industry-turnover-rate-ticked-higher>.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55.
- Huang, L., Zhu, Y., Ouyang, Q., & Cao, B. (2012). A study on the effects of thermal, luminous, and acoustic environments on indoor environmental comfort in offices. *Building and Environment*, 49, 304-309.
- Hunter, E. M., & Wu, C. (2016). Give me a better break: Choosing workday break activities to maximize resource recovery. *Journal of Applied Psychology*, 101(2), 302-311.
- Jahncke, H., Hygge, S., Halin, N., Green, A. M., & Dimberg, K. (2011). Open-plan office noise: Cognitive performance and restoration. *Journal of Environmental Psychology*, 31(4), 373-382.

- Kaarlela-Tuomaala, A., Helenius, R., Keskinen, E., & Hongisto, V. (2009). Effects of acoustic environment on work in private office rooms and open-plan offices—longitudinal study during relocation. *Ergonomics*, 52(11), 1423-1444.
- Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal*, 33(4), 692-724.
- Kanste, O. (2011). Work engagement, work commitment and their association with well-being in health care. *Scandinavian Journal of Caring Sciences*, 25(4), 754-761.
- Karatepe, O. M. (2013). High-performance work practices and hotel employee performance: The mediation of work engagement. *International Journal of Hospitality Management*, 32, 132-140.
- Kearney, T., Coughlan, J., & Kennedy, A. (2012). An exploration of the effects of the servicescape on customer and employee responses in a grocery retail context, *Irish Journal of Management*, 32(2), 71-91
- Keyes, C. L., Shmotkin, D., & Ryff, C. D. (2002). Optimizing well-being: the empirical encounter of two traditions. *Journal of Personality and Social Psychology*, 82(6), 1007-1022.
- Kim, J., & De Dear, R. (2013). Workspace satisfaction: The privacy-communication trade-off in open-plan offices. *Journal of Environmental Psychology*, 36, 18-26.
- Kim, S., Park, Y., & Headrick, L. (2018). Daily micro-breaks and job performance: General work engagement as a cross-level moderator. *Journal of Applied Psychology*, 103(7), 772–786.
- Kim, S., Park, Y., & Niu, Q. (2017). Micro-break activities at work to recover from daily work demands. *Journal of Organizational Behavior*, 38(1), 28-44.

- Kim, W. G., & Moon, Y. J. (2009). Customers' cognitive, emotional, and actionable response to the servicescape: A test of the moderating effect of the restaurant type. *International Journal of Hospitality Management*, 28(1), 144-156.
- Kotrlik, J. W. K. J. W., & Higgins, C. C. H. C. C. (2001). Organizational research: Determining appropriate sample size in survey research appropriate sample size in survey research. *Information Technology, Learning, and Performance Journal*, 19(1), 43-50.
- Kühnel, J., & Sonnentag, S. (2011). How long do you benefit from vacation? A closer look at the fade-out of vacation effects. *Journal of Organizational Behavior*, 32(1), 125-143.
- Kühnel, J., Sonnentag, S., & Westman, M. (2009). Does work engagement increase after a short respite? The role of job involvement as a double-edged sword. *Journal of Occupational and Organizational Psychology*, 82(3), 575-594.
- Kühnel, J., Zacher, H., De Bloom, J., & Bledow, R. (2017). Take a break! Benefits of sleep and short breaks for daily work engagement. *European Journal of Work and Organizational Psychology*, 26(4), 481-491.
- Lancaster, L. C., & Stillman, D. (2003). *When Generations Collide: Who They Are, Why They Clash, How To Solve The Generational Puzzle at Work*. New York, NY: HarperBusiness.
- Laurence, G. A., Fried, Y., & Slowik, L. H. (2013). "My space": A moderated mediation model of the effect of architectural and experienced privacy and workspace personalization on emotional exhaustion at work. *Journal of Environmental Psychology*, 36, 144-152.
- Lee, J. H., Ku, J., Cho, W., Hahn, W. Y., Kim, I. Y., Lee, S. M., ... & Wiederhold, M. D.

- (2003). A virtual reality system for the assessment and rehabilitation of the activities of daily living. *Cyber Psychology & Behavior*, 6(4), 383-388.
- Lee, S. Y., & Brand, J. L. (2005). Effects of control over office workspace on perceptions of the work environment and work outcomes. *Journal of Environmental Psychology*, 25(3), 323-333.
- Lee, Y. S. (2010). Office layout affecting privacy, interaction, and acoustic quality in LEED-certified buildings. *Building and Environment*, 45(7), 1594-1600.
- Liao, Y., Shonkoff, E. T., & Dunton, G. F. (2015). The acute relationships between affect, physical feeling states, and physical activity in daily life: a review of current evidence. *Frontiers in Psychology*, 6, 1-7.
- Lin, Z., & Deng, S. (2008). A study on the thermal comfort in sleeping environments in the subtropics—developing a thermal comfort model for sleeping environments. *Building and Environment*, 43(1), 70-81.
- Llorens, S., Schaufeli, W., Bakker, A., & Salanova, M. (2007). Does a positive gain spiral of resources, efficacy beliefs and engagement exist?. *Computers in Human Behavior*, 23(1), 825-841.
- Lodging Econometrics (2017, May). Retrieved from [https://www.lodgingeconometrics.com/wpcontent/uploads/2017/08/HOTEC\\_June2017.pdf](https://www.lodgingeconometrics.com/wpcontent/uploads/2017/08/HOTEC_June2017.pdf).
- Lounsbury, J. W., & Hoopes, L. L. (1986). A vacation from work: Changes in work and nonwork outcomes. *Journal of Applied Psychology*, 71(3), 392-401.
- Lu, A. C. C., & Gursoy, D. (2016). Impact of job burnout on satisfaction and turnover

