COMPARATIVE STUDY OF RESTORATIVE ENVIRONMENT AND SOCIAL INTELLIGENCE AMONG UNIVERSITY EMPLOYEES OF LAHORE AND ISLAMABAD

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Islamabad
March, 2024

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DEPARTMENT OF PSYCHOLOGY

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A Research Thesis submitted to the
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in partial fulfillment of the requirements for the degree of
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CERTIFICATE OF APPROVAL

It is certified that the Research Thesis titled "Comparative Study of the Restorative Environment and Social Intelligence among University Employees of Lahore and Islamabad" carried out by Muqqadas Saba, Reg. No. BSP201002, under the supervision of Ms. Uzma Mushtaq, Capital University of Science & Technology, Islamabad, is fully adequate, in scope and in quality, as a Research Thesis for the degree of BS Psychology.

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To my lovely parents and my honorable teachers. Through the challenges and triumphs, your belief in me has been my guiding light. This thesis is dedicated to each of you for being my pillars of strength.

DECLARATION

It is declared that this is an original piece of my own work, except where otherwise acknowledged in text and references. This work has not been submitted in any form for another degree or diploma at any university or other institution for tertiary education and shall not be submitted by me in future for obtaining any degree from this or any other University or Institution.

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ABSTRACT

The work environment recovers productivity which brings notable financial benefits, and many researchers uncovered this link between social intelligence and productivity which is indirectly impacted by the environment. This study's aim was to compare a restorative environment and social intelligence in the workplace among university employees of Lahore and Islamabad. The study used a quantitative approach with a cross-sectional research design of a sample size of 300 university teachers using a convenient sampling technique. Two standardized instruments, the Perceived Restorativeness Scale and the Tromso Social Intelligence Scale, were used to measure the variables of interest. Statistical analysis was used to determine whether a significant relationship exists between exposure to a restorative environment and social intelligence. The findings showed a strong positive correlation between restorative environment and social intelligence among university teachers of Lahore and Islamabad. Also, the comparison between cities shown that university teachers of Islamabad with greener environment had high score at restorativeness and social intelligence while university teachers of Lahore a highly dense and populated city presented low score at restorativeness and social intelligence.

The findings of this study have implications for organizations seeking to create work environments that support employee well-being and performance. By understanding the relationship between restorative environments and social intelligence, organizations can promote positive relationships, effective collaboration, increased productivity, job satisfaction, and overall well-being among their employees. The study aligns with United Nations Sustainable Development Goals 8 and 11, which aim to promote sustainable economic growth, full employment, and inclusive, safe, resilient, and sustainable cities and human settlements. The research findings can

contribute to the existing literature on restorative environments and social intelligence, addressing research gaps and practical demands within the field.

Keywords: Restorative Environment, Social Intelligence, Workplace, Productivity, SDG’s and Employee Well-being

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CHAPTER 01

INTRODUCTION

According to the World Health Organization, mental health encompasses not merely the absence of mental illness but also the presence of positive psychological well-being (WHO, 2001). The changing environment and rising urbanization pose challenges to our dependence on natural environments. Such environments have both direct and indirect influences on the health and well-being of humans. When individuals find themselves in environments that do not fully align with their needs and activities, they may seek opportunities to replenish their psychological resources, which have been depleted due to a lack of compatibility with their surroundings (Kaplan, 1993). Research on restorative environments explores various factors that play a role in replenishing depleted resources or recovering from excessive demands. Additionally, it identifies factors that contribute to creating more supportive environments overall (Hartig et. al., 1991).

Urban green and blue areas, which include parks and water bodies, can serve as valuable resources for stress recovery and physical activity (Hartig et. al., 2011). Organizations have become increasingly focused on the impact of the environment on employee well-being and task performance, and allocating significant resources to raise awareness about the topic (Goetzel & Ozminkowski, 2008).

Research on restorative environments not only identifies factors that aid in replenishing resources or recovering from excessive demands but also highlights factors that promote more supportive environments (Bellini et. al., 2019).

Restorative Environment

A restorative environment is one that facilitates recovery from difficulties such as an inability to focus, heightened stress levels, and negative emotions caused by

fatigue. Such environments not only allow but actively encourage restoration which may include exposure to nature (Hartig et. al., 2011). Environmental psychology uses the term "restoration" to describe the process of replenishing resources and capabilities that have been drained due to the demands of daily life.

The concept of restorative environments has great potential for assessing the psychological effects of interacting with urban built settings. However, there is a lack of empirical research specifically focused on the restoration processes within urban environments (Staats et. al., 2016).

Some environments are more conducive to psychological restoration than others, particularly the natural environment within urban societies are valued for restorative qualities. The influence of the built environment on human health has been widely acknowledged. Variations in health outcomes within cities can be attributed, in part, to disparities in environmental conditions. One specific environmental aspect, known as greenness, has garnered increasing attention in relation to health. Previous studies have found a correlation between green environments and improved population health, as well as lower mortality rates. However, access to green spaces is often inequitably distributed among city residents (Orban, et. al., 2017).