- intention: do generational differences matter?. *Journal of Hospitality & Tourism Research*, 40(2), 210-235.
- Lu, L., Lu, A. C. C., Gursoy, D., & Neale, N. R. (2016). Work engagement, job satisfaction, and turnover intentions: A comparison between supervisors and line-level employees. *International Journal of Contemporary Hospitality Management*, 28(4), 737-761.
- Lucas, A. F. (2003). The determinants and effects of slot servicescape satisfaction in a Las Vegas hotel casino. *UNLV Gaming Research & Review Journal*, 7(1), 1-19.
- Lyu, Y., Zhu, H., Zhong, H. J., & Hu, L. (2016). Abusive supervision and customer-oriented organizational citizenship behavior: the roles of hostile attribution bias and work engagement. *International Journal of Hospitality Management*, 53, 69-80.
- Lyubomirsky, S., King, L., & Diener, E. (2005). The benefits of frequent positive affect: Does happiness lead to success?. *Psychological Bulletin*, 131(6), 803-855.
- Maher, A., & von Hippel, C. (2005). Individual differences in employee reactions to open-plan offices. *Journal of Environmental Psychology*, 25(2), 219-229.
- Marans, R. W., & Yan, X. Y. (1989). Lighting quality and environmental satisfaction in open and enclosed offices. *Journal of Architectural and Planning Research*, 6, 118-131.
- Marzuq, N., & Drach-Zahavy, A. (2012). Recovery during a short period of respite: The interactive roles of mindfulness and respite experiences. *Work & Stress*, 26(2), 175-194.
- Maslach, c., Leiter, M. (1997). *The Truth About Burnout. How Organizations Cause Personal Stress and What to Do About It*. San Francisco, CA: John Wiley & Sons.
- Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology*, 52(1), 397-422.



- Mason, M. C., & Paggiaro, A. (2012). Investigating the role of festivalscape in culinary tourism: The case of food and wine events. *Tourism Management*, 33(6), 1329-1336.
- Mattila, A. S., & Wirtz, J. (2001). Congruency of scent and music as a driver of in-store evaluations and behavior. *Journal of Retailing*, 77(2), 273-289.
- McDonald, R. P., & Ho, M. H. R. (2002). Principles and practice in reporting structural equation analyses. *Psychological Methods*, 7(1), 64-82.
- McEwen, B. S. (1998). Protective and damaging effects of stress mediators. *New England Journal of Medicine*, 338(3), 171-179.
- Mehrabian, A., and James A. Russell (1974), *An Approach to Environmental Psychology*, Cambridge, MA: MIT Press.
- Meijman, T. F., & Mulder, G. (1998). Psychological aspects of workload. In P. J. D. Drenth & H. Thierry (Eds.), *Handbook of Work and Organizational Psychology* (Vol. 2, pp. 5–33). Hove, England: Psychology Press.
- Miller, M. J., Woehr, D. J., & Hudspeth, N. (2002). The meaning and measurement of work ethic: Construction and initial validation of a multidimensional inventory. *Journal of Vocational Behavior*, 60(3), 451-489.
- Mills, P. R., Tomkins, S. C., & Schlangen, L. J. (2007). The effect of high correlated colour temperature office lighting on employee wellbeing and work performance. *Journal of Circadian Rhythms*, 5(1), 2-10.
- Muraven, M., & Baumeister, R. F. (2000). Self-regulation and depletion of limited resources: Does self-control resemble a muscle?. *Psychological Bulletin*, 126(2), 247-259.
- Narainsamy, K., & Van Der Westhuizen, S. (2013). Work related well-being: Burnout, work

- engagement, occupational stress and job satisfaction within a medical laboratory setting. *Journal of Psychology in Africa*, 23(3), 467-474.
- Nejati, A., Rodiek, S., & Shepley, M. (2016). The implications of high-quality staff break areas for nurses' health, performance, job satisfaction and retention. *Journal of Nursing Management*, 24(4), 512-523.
- Newell, P. B. (1995). Perspectives on privacy. *Journal of Environmental Psychology*, 15(2), 87-104.
- Newman, A. J. (2007). Uncovering dimensionality in the servicescape: Towards legibility. *The Service Industries Journal*, 27(1), 15-28.
- Nieswiadomy, R.M. (2002). *Foundations of nursing research* (4th ed.). Upper Saddle River, NJ: Pearson Education.
- Oldham, G. R., & Brass, D. J. (1979). Employee reactions to an open-plan office: A naturally occurring quasi-experiment. *Administrative Science Quarterly*, 24, 267-284.
- Oliver, L. A. (2016). Work breaks, employee morale, and satisfaction in the Restaurant industry (Doctoral dissertation). Retrieved from <https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=4160&context=dissertations>
- Otterbring, T., Pareigis, J., Wästlund, E., Makrygiannis, A., & Lindstrom, A. (2018). The relationship between office type and job satisfaction: Testing a multiple mediation model through ease of interaction and well-being. *Scandinavian Journal of Work, Environment and Health*, 44(3), 330-334.
- Paolacci, G., & Chandler, J. (2014). Inside the Turk: Understanding Mechanical Turk as a participant pool. *Current Directions in Psychological Science*, 23(3), 184-188.

- Parish, J. T., Berry, L. L., & Lam, S. Y. (2008). The effect of the servicescape on service workers. *Journal of Service Research*, 10(3), 220-238.
- Park, J. Y., Back, R. M., Bufquin, D., & Shapoval, V. (2019). Servicescape, positive affect, satisfaction and behavioral intentions: The moderating role of familiarity. *International Journal of Hospitality Management*, 78, 102-111.
- Paychex.com. Feeling the Burn(out): Exploring How Employees Overcome Burnout. (2019, February 2). Retrieved from <https://www.paychex.com/articles/human-resources/impact-of-employee-burnout>.
- Pierce, C. A., & Aguinis, H. (1997). Using virtual reality technology in organizational behavior research. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 18(5), 407-410.
- Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 1037-1037.
- Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, 63, 539-569.
- Pressman, S. D., & Cohen, S. (2005). Does positive affect influence health?. *Psychological Bulletin*, 131(6), 925-971.
- Quinn, R. W., & Dutton, J. E. (2005). Coordination as energy-in-conversation. *Academy of Management Review*, 30(1), 36-57.
- Ragsdale, J. M., Beehr, T. A., Grebner, S., & Han, K. (2011). An integrated model of

- weekday stress and weekend recovery of students. *International Journal of Stress Management*, 18(2), 153-180.
- Rashid, M., Kampschroer, K., Wineman, J., & Zimring, C. (2006). Spatial layout and face-to-face interaction in offices—a study of the mechanisms of spatial effects on face-to-face interaction. *Environment and Planning B: Planning and Design*, 33(6), 825-844.
- Rashid, M., Wineman, J., & Zimring, C. (2009a). Space, behavior, and environmental perception in open-plan offices: A prospective study. *Environment and Planning B: Planning & Design*, 36, 432-449.
- Reimer, A., & Kuehn, R. (2005). The impact of servicescape on quality perception. *European Journal of Marketing*, 39(7), 785-808
- Riordan, C. M., & Griffeth, R. W. (1995). The opportunity for friendship in the workplace: An underexplored construct. *Journal of Business and Psychology*, 10(2), 141-154.
- Roelofsen, P. (2015). Healthy Ageing: differences between elderly and non-elderly in temperature sensation and dissatisfied. *Intell. Build. Int*, 9, 123–136.
- Rosenthal, R. (1966). *Experimenter Effects in Behavioral Research*. New York, NY: Appleton-Century-Crofts.
- Rothmann, S. (2008). Job satisfaction, occupational stress, burnout and work engagement as components of work-related wellbeing. *SA Journal of Industrial Psychology*, 34(3), 11-16.
- Ryu, K., & Jang, S. S. (2007). The effect of environmental perceptions on behavioral intentions through emotions: The case of upscale restaurants. *Journal of Hospitality & Tourism Research*, 31(1), 56-72.
- Salahuddin, M. M. (2010). Generational differences impact on leadership style and

- organizational success. *Journal of Diversity Management*, 5(2), 1-6.
- Salanova, M., Grau, R. M., Cifre, E., & Llorens, S. (2000). Computer training, frequency of usage and burnout: the moderating role of computer self-efficacy. *Computers in Human Behavior*, 16(6), 575-590.
- Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 25(3), 293-315.
- Schaufeli, W. B., & Van Rhenen, W. (2006). Over de rol van positieve en negatieve emoties bij het welbevinden van managers: Een studie met de Job-related Affective Well-being Scale (JAWS)[About the role of positive and negative emotions in managers' well-being: A study using the Job-related Affective Well-being Scale (JAWS)]. *Gedrag & Organisatie*, 19(4), 223-244.
- Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement*, 66(4), 701-716.
- Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies*, 3(1), 71-92.
- Shimazu, A., & Schaufeli, W. B. (2009). Is workaholism good or bad for employee well-being? The distinctiveness of workaholism and work engagement among Japanese employees. *Industrial Health*, 47(5), 495-502.
- Shimazu, A., Schaufeli, W. B., Kosugi, S., Suzuki, A., Nashiwa, H., Kato, A., ... & Goto, R.

- (2008). Work engagement in Japan: validation of the Japanese version of the Utrecht Work Engagement Scale. *Applied Psychology*, 57(3), 510-523.
- Shimazu, A., Schaufeli, W. B., Kubota, K., & Kawakami, N. (2012). Do workaholism and work engagement predict employee well-being and performance in opposite directions?. *Industrial Health*, 50(4), 316-321.
- Shirom, A. (2011). Vigor as a positive affect at work: Conceptualizing vigor, its relations with related constructs, and its antecedents and consequences. *Review of General Psychology*, 15(1), 50-64.
- Shuck, B., & Reio Jr, T. G. (2014). Employee engagement and well-being: A moderation model and implications for practice. *Journal of Leadership & Organizational Studies*, 21(1), 43-58.
- Siltaloppi, M., Kinnunen, U., & Feldt, T. (2009). Recovery experiences as moderators between psychosocial work characteristics and occupational well-being. *Work & Stress*, 23(4), 330-348.
- Slater, M., & Wilbur, S. (1997). A framework for immersive virtual environments (FIVE): Speculations on the role of presence in virtual environments. *Presence: Teleoperators & Virtual Environments*, 6(6), 603-616.
- Smith-Jackson, T. L., & Klein, K. W. (2009). Open-plan offices: Task performance and mental workload. *Journal of Environmental Psychology*, 29(2), 279-289.
- Sonnentag, S. (2001). Work, recovery activities, and individual well-being: A diary study. *Journal of Occupational Health Psychology*, 6(3), 196-210.
- Sonnentag, S. (2003). Recovery, work engagement, and proactive behavior: a new look at the interface between nonwork and work. *Journal of Applied Psychology*, 88(3), 518-528.