According to research, interaction with nature, such as exposure to plants, benefits humans and can help recover. Studies on this topic in the workplace concentrate on green surroundings, which might be natural or built. Both forms of green surroundings have been shown to improve health and cognitions which in return improve social interaction, with actual office plants having a good influence on health according to field research. Furthermore, research has indicated that spending time in nature outdoors can have a good impact on health, and nature posters have been

proved to be beneficial in laboratory experiments. There is less evidence that office greenery has a negative impact on mental and physical health (Bano et al., 2023).

The concept of a restorative environment goes beyond the mere presence of natural elements. It encompasses the idea that certain environments have the power to facilitate recovery from mental and emotional fatigue. These environments actively promote restoration by providing opportunities for relaxation, reflection, and reconnection with oneself and others. Nature plays a vital role in this process, offering a sense of tranquility and rejuvenation that is often lacking in urban settings. Research has shown that a restorative environment can significantly enhance employee well-being, reduce stress, and improve cognitive functioning which is indirectly related to social intelligence (Kalevi et. al., 2015).

Numerous studies found that workers who were exposed to natural environments experienced greater psychological restoration and less stress. For example, a study found that office workers who had views of built elements (such as paved areas and nearby buildings) experienced higher levels of job-related stress (Shin, 2002). Additionally, some recent research suggests that being in nature physically may be even more beneficial than merely viewing it.

The presence of natural elements may enhance employees' psychological well-being, but there are few studies that specifically examine how aspects of employees' daily environments may affect outcomes like affect, depression, and stress (Berman et. al., 2012).

Moreover, prior research has identified a methodological bias in the selection of settings when examining the restorative qualities of natural and urban environments. These studies have typically compared positive natural areas, such as recreational forests or parks those are relaxing and visually appealing, with negative urban

surroundings characterized by noise, busyness, and unattractiveness (Scopelliti et al., 2018; Staats et al., 2016; Weber & Trojan, 2018).

According to a recent study, only 56% of Finnish and Hungarian students from a sample of approximately 800 participants chose a natural setting as their preferred place for psychological recovery (Korpela et al. 2020).

Social Intelligence

Social intelligence has gained significant attention as a pivotal factor in shaping an individual's success across multiple domains, including work environments. (Goleman, 2006). There is also a considerable body of research on the impact of physical working environments on employee performance, the effect of outdoor environments on employee social intelligence remains relatively understudied and neglected.

Social intelligence is the capability of individuals to comprehend and proficiently manage different social situations. Social intelligence is a critical factor in employee success, as it enables individuals to navigate social situations effectively (Özdemir & Adıgüzel, 2021). Individuals with high social intelligence are more likely to be successful in their careers and enjoy positive relationships. Despite the potential benefits of both a restorative environment and social intelligence, there is limited research on these two variables.

Thorndike described social intelligence as "the ability to act wisely in human relations." It encompasses interpersonal skills including networking and interaction. Scholars often regard emotional intelligence as a trait that has the ability to contribute to more positive attitudes, behaviors, and outcomes (Adetula, 2016). Weis et al. (2006) and Weis & Sub (2005) suggested a performance model of social intelligence that included the structure of cognitive abilities.

In simple words, Social intelligence refers to the ability to develop positive relationships with others in social situations. Social intelligence is essential for our everyday social interactions.

In situations where work demands are high, characterized by persistent physical and psychological efforts, individuals often seek ways to reimburse and utilize available resources for support. These resources can include various of the job, such as physical, psychological, social, or organizational factors that contribute to functional work performance. While organizational researchers have traditionally emphasized the significance of the social environment in this context, it is also crucial to recognize the potential role of the physical work environment as a resource for employees. Consequently, it is important to explore and understand which specific physical and social features of the workplace play a significant role in replenishing workers' resources and fostering autonomous behaviors, ultimately leading to improved organizational performance (Bellini, et. al., 2019).

In a study, the characteristics of social intelligence are outlined as follows: the ability to understand others, effectively express personal feelings and ideas, communicate personal needs, provide and receive feedback from others, motivate and inspire others, offer innovative solutions in complex situations, prioritize teamwork over individual efforts, and demonstrate good teamwork skills.

In addition to the restorative environment, social intelligence has emerged as a crucial factor in determining an individual's success in various aspects of life, including work settings. Social intelligence refers to the ability to understand and effectively navigate social situations, communicate with others, and build positive relationships. Individuals with high social intelligence are more likely to thrive in their careers,

collaborate effectively with colleagues, and adapt to changing social dynamics (Kihlstrom & Cantor, 2000).

Individuals with high levels of social intelligence are adept at problem-solving in daily life and effectively managing challenging situations by employing appropriate strategies (Silberman's, 2000). Furthermore, research has highlighted the importance of social intelligence and various forms of communication for achieving success in various aspects of life, including occupation and education (Garmaroudi & Vahdaninia, 2006).

Over the years, research has shown that there are performance gaps between socially intelligent and socially unintelligent leaders, and there is convincing evidence that cognitive ability is strong predictor of work success in nearly every job studied (Adetula, 2016).

A study proposes that the foundation of social intelligence management lies in effectively handling emotions within the social realm. This perspective highlights the beneficial role of emotions in both overall intelligence and logical reasoning (Odimegwu, A. I., 2023).

While the influence of restorative environments and social intelligence on employee well-being and performance has been studied in various contexts, there haven't been enough studies that compare these things in different places, especially in less developed countries (Kaplan, 1993; Goetzel & Ozminkowski, 2008; Hartig et al., 2011; Kalevi et al., 2015).