- Sonnentag, S. (2011). Research on work engagement is well and alive. *European Journal of Work and Organizational Psychology*, 20(1), 29-38.
- Sonnentag, S. (2017). A task-level perspective on work engagement: A new approach that helps to differentiate the concepts of engagement and burnout. *Burnout Research*, 5, 12-20.
- Sonnentag, S., & Fritz, C. (2007). The Recovery Experience Questionnaire: development and validation of a measure for assessing recuperation and unwinding from work. *Journal of Occupational Health Psychology*, 12(3), 204-221.
- Sonnentag, S., & Fritz, C. (2015). Recovery from job stress: The stressor-detachment model as an integrative framework. *Journal of Organizational Behavior*, 36(S1), 72-103.
- Sonnentag, S., & Geurts, S. A. (2009). *Methodological Issues in Recovery Research*. In *Current Perspectives on Job-stress Recovery* (pp. 1-36). Bingley, UK: Emerald Group Publishing Limited.
- Sonnentag, S., & Kühnel, J. (2016). Coming back to work in the morning: Psychological detachment and reattachment as predictors of work engagement. *Journal of Occupational Health Psychology*, 21(4), 379-390.
- Sonnentag, S., & Natter, E. (2004). Flight attendants' daily recovery from work: Is there no place like home?. *International Journal of Stress Management*, 11(4), 366-391.
- Sonnentag, S., Binnewies, C., & Mojza, E. J. (2008). "Did you have a nice evening?" A day-level study on recovery experiences, sleep, and affect. *Journal of Applied Psychology*, 93(3), 674-684.
- Sonnentag, S., Dormann, C., & Demerouti, E. (2010). Not all days are created equal: The

- concept of state work engagement. *Work Engagement: A Handbook of Essential Theory and Research*, 25-38.
- Sonnentag, S., Mojza, E. J., Demerouti, E., & Bakker, A. B. (2012). Reciprocal relations between recovery and work engagement: The moderating role of job stressors. *Journal of Applied Psychology*, 97(4), 842-853.
- Stone, D. L., & Stone-Romero, E. F. (1998). *A Multiple Stakeholder Model of Privacy in Organizations*. In *Managerial Ethics* (pp. 45-70). Milton, UK: Psychology Press.
- Sukamolson, S. (2007). Fundamentals of quantitative research. *Language Institute Chulalongkorn University*, 1, 2-3.
- Sundstrom, E., Burt, R. E., & Kamp, D. (1980). Privacy at work: Architectural correlates of job satisfaction and job performance. *Academy of Management Journal*, 23(1), 101-117.
- Sundstrom, E., Town, J. P., Brown, D. W., Forman, A., & Mcgee, C. (1982). Physical enclosure, type of job, and privacy in the office. *Environment and Behavior*, 14(5), 543-559.
- Tews, M. J., Michel, J. W., & Stafford, K. (2013). Does fun pay? The impact of workplace fun on employee turnover and performance. *Cornell Hospitality Quarterly*, 54(4), 370-382.
- Topp, C. W., Østergaard, S. D., Søndergaard, S., & Bech, P. (2015). The WHO-5 Well-Being Index: a systematic review of the literature. *Psychotherapy and Psychosomatics*, 84(3), 167-176.
- Trougakos, J. P., & Hideg, I. (2009). *Momentary Work Recovery: The Role of Within-day Work*



- Wreaks*. In S. Sonnentag, P. L. Perrewé, & D. C. Ganster (Eds.), *Current Perspectives on Job-stress Recovery: Research in Occupational Stress and Well-being* (Vol. 7, p. 37–84). Bingley, UK: JAI Press.
- Trougakos, J. P., Beal, D. J., Green, S. G., & Weiss, H. M. (2008). Making the break count: An episodic examination of recovery activities, emotional experiences, and positive affective displays. *Academy of Management Journal*, 51(1), 131-146.
- Trougakos, J. P., Hideg, I., Cheng, B. H., & Beal, D. J. (2014). Lunch breaks unpacked: The role of autonomy as a moderator of recovery during lunch. *Academy of Management Journal*, 57(2), 405-421.
- Trougakos, J. P., Jackson, C. L., & Beal, D. J. 2011. Service without a smile: Comparing the consequences of neutral and positive display rules. *Journal of Applied Psychology*, 96, 350-362.
- Tsaur, S. H., & Tang, W. H. (2013). The burden of esthetic labor on front-line employees in hospitality industry. *International Journal of Hospitality Management*, 35, 19-27.
- Tucker, P. (2003). The impact of rest breaks upon accident risk, fatigue and performance: a review. *Work & Stress*, 17(2), 123-137.
- Tucker, P., Dahlgren, A., Akerstedt, T., & Waterhouse, J. (2008). The impact of free-time activities on sleep, recovery and well-being. *Applied Ergonomics*, 39(5), 653-662.
- Tussyadiah, I. P., Wang, D., Jung, T. H., & tom Dieck, M. C. (2018). Virtual reality, presence, and attitude change: Empirical evidence from tourism. *Tourism Management*, 66, 140-154.
- Twenge, J. M. (2008). Generation me, the origins of birth cohort differences in personality

- traits, and cross-temporal meta-analysis. *Social and Personality Psychology Compass*, 2(3), 1440-1454.
- Twenge, J. M., Campbell, S. M., Hoffman, B. J., & Lance, C. E. (2010). Generational differences in work values: Leisure and extrinsic values increasing, social and intrinsic values decreasing. *Journal of Management*, 36(5), 1117-1142.
- U.S. Census Bureau (2015). *Millennials Outnumber Baby Boomers and Are Far More Diverse*, Census Bureau Reports. Retrieved from <https://www.census.gov/newsroom/press-releases/2015/cb15-113.html>.
- U.S. Department of Labor (2020). *Minimum Length of Meal Period Required under State Law for Adult Employees in Private Sector 1*, Wage and Hour Division. Retrieved from <https://www.dol.gov/agencies/whd/state/meal-breaks#Missouri>.
- Van Teijlingen, E., & Hundley, V. (2002). The importance of pilot studies. *Nursing Standard (through 2013)*, 16(40), 33-36.
- Van Veen, H. A., Distler, H. K., Braun, S. J., & Bülthoff, H. H. (1998). Navigating through a virtual city: Using virtual reality technology to study human action and perception. *Future Generation Computer Systems*, 14(3-4), 231-242.
- Vohs, K. D., Baumeister, R. F., & Ciarocco, N. J. (2005). Self-regulation and self-presentation: regulatory resource depletion impairs impression management and effortful self-presentation depletes regulatory resources. *Journal of Personality and Social Psychology*, 88(4), 632-657.
- Wakefield, K. L., & Blodgett, J. G. (1996). The effect of the servicescape on customers' behavioral intentions in leisure service settings. *Journal of Services Marketing*, 10(6), 45-61.

- Watson, D., & Tellegen, A. (1985). Toward a consensual structure of mood. *Psychological Bulletin*, 98, 219-235.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of Personality and Social Psychology*, 54(6), 1063.
- Weiss, H. M., & Cropanzano, R. (1996). *Affective Events Theory: A Theoretical Discussion of The structure, Causes and Consequences of Affective Experiences at Work*. In B. M. Staw & L. L. Cummings (Eds.), *Research in Organization Behavior* (Vol. 19, pp. 1-74). Greenwich, CT: JAI Press.
- Weiss, P. L., & Jessel, A. S. (1998). Virtual reality applications to work. *Work*, 11(3), 277-293.
- Wells, M. M. (2000). Office clutter or meaningful personal displays: The role of office personalization in employee and organizational well-being. *Journal of Environmental Psychology*, 20(3), 239-255.
- Westerman, J. W., & Yamamura, J. H. (2007). Generational preferences for work environment fit: Effects on employee outcomes. *Career Development International*, 12(2), 150-161.
- Westman, M., & Eden, D. (1997). Effects of a respite from work on burnout: vacation relief and fade-out. *Journal of Applied Psychology*, 82(4), 516-527.
- Westman, M., & Etzion, D. (2001). The impact of vacation and job stress on burnout and absenteeism. *Psychology & Health*, 16(5), 595-606.
- Wheeler, G., & Almeida, A. (2006). These Four Walls: The Real British Office. *Creating the Productive Workplace*, 357-377.

- William C. (2007). Research methods. *Journal of Business & Economic Research*, 5(3), 65–72.
- Wirth, W., Hartmann, T., Böcking, S., Vorderer, P., Klimmt, C., Schramm, H., ... & Biocca, F. (2007). A process model of the formation of spatial presence experiences. *Media Psychology*, 9(3), 493-525.
- Witkoski, A., & Dickson, V. V. (2010). Hospital staff nurses' work hours, meal periods, and rest breaks: A review from an occupational health nurse perspective. *Aaohn Journal*, 58(11), 489-497.
- Wright, K. B. (2005). Researching Internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services. *Journal of Computer-Mediated Communication*, 10(3), Retrieved December 16, 2008, from <http://jcmc.indiana.edu/vol10/issue3/wright.html>.
- Wright, T. A., & Cropanzano, R. (2000). Psychological well-being and job satisfaction as predictors of job performance. *Journal of Occupational Health Psychology*, 5(1), 84.
- Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2007). The role of personal resources in the job demands-resources model. *International Journal of Stress Management*, 14(2), 121-141.
- Zagreus, L., Huizenga, C., Arens, E., & Lehrer, D. (2004). Listening to the occupants: A Web-based indoor environmental quality survey. *Indoor Air, Supplement*, 14(8), 65-74.
- Zalesny, M. D., & Farace, R. V. (1987). Traditional versus open offices: A comparison of sociotechnical, social relations, and symbolic meaning perspectives. *Academy of Management Journal*, 30(2), 240-259.
- Zemke, D. M. V., & Pullman, M. (2008). Assessing the value of good design in hotels.