The present study aims to address this gap by conducting a comparative investigation of restorative environment and social intelligence among university employees in two major cities of Pakistan: Lahore and Islamabad. Lahore and Islamabad, being major educational hubs in Pakistan, house numerous universities with diverse working environments. Lahore, known for its bustling urban setting and

historical landmarks, contrasts with Islamabad, the purpose-built capital city renowned for its serene surroundings and greener spaces. These geographical distinctions offer a unique opportunity to investigate the potential influence of urban versus natural environments on employees' restorative experiences and social intelligence.

While the majority of research has focused on natural environments, recent studies have expanded the scope to include other types of restorative settings. Indoor environments with biophilic design elements, such as indoor plants, natural materials, and daylighting, have gained attention due to their potential to simulate the positive effects of nature on well-being and cognitive functioning (Ryan et. al., 2014). Similarly, virtual environments that replicate nature have also been explored as potential restorative settings (Riva, 2018). These advancements provide a broader perspective on the relationship between restorative environments and social intelligence, encompassing a wider range of contexts and interventions.

The impact of environmental design on people's well-being and productivity has been extensively studied in some settings, such as offices, hospitals, and elementary schools; however, salutogenic and biophilic design in urban educational environments is understudied and warrants further investigation (Peters & D'Penna2020).

In recent years, there has been a growing recognition of the importance of incorporating elements of nature and restorative environments into the design of urban spaces. This shift in perspective is driven by the understanding that the built environment has a profound impact on human well-being and mental health.

Literature Review

The concepts of a restorative environment and social intelligence have been widely studied in various fields. A study found that individuals who spent time in a natural setting performed better on tasks requiring social intelligence than those who

spent time in an urban environment. The researchers suggested that exposure to natural environments enhances individuals' cognitive abilities, which in turn improves their social intelligence (Berman et. al., 2008). Research conducted in various contexts has consistently shown the positive impact of restorative environments on individuals' cognitive functioning and emotional well-being.

A seminal study in a hospital setting demonstrated that patients with views of nature from their rooms experienced faster recovery required less pain medication, and had fewer complications compared to those without such views (Ulrich et al. 1991). Similarly, studies conducted in office environments have shown that employees working in spaces with natural elements reported lower levels of stress, greater job satisfaction, and higher productivity (Korpela et al., 2002; Berman et al., 2008).

In the year 2021 a study exploring the restorative benefits of daily contact with nature and psychological well-being with a sample of 153 employees using experimental design found that more exposure to the natural environment was significantly associated with decreased stress levels (Perrins S. P., 2021).

Another study found that exposure to a natural environment led to improved mood and social behavior. The researchers suggested that natural environments provide a sense of peace and tranquility, which allows individuals to be more open and receptive to social interactions (Evans et. al., 1991).

Moreover, the aesthetic qualities of restorative environments have been identified as crucial factors influencing social intelligence. Visually pleasing and harmonious design elements, such as color schemes, architectural features, and natural elements, have been found to positively impact individuals' moods and attention (Nasar, 2008; Barton et, al., 2010). These aesthetic qualities may facilitate social engagement and understanding by creating a positive and stimulating environment (Herzog, 2009).

For instance, a study revealed that individuals exposed to aesthetically pleasing environments reported higher levels of empathy and interpersonal sensitivity (Joye & Van den Berg, 2011).

Carolyn and Bernadine conducted a study with a sample of 72 undergraduate students using experimental design found that exposure to natural environments led to improved self-esteem, which in turn improved social behavior. The researchers suggested that individuals who have higher self-esteem are more likely to engage in positive social interactions (Carolyn & Bernadine, 1995).

Studies investigating the relationship between the physical environment and social intelligence have indicated that the design of the environment can impact individuals' social behaviors and interactions. For example, a study with a sample of 630 passers-by using the lost-letter technique and natural observation found that individuals in pleasant physical environments (e.g., with comfortable seating, and attractive decorations) were more likely to engage in prosocial behaviors, such as helping others (Guéguen, 2004).

A review discovered a vast number of research and strong data supporting the benefits of visual exposure to nature in university context. According to studies, there are numerous ways to adopt visual biophilic practices, including landscape and views of greenery through windows, posters of nature, photographs, murals, interior green plants, and nature walks (Peters & D’Penna2020).

In previous literature a study with a sample of 91 participants from a residential society has shown that the presence of natural elements in the environment can enhance individuals' positive affect and social cohesion, leading to improved social interactions and cooperation (Kuo & Sullivan, 2001).

A study investigated the relationship between the presence of green spaces on campus and employees' job satisfaction and social interactions. The results revealed that employees who had access to green spaces reported higher levels of job satisfaction and engagement in social activities with their colleagues, suggesting a positive relationship between restorative environments and social intelligence (Hidayati et al., 2019).

Bellini, et. al conducted a study, exploring the influence of working environments' restorative quality on organizational citizenship behaviors conducted to examine the association between perceived restorativeness and organizational citizenship behaviors with sample of 151 employees with correlational study design, yielded crucial insights into the importance of perceiving the potential for environmental restoration as a facilitator for fostering helpfulness, loyalty and other organizational citizenship behaviors among employees in the workplace. By recognizing and acknowledging the restorative qualities of their work environment, employees were found to exhibit heightened engagement in behaviors that go beyond their formal job requirements, such as assisting colleagues, displaying loyalty towards the organization, and actively voicing their opinions and suggestions (Bellini, et. al., 2019).