*Building Research & Information*, 36(6), 543-556.

Zhao, X. R., Qu, H., & Ghiselli, R. (2011). Examining the relationship of work–family conflict to job and life satisfaction: A case of hotel sales managers. *International Journal of Hospitality Management*, 30(1), 46-54.


Zhu, Z., Kuykendall, L., & Zhang, X. (2019). The impact of within-day work breaks on daily recovery processes: An event-based pre-/post-experience sampling study. *Journal of Occupational and Organizational Psychology*, 92(1), 191-211.

# **Appendix A - Institutional Review Board Approval Letter for Study**

## **1**

---

TO: Dr. Jichul Jang  
Hospitality Management  
105 Justin Hall

FROM: Rick Scheidt, Chair   
Committee on Research Involving Human Subjects

DATE: 02/10/2020

RE: Proposal #9852.2, entitled "Taking a break is not a guilty pleasure: Improving employee (Gen Y) well-being through work breaks using work breaks using virtual reality."

A MINOR MODIFICATION OF PREVIOUSLY APPROVED PROPOSAL #9852.1, ENTITLED, "It's better to take a good break rather to quit: the effect of break characteristics on employee performance, emotion, attitude, and well-being."

The Committee on Research Involving Human Subjects at Kansas State University has approved the proposal identified above as a minor modification of a previously approved proposal, and has determined that it is exempt from further review. This exemption applies only to the most recent proposal currently on file with the IRB. Any additional changes affecting human subjects must be approved by the IRB prior to implementation and may disqualify the proposal from exemption.

Unanticipated adverse events or problems involving risk to subjects or to others must be reported immediately to the IRB Chair, and / or the URCO.

It is important that your human subjects project is consistent with submissions to funding/contract entities. It is your responsibility to initiate notification procedures to any funding/contract entity of changes in your project that affects the use of human subjects.

## **Appendix B - Institutional Review Board Consent Form for Study 2**



**PROJECT TITLE:**

Taking a break is not a guilty pleasure: Improving employee (Gen Y) well-being through work breaks using virtual reality

**PROJECT APPROVAL DATE:**

08/29/2019

**PROJECT EXPIRATION DATE:**

08/29/2020

**LENGTH OF STUDY:**

1 month

**PRINCIPAL INVESTIGATOR:**

Dr. Jichul Jang

**CO-INVESTIGATOR(S):**

Misun Kim

**CONTACT DETAILS FOR PROBLEMS/QUESTIONS:**

jichul@ksu.edu

**IRB CHAIR CONTACT INFORMATION:**Dr. Rick Scheidt, [rscheidt@ksu.edu](mailto:rscheidt@ksu.edu), Dr. Jichul Jang, jichul@ksu.edu**PROJECT SPONSOR:**

N/A

**PURPOSE OF THE RESEARCH:**

The overall objective of the study was to provide theory-driven suggestions for employee breakroom design by identifying the effect of layout of employee break room. We assume that layout arrangement in employee break room would facilitate workplace relationship opportunity and alleviate emotional exhaustion, thus increasing job satisfaction.

**PROCEDURES OR METHODS TO BE USED:**

We will be utilized Virtual Reality technology to realize open-designed break room layout. After being shown VR video and explore the VR spaces, participants will be handed the following questions about the dependent variables through I-pad. The samples are to be Millennial who were born between 1982 and 2000.

**BIOLOGICAL SAMPLES COLLECTED (Describe procedure, storage, etc.):**

Whole genome sequencing will not be included as part of the researchWhole genome sequencing will not be included as part of the researchWhole genome sequencing will not be included as part of the research

Not Applicable.Not Applicable.Not Applicable.

**ALTERNATIVE PROCEDURES OR TREATMENTS, IF ANY, THAT MIGHT BE ADVANTAGEOUS TO SUBJECT:**

If participants do not want to use VR goggle or equipment, they have an option to take part in by watching the VR spaces through computer screens.

**RISKS OR DISCOMFORTS ANTICIPATED:**

Since the experiment utilizes Virtual Reality Technique, if participants are not familiar with VR or manipulation joy sticks, it has a possibility to experience eye strain, nausea, real-world injuries, dizziness, motion sickness and game transfer phenomena.

**BENEFITS ANTICIPATED:**

A 10 dollar worth of Radina's gift card will be compensated. In addition, the personal gratification of altruism will be anticipated. As aspirational benefits, our results hopefully provide insightful implications of how important employee workday breaks are to both academia and industry.

**EXTENT OF CONFIDENTIALITY:**

Only corresponding author, PIS and co-authors will have access to the data whose laptops has a reliable password protection and encryption. The data will be stored in researchers' lap top and shared drop box folders and the data will be completely terminated after the study will be published.

**The information or biospecimens that will be collected as part of this research will not be shared with any other investigators. The information or biospecimens that will be collected as part of this research will not be shared with any other investigators. . The information or biospecimens that will be collected as part of this research will not be shared with any other investigators**

**IS COMPENSATION OR MEDICAL TREATMENT AVAILABLE IF INJURY OCCURS?**

☐ Yes ☒ No

**PARENTAL APPROVAL FOR MINORS:**

**PARENT/GUARDIAN APPROVAL  
SIGNATURE:**

**DATE:**

**Terms of participation: I understand this project is research, and that my participation is voluntary. I also understand that if I decide to participate in this study, I may withdraw my consent at any time, and stop participating at any time without explanation, penalty, or loss of benefits, or academic standing to which I may otherwise be entitled.**

**I verify that my signature below indicates that I have read and understand this consent form, and willingly agree to participate in this study under the terms described, and that my signature acknowledges that I have received a signed and dated copy of this consent form.**

**(Remember that it is a requirement for the P.I. to maintain a signed and dated copy of the same consent form signed and kept by the participant).**

**PARTICIPANT NAME:**

**PARTICIPANT SIGNATURE:**

**DATE:**

**WITNESS TO SIGNATURE:  
(PROJECT STAFF)**

**DATE:**

## **Appendix C – Survey for Study 1**

The current study is aiming to examine the relationship employee breaks and employee well-being in hospitality employees. If the answer is “No” to any of the following questions, you might not be fully qualified to this study and the survey will be terminated.

**1) Are you working or have you worked for hospitality facilities (i.e., hotels or restaurants) in the United States of America?**

- ☐ Yes (1)
- ☐ No (2)

**2) Are you a non-managerial employee in your current workplace?**

- ☐ Yes (1)
- ☐ No (2)

**3) Were you born in from 1982 to 2000?**

- ☐ Yes (1)
- ☐ No (2)

**4) Please answer how you would rate your overall satisfaction you received with the current employee break room in your workplace.**

| Very Dissatisfied | Dissatisfied | Somewhat Dissatisfied | Neither dissatisfied nor satisfied | Somewhat Satisfied | Satisfied | Very Satisfied |
|-------------------|--------------|-----------------------|------------------------------------|--------------------|-----------|----------------|
| 1                 | 2            | 3                     | 4                                  | 5                  | 6         | 7              |

|    |  |
|----|--|
| 1. | How satisfied are you with the temperature in your employee break room?  |
| 2. | How satisfied are you with the air quality in your employee break room (i.e. stuffy/stale air, cleanliness, odors)?                          |
| 3. | How satisfied are you with the amount of light in your employee break room?  |
| 4. | How satisfied are you with the visual comfort of the lighting (e.g., glare, reflections, contrast)?  |
| 5. | How satisfied are you with the noise level in your employee break room?  |
| 6. | How satisfied are you with the sound privacy in your employee break room (ability to have conversations without your neighbors overhearing)? |
| 7. | How satisfied are you with the amount of space available for individual work and storage?  |

|     |   |
|-----|---|
| 8.  | How satisfied are you with the level of visual privacy?   |
| 9.  | How satisfied are you with ease of interaction with co-workers?   |
| 10. | How satisfied are you with the comfort of your office furnishings (chair, desk, computer, equipment, etc.)? |
| 11. | How satisfied are you with your ability to adjust your furniture to meet your needs?                        |
| 12. | How satisfied are you with the colours and textures of flooring, furniture and surface finishes?            |
| 13. | How satisfied are you with general cleanliness of the overall building?                                     |
| 14. | How satisfied are you with cleaning service provided for your employee break room?                          |
| 15. | How satisfied are you with general maintenance of the building?   |
| 16. | All things considered, how satisfied are you with your employee break room?                                 |

**5) Please answer how you would rate the level of your work engagement in your workplace.**  
**For each statement listed below, please answer according to how much you agree or disagree.**

|                   |          |                   |                            |                |       |                |
|-------------------|----------|-------------------|----------------------------|----------------|-------|----------------|
| Strongly Disagree | Disagree | Somewhat Disagree | Neither disagree nor agree | Somewhat Agree | Agree | Strongly Agree |
| 1                 | 2        | 3                 | 4                          | 5              | 6     | 7              |

|    |   |
|----|---|
| 1. | At my work, I feel bursting with energy                 |
| 2. | At my job, I feel strong and vigorous                   |
| 3. | When I get up in the morning, I feel like going to work |
| 4. | I am enthusiastic about my job                          |
| 5. | My job inspires me                                      |
| 6. | I am proud of the work that I do                        |
| 7. | I feel happy when I am working intensely                |

|    |                                      |
|----|--------------------------------------|
| 8. | I am immersed in my work             |
| 9. | I get carried away when I am working |

**6) Following statements are about your satisfaction of the work. For each statement listed below, please indicate how much you agree or disagree.**

|                   |          |                   |                            |                |       |                |
|-------------------|----------|-------------------|----------------------------|----------------|-------|----------------|
| Strongly Disagree | Disagree | Somewhat Disagree | Neither disagree nor agree | Somewhat Agree | Agree | Strongly Agree |
| 1                 | 2        | 3                 | 4                          | 5              | 6     | 7              |

|    |  |
|----|--|
| 1. | Everything considered, I am very satisfied with my present job |
| 2. | I would recommend a friend to apply a job here                 |

**7) Following statements are about your overall well-being. For each statement listed below, please indicate how much you agree or disagree.**

|                   |          |                   |                            |                |       |                |
|-------------------|----------|-------------------|----------------------------|----------------|-------|----------------|
| Strongly Disagree | Disagree | Somewhat Disagree | Neither disagree nor agree | Somewhat Agree | Agree | Strongly Agree |
| 1                 | 2        | 3                 | 4                          | 5              | 6     | 7              |

|    |  |
|----|--|
| 1. | I have felt cheerful and in good spirit                    |
| 2. | I have felt calm and relaxed                               |
| 3. | I have felt active and vigorous                            |
| 4. | I have woken up feeling fresh and rested                   |
| 5. | My daily life has been filled with things that interest me |