Similarly, in past literature a study focused on investigating the intricate relationship between social intelligence and organizational citizenship behavior within the context of government parastatals with a total sample size of 100 participants using a correlational study design found that there is a significant relationship between measures of organizational citizenship behavior and social intelligence (Joseph, et. al., 2021). When considering the collective findings of these two studies, they indirectly depict the relationship between restorative environment and social intelligence. The

first study emphasized the role of perceiving the potential for environmental restoration in fostering organizational citizenship behaviors, while the second study highlighted the positive association between social intelligence and measures of organizational citizenship behavior.

The majority of researches on restoration has examined the healing capacity of natural vs urban built environments, demonstrating the beneficial effects of contact with natural environment. These principles have also had an impact on policy and practice, with international institutions and countries taking steps to meet the demand for healthy environments by naturalising cities through green infrastructure and nature-based solutions (Bornioli & Subiza-Pérez, 2022).

Berto conducted an empirical study in 2007 titled Assessing the Restorative Value of the Environment: A study comparing older adults to young people and adolescents, with a sample size of 50 participants (35 females and 15 males), found that young adults and adolescents perceive natural environments as more restorative than built ones. The purpose of this study was to see if natural environments that were more restorative than artificial ones for adolescents and young adults were similarly beneficial to older individuals.

Kaplan and Kaplan (1989) found age-related changes in environmental preferences, with younger people favoring stimulating environments and elderly people preferring quiet settings. Hartig and Staats (2006) support these findings by demonstrating how natural surroundings improve well-being across age groups.

In this meta-analysis, the authors examined the effect of contact with natural environments on individuals' positive and negative affect. The results demonstrated a significant positive relationship between exposure to nature and positive affect,

suggesting that restorative environments contribute to emotional well-being, which in turn may facilitate social interactions and social intelligence (McMahan et. al., 2015).

Moreover, a study with a sample of 268 explored the role of restorative environments in fostering social interactions and collaboration among university faculty. The findings indicated that faculty members who had access to communal areas with natural elements, such as gardens or outdoor seating, reported higher levels of collaboration and social cohesion (Kim et al., 2017).

Zelenski and colleagues conducted a study explored the association between exposure to nature and cooperative behavior, which is closely related to social intelligence. The findings revealed that individuals who had greater exposure to natural environments exhibited higher levels of cooperative and environmentally sustainable behavior, indicating a positive relationship between restorative environments, pro-social attitudes, and social intelligence (Zelenski et. al., 2015).

A systematic review examined the mental health benefits of long-term exposure to residential green and blue spaces, focusing on the potential impact on social interactions that is related to social intelligence. The review found consistent evidence that individuals residing in areas with greater access to natural environments experienced improved mental health, which may positively influence social interactions and interpersonal relationships (Weber & Trojan2018).

A study conducted by Hartig and colleagues in year 2007 aim to find the restoration differences among gender based on home and near-home area opportunities for restoration, Women experienced a more cognitive, introspective form of restoration to a lesser extent than men.

Previous research has examined natural environments that appear to have a positive impact on individuals' cognitive abilities, mood, and self-esteem, which in turn

improve their social behavior, but little research has been conducted on these two variables.

Despite the growing body of research, several research gaps and practical demands exist within the field. Longitudinal studies are needed to establish a causal relationship between exposure to restorative environments and the development of social intelligence over time. Furthermore, practical demands, such as designing restorative environments in urban settings or virtual platforms for restorative workplaces, require in-depth exploration to develop effective interventions and design guidelines. There are various studies conducted on restorative environment with other variables such as stress, cognitive process etc. but limited studies on relationship of restorative environment with social intelligence.

Theoretical Framework

This study is guided by the Attention Restoration Theory (ART) and Social Information Processing Theory (SIPT).

Attention Restoration Theory suggests that natural environment exposure can have a restorative effect on cognitive function, attentional capacity, and stress reduction. It proposes that natural environments offer a break from the overstimulation of urban and indoor environments and lead to cognitive restoration and improved functioning (Kaplan & Kaplan, 1989).

According to ART, the hustle and bustle of urban life, characterized by crowded spaces, incessant noise, and the constant demands of technology and social interactions, can lead to mental fatigue and a significant reduction in the ability to concentrate and process information. This mental fatigue is often evidenced by symptoms such as irritability, decreased effectiveness in decision-making, and a diminished ability to focus.

In contrast, natural environments are believed to possess inherently restorative properties. These settings provide a sensory experience vastly different from urban environments. Natural landscapes, with their softly fascinating stimuli, such as the rustling of leaves, the flow of water, and the gentle movements of wildlife, engage the mind effortlessly, allowing for involuntary attention. This kind of engagement, termed 'soft fascination' by the Kaplan, provides a respite for the overworked cognitive mechanisms responsible for directed attention and executive functions.

Social Information Processing Theory suggests that social information is processed similarly to cognitive information through a series of stages: encoding, interpretation, response generation, and response evaluation. Accurate processing of social information is critical to social competence and interpersonal relationships (Silvera et. al., 2001).

Encoding: The first stage, encoding, involves the initial perception and gathering of social cues. This includes observing verbal and non-verbal signals such as tone of voice, facial expressions, body language, and the contextual elements of the social setting. The ability to accurately encode this information is critical, as it forms the foundation upon which further processing is built.

Interpretation: Following encoding, comes interpretation. In this stage, the individual ascribes meaning to the gathered social cues. This process is influenced by various factors, including past experiences, cultural norms, individual expectations, and pre-existing beliefs. Interpretation is a complex cognitive task that determines how one perceives and understands the social environment and the intentions of others.

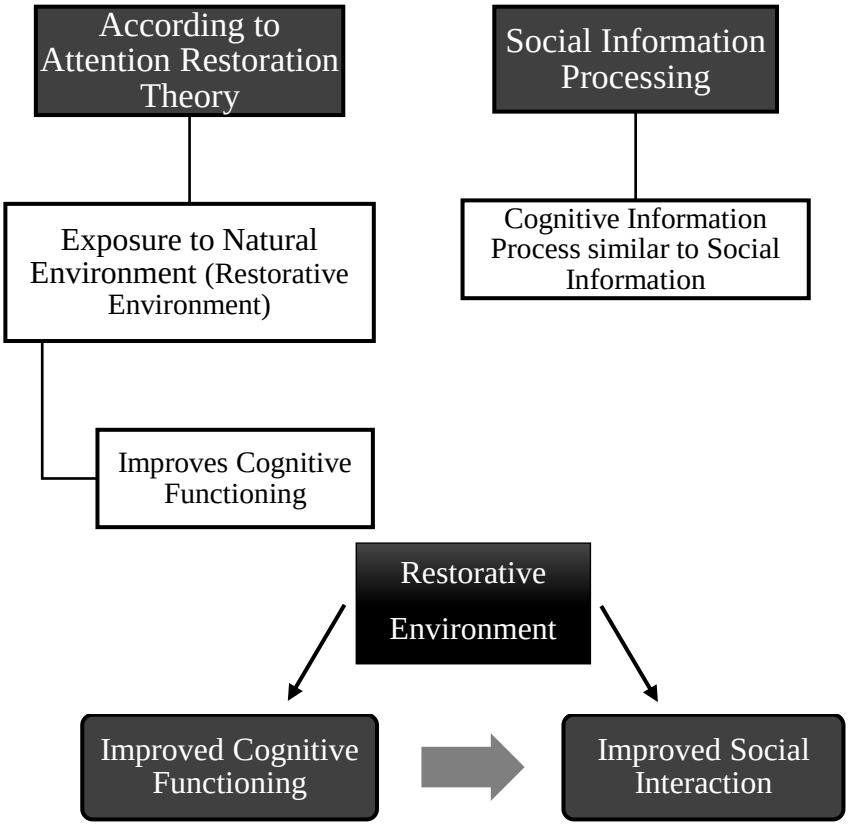
Response Generation: The third stage is response generation. Here, based on the interpretation of social cues, an individual considers possible responses. This stage involves creative and critical thinking, as one needs to generate a range of potential

actions or verbal responses those are appropriate to the social context and the interpreted information.

Response Evaluation: Finally, in the response evaluation stage, the individual assesses the potential effectiveness and appropriateness of the generated responses. This evaluation is crucial for deciding which response to enact. It involves considering the social norms, the potential outcomes of each response, and the goals of the interaction.

Accurate processing at each of these stages is essential for social competence, the ability to behave in a socially acceptable and effective manner. Errors or deficiencies in any stage can lead to misunderstandings, inappropriate responses, and ultimately, challenges in forming and maintaining healthy interpersonal relationships. For instance, a misinterpretation of a social cue due to poor encoding can lead to an inappropriate response, which might be misaligned with the actual context of the interaction.

Furthermore, the theory suggests that these skills and abilities can be developed and enhanced over time. This aspect is particularly important in the context of social learning and development. For example, children and adolescents learn to navigate increasingly complex social environments as they grow, improving their competence through experiences and feedback.



Building upon the foundational concepts outlined in Attention Restoration Theory (ART) and Social Information Processing Theory, there is a trace interplay between the restorative effects of natural environments and the processing of social information.

Restorative environments may indirectly impact social intelligence through their effect on mood and stress levels. Exposure to a restorative environment can enhance social intelligence among employees by improving their ability to process social information accurately and effectively.

Rationale of Study

The study aims to investigate the relationship between restorative environments and social intelligence in organizational settings, which has not been extensively researched. Employees with higher social intelligence are better equipped to build and maintain positive relationships with colleagues, clients, and customers, which can lead

to more effective collaboration and communication in the workplace. This, in turn, can lead to increased productivity, job satisfaction, and overall well-being among employees. By investigating the relationship between restorative environments and social intelligence, this study provide valuable insights into how organizations can create work environments that support employee well-being and performance. Higher social intelligence in employees can lead to positive relationships, effective collaboration, increased productivity, job satisfaction, and well-being (Ismail et. al., 2020).

The study also aligns with United Nations Sustainable Development Goals 8 and 11; Goal 8, which aims to promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all, and Goal 11, which aims to make cities and human settlements inclusive, safe, resilient, and sustainable. (Della & Avrich, 2020).

Studies on this topic in the workplace concentrate on green surroundings, which might be natural or built. Both forms of green surroundings have been shown to improve health and cognitions which in return improve social interaction (Bano et al., 2023). By enhancing productivity, well-being, and employee engagement, green workspaces contribute to economic prosperity and social cohesion, addressing Goal 8's objectives. Moreover, they create sustainable urban environments, mitigate urban stressors, and encourage social connectivity, supporting Goal 11's aims of inclusive, safe, and resilient cities.

Research Question

What is the relationship between restorative environment and social intelligence among Lahore and Islamabad university teachers?

Study Objectives

The objectives of this study were:

1. To study the relationship between restorative environments and social intelligence among university employees in Lahore and Islamabad.
2. To compare restorativeness and social intelligence among Lahore and Islamabad university teachers
3. To find out the impact of demographic variables (age, gender, education and years of experience)

Hypotheses

The hypotheses for this study were,

H0: The restorative environment is not associated with social intelligence among university teachers of Lahore and Islamabad

H1: There is a positive relationship between a restorative environment and social intelligence among university teachers.

H2: There is a significant difference between Lahore and Islamabad university teachers, with Lahore employees to exhibit lower levels of Social Intelligence than in Islamabad.

H3: There is a significant impact of demographic variables (age, gender, education and years of experience) on the restorative environment and social intelligence.

CHAPTER 02

METHODOLOGY

Research Design

This study used a comparative cross-sectional research design and a quantitative research approach in which data was collected at a single point in time.

The purpose of a comparative cross-sectional research design is to investigate the relationship between the variables those are restorative environment and social intelligence among two different groups i.e. Lahore and Islamabad.

Population and sample

The population of this study was university employees and the sample was university teachers in Islamabad and Lahore using a convenient sampling technique. The sample size was 300 university teachers; 150 from each city.

Inclusion Criteria

- Full-time employees
- Have worked in their current position for at least six months.

Exclusion Criteria

- Only educational sector employees
- Must not be Visiting faculty members

Sampling Technique

The type of non-probability sampling, Convenience sampling technique was used, in which universities were chosen that were easily accessible and convenient in terms of location, resources, and cooperation from participants.

Measures/ Instruments

The study used two standardized instruments to collect data.

Perceived Restorativeness Scale

Perceived Restorativeness Scale, measures the extent to which the physical environment promotes restoration. The PRS-11 revised version developed by Margherita Pasini and colleagues in 2014 which comprises 11 items and is rated on a 7-point Likert scale. The scale is based on 4 constructs those are, fascination, being away, coherence and scope. “Fascination” a type of attention assumed to be effortless and without capacity limitations; “Being way” from demands on directed attention; “coherence” and “scope” perceived in an environment. To score, each item response is summed to get a total score. The possible range of score is 11-77, higher score indicates greater Perceived Restorativeness. Few items of scales have reverse scoring i.e. item number 3 and 7. The scale has been demonstrated good reliability with Cronbach's alpha 0.77 - 0.94 and validity (Pasini et. al., 2014).

Tromso Social Intelligence Scale

Tromso Social Intelligence Scale (English version), assesses social intelligence through three distinct subscales; Social Information Processing, Social Skills, and, Social Awareness. Social information processing subscale measures ability to understand verbal or non-verbal messages regarding relationships, empathy, and reading hidden messages as well as explicit messages posts, social skills measures basic communication skills such as active listening, assertiveness, establishing, maintaining, and breaking a relationship and social awareness measures the ability to engage in active behavior in accordance with the situation, place and time. The scale comprises 21 items, with 7 items in each subscale, rated on a 5-point Likert scale. The score range is 21-105, Higher scores on the scale indicate a high level of social intelligence. Social

information process subscale items: 1, 3, 6, 9, 14, 15, 17, and 19, social skills subscale items: 4, 7, 10, 12, 18, and 20 and social awareness subscale items: 2, 5, 8, 11, 13, 16, and 21. Few items of scales have reverse scoring those are item number 2, 4, 5, 8, 11, 12, 13, 15, 16, and 21. The scale has demonstrated good reliability Cronbach's alpha SIP = 0.80, SS = 0.60 and SA = 0.75 (Silvera et. al., 2001).

Procedures

The research process commenced by obtaining the necessary permissions from Capital University of Science and Technology, Islamabad (CUST) in the form of support letter. After which the permission was taken from respective universities authority to ensure ethical data collection practices. This step was undertaken to establish a solid foundation for the study and to adhere to the guidelines set by the universities from which data was collected. By seeking permission, it is aimed to demonstrate commitment to conducting a responsible and reliable data collection process.

To select universities for data collection, a convenience sampling technique was adopted. This method allowed to choose universities that were easily accessible and convenient in terms of location, resources, and cooperation from participants. By using this strategy, it is aimed to streamline the data collection process and optimize the feasibility of the study.

Prior to the data collection, informed consent was obtained from participants. Participants were presented with comprehensive information about the study and the confidentiality measures that would be implemented. This ensured that individuals were fully aware of their rights as participants and could make an informed decision about their involvement. The participants were reassured that their data would be

treated with the utmost confidentially and would not be disclosed to any unauthorized individuals or entities.

After that, questionnaires were administered to collect the necessary data. These questionnaires included demographic sheet for collecting data for demographics related to study objectives and pre-designed scales that were deemed suitable for the research objectives. The scales were chosen were free to use permitted by authors of scales and to capture the relevant variables and dimensions of the study in a comprehensive and reliable manner.

The data collection process commenced in the city of Lahore, where a substantial number of responses were gathered. Subsequently, the data was collected from Islamabad, broadening the scope of the study and enabling comparisons between different geographical areas.

Once a definite number of responses i.e., 300 were obtained from both cities, the collected data underwent a rigorous analysis using the Statistical Package for Social Sciences (SPSS-26). Both descriptive statistics and inferential statistics were employed to summarize the data effectively. Measures such as means, standard deviations, frequencies, skewness and kurtosis analysed in descriptive statistics. Normality tests to check the normality of data distribution and psychometric properties including reliability of scales used were checked. Spearmen correlation analysis was done to check correlation between both variables. Mann Whitney U test was applied to compare the variables among two groups those are Islamabad and Lahore. Mann Whitney and Kruskal Wallis tests were used to gain a comprehensive understanding of the demographic variables under investigation.

Ethical Considerations

This study was adhering to ethical principles such as informed consent, confidentiality, and voluntary participation. Participants were provided with an informed consent form outlining the aim and purpose of data collection and the study, procedures involved, potential risks, and benefits. The privacy of every participant's personal data was maintained. Participants' identities would be kept private and anonymous, it was assured. Only the researcher conducting this study and their supervisor had access to their data. If they wanted to know the outcome of the study, the participants may also option to have the access to the results.

By not gathering any information that could be used to identify them, such as names, phone numbers, home addresses, or photos, their anonymity was ensured. Participants were informed that they would not face any negative consequences for their decision to withdraw from the study, and they were free to do so at any time. Permission from department of psychology, Capital University of Science and Technology was taken for data collection and to conduct the research.

CHAPTER 03

RESULTS

The purpose of this study was to compare the relationship between the restorative environment and social intelligence among Lahore and Islamabad university teachers. The data of university teachers (N=300) was collected from universities in Lahore and Islamabad and analysed using descriptive statistics such as mean, median, mode, and frequency statistics for demographic variables, as well as the reliability and Spearman correlation of both variables (restorative environment and social intelligence), and Mann-Whitney U tests to see if there were any differences between the two groups of university teachers living in Lahore and Islamabad.

Descriptive Statistics

Table 1

Demographic characteristics of the participants

Demographic Characteristics	Categories	Lahore		Islamabad	
		f	%	*f*	%
Age	26-35	106	72.7	96	64.0
	36-45	41	27.3	53	35.3
	46-60 above	-	0	1	.7
Gender	Male	74	49.3	75	50
	Female	76	50.7	75	50
Education level	Masters	131	87.3	127	84.7
	Ph.D.	19	12.7	23	15.3
Years of	1-5 years	128	85.3	111	74.0
Experience	6-10 above years	22	14.7	39	26

Note: N=300 (n =150 participants in each group), f= Frequency, % = Percentage

In the table 1, the demographic characteristics of the sample are presented. The sample consisted of N = 300 participants, with distribution of gender, comprising 151 females (50.3%) and 149 males (49.6%) in total. Regarding residential city both groups those are Lahore and Islamabad comprises of 50% (n = 150) of participants each. The education level distribution of Lahore participants revealed that majority of the participants, 87.3 (n=131) participants were holding Masters and 12.7 % (n=19) participants were holding PH.D. degrees, distribution of Islamabad participants revealed that 84.7% (n=127) participants were Master's degree holders whereas 15.3% (n=23) participants were P.HD. Degree holders

The age distribution ranged from 26-60 and above years old. From Lahore, the majority of participants, 72.7 % (n=106) lies between range 26 to 35 whereas 27.3% (n=41) participants were in the range of 36-45. In Islamabad group, 64.5 % (n=96) participants lies in age range of 26-35 while 35.3% (n=53) ranged in 36-45 and the in the highest age range 46 to 60 and above only 0.7 % (n=1) participant lies.

In context of experience, 85.3 % (n=128) have experience range between 1 to 5 years while 14.7 % (n=22) reported 6 to 10 and above years of experience in Lahore whereas in Islamabad 74% (n=111) participants reported experience range from 1 to 5 years' while 26 % (n=36) ranges in 6 to 10 and above years of experience.

Overall, the sample consisted of almost an equal number of male and female participant's ratio, with a relatively balanced distribution across age groups, education and years of experience.

Inferential Statistics

Table 2.1

Normality test of Perceived Restorativeness Scale (PRS-11) and Tromso Social Intelligence Scale (TSIS)

Scales	M	Median	Mode	SD	Skewness	Kurtosis	P value
PRS-11	52.97	53.13	60	9.76	-.131	-.901	0.00
TSIS	75.41	78	84	13.54	-.113	-.1.3	0.00

Note: PRS-11= Perceived Restorativeness Scale 11, TSIS= Tromso Social Intelligence Scale, M= Mean, SD= Standard Deviation, P= Significance value

The Table 2 reported the mean (M), median, mode, standard deviation (SD), skewness, and kurtosis values for each scale. It also shows the level or value of significance showing non-normal distribution for both scales that is non-significant (p<.05) for both variables (PRS and TSIS) while also taking the values of skewness and kurtosis and the shape of the histogram into consideration.

The Perceived Restorativeness Scale (PRS-11) has mean value of 52.97, median of 53.13, and a mode of 60. The standard deviation is 9.76 that is indicating a relatively high variability. The skewness value of -.131 which indicates slightly left-skewed distribution, while the kurtosis value of -.901 which suggests a platykurtic distribution.

For the Tromso Social Intelligence scale TSIS scale, the mean value is 75.41, the median is 78, and the mode is 84. The standard deviation is 13.54, that is indicating a high level of variability similar to the TSIS scale. The skewness value is -0.113, suggests a slightly right-skewed distribution, while the kurtosis value of -1.3 indicating a platykurtic distribution.

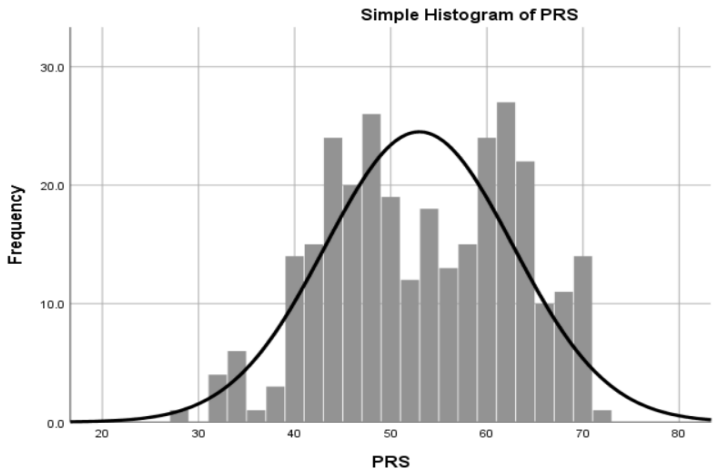


Figure 1 Normality Test: Histogram for PRS

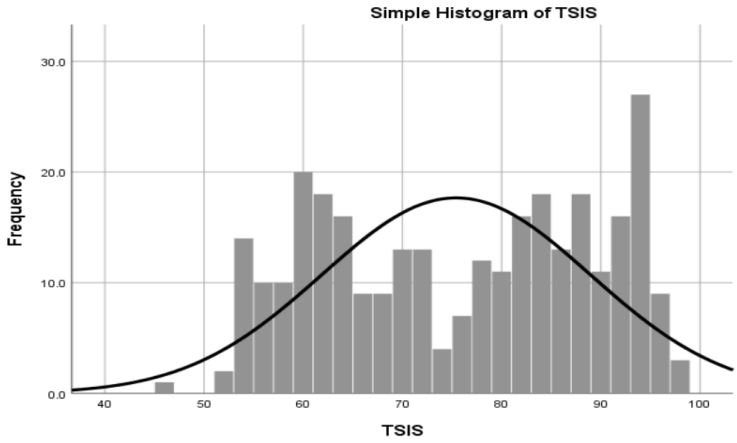


Figure 2 Normality Test: Histogram for TSIS

Table 2.2

Psychometric Properties for PRS and TSIS

Variables	Items	M	SD	Range	Cronbach's alpha	Skewness	Kurtosis
PRS	11	52.97	9.76	28-71	.861	-.131	-.901
TSIS	21	75.41	13.54	46-98	.91	-.113	-.1.3

Note: PRS= Perceived Restorativeness Scale, TSIS= Tromso Social Intelligence Scale, M= Mean, SD= Standard Deviation.

The Table 2.2 displays key statistics for the PRS and TSIS variables, including means (M), standard deviations (SD), ranges, and Cronbach's α coefficients. The PRS

scale has a mean of 52.97, a standard deviation spread of 9.76, and values ranging from 28 to 71. The high Cronbach's α coefficient of .861 indicates strong internal consistency reliability. Similarly, the TSIS scale has a mean of 75.41, a standard deviation of 13.54, and a range extending from 46 to 98. The substantial Cronbach's α coefficient of .91 suggests robust internal consistency reliability.

Table 3.1

Relationship between Perceived Restorativeness Scale (PRS) and Tromso Social Intelligence Scale (TSIS) Correlations among University Teachers

Variables	*M*	*SD*	1	2
1. PRS	52.97	9.76	-	.860**
2. TSIS	75.41	13.54	.860**	-

Note: PRS= Perceived Restorativeness Scale, TSIS= Tromso Social Intelligence Scale, M= Mean, SD= Standard Deviation (**p< .05, **p< .01)*

In the table 3.1 it is shown that Spearman's rho correlation analysis conducted to examine the relationship between PRS and TSIS among 300 participants, a strong positive correlation was observed. The correlation coefficient between PRS and TSIS was found to be .860, which was statistically significant at the 0.01 level (1-tailed), with a significance (p) value less than .000.

It important to understand that Spearman's rho examines how well a monotonic function can describe the relationship between the two variables and is a non-parametric measure of rank correlation. The positive correlation coefficient in this instance indicates a direct and monotonic relationship, meaning that when one variable increases, the other does so as well, consistently.

The reliability of these results is further reinforced by the size of the sample, which consisted of 300 participants. Since it decreases the likelihood that the observed correlation