**8) What is your gender?**

- ☐ Male
- ☐ Female
- ☐ Other
- ☐ Not prefer to answer

**9) What is your ethnicity?**

- ☐ African-American (non-Hispanic)
- ☐ Asian/Pacific Islanders
- ☐ Caucasian (non-Hispanic)
- ☐ Latino or Hispanic
- ☐ Native American or Aleut
- ☐ Other (Please specify it)

**10) What type of facilities are you working at?**

- ☐ Hotels
- ☐ Restaurants
- ☐ Catering events company
- ☐ Bar
- ☐ Other

**11) What type of hotel are you employed in?**

- ☐ Economy hotel (e.g., Motel 6)
- ☐ Midscale hotel (e.g., Hilton garden)
- ☐ Upscale hotel (e.g., Marriot)
- ☐ Luxury hotel (e.g., Four season)
- ☐ Other

**12) What type of restaurant are you employed in?**

- ☐ Fast food
- ☐ Fast-casual dining
- ☐ Casual dining
- ☐ Fine dining
- ☐ Other \_\_\_\_\_

**13) What is your highest level of education?**

- ☐ High School
- ☐ 2-years' College
- ☐ 4 years' College
- ☐ Graduate School
- ☐ Other (Please specify it)

**14) What is your employment status?**

- ☐ Full time (+30 hours per week)
- ☐ Part time

**15) How many years have you been working in the hospitality industry in total?**

- ☐ less than 1 year
- ☐ 1-2 years
- ☐ 3-5 years
- ☐ 6-10 years
- ☐ More than 11 years



## **Appendix D – Survey for Study 2**

**1) What is your gender?**

- ☐ Male
- ☐ Female
- ☐ Other
- ☐ Not prefer to answer

**2) What is your ethnicity?**

- ☐ African-American (non-Hispanic)
- ☐ Asian/Pacific Islanders
- ☐ Caucasian (non-Hispanic)
- ☐ Latino or Hispanic
- ☐ Native American or Aleut
- ☐ Other (Please specify it)

**3) What type of facilities are you working at?**

- ☐ Hotels
- ☐ Restaurants
- ☐ Catering events company
- ☐ Bar
- ☐ Other

**4) What type of hotel are you employed in?**

- ☐ Economy hotel (e.g., Motel 6)
- ☐ Midscale hotel (e.g., Hilton garden)
- ☐ Upscale hotel (e.g., Marriot)
- ☐ Luxury hotel (e.g., Four season)
- ☐ Other

**5) What type of restaurant are you employed in?**

- ☐ Fast food
- ☐ Fast-casual dining
- ☐ Casual dining
- ☐ Fine dining
- ☐ Other \_\_\_\_\_

**6) What is your highest level of education?**

- o High School
- o 2-years' College
- o 4 years' College
- o Graduate School
- o Other (Please specify it)

**7) What is your employment status?**

- o Full time (+30 hours per week)
- o Part time

**8) How many years have you been working in the hospitality industry in total?**

- o less than 1 year
- o 1-2 years
- o 3-5 years
- o 6-10 years
- o More than 11 years

**9) Please imagine that you had taken a break at the employee break room where you just saw for 30 minutes. Please answer carefully based on hypothetical experience.**

**Following statements are about your affective status. Based on what you have just experienced in the virtual reality space, please indicate how much you agree or disagree.**

| Strongly Disagree | Disagree | Somewhat Disagree | Neither disagree nor agree | Somewhat Agree | Agree | Strongly Agree |
|-------------------|----------|-------------------|----------------------------|----------------|-------|----------------|
| 1                 | 2        | 3                 | 4                          | 5              | 6     | 7              |

|    |              |
|----|--------------|
| 1. | Interested   |
| 2. | Alert        |
| 3. | Attentive    |
| 4. | Excited      |
| 5. | Enthusiastic |
| 6. | Inspired     |

|     |            |
|-----|------------|
| 7.  | Proud      |
| 8.  | Determined |
| 9.  | Strong     |
| 10. | Active     |

**10) Please imagine that you had taken a break at the employee break room where you just saw for 30 minutes. Please answer carefully based on hypothetical experience.**

**Following statements are about your perception towards social interactions. Based on what you have just experienced in the virtual reality space, please indicate how much you agree or disagree.**

|                   |          |                   |                            |                |       |                |
|-------------------|----------|-------------------|----------------------------|----------------|-------|----------------|
| Strongly Disagree | Disagree | Somewhat Disagree | Neither disagree nor agree | Somewhat Agree | Agree | Strongly Agree |
| 1                 | 2        | 3                 | 4                          | 5              | 6     | 7              |

|    |  |
|----|--|
| 1. | I have the opportunity to get to know my coworkers                             |
| 2. | I am able to work with my coworkers to collectively solve problems             |
| 3. | In my organization, I have the chance to talk informally and visit with others |
| 4. | Communication among employees is encouraged by my organization                 |
| 5. | I have the opportunity to develop close friendships at my workplace            |
| 6. | Informal talk is tolerated by my organization as long as the work is completed |

## Appendix E- Pictures of Virtual Reality Video



Picture of the manipulated virtual reality model



Picture of the existing virtual reality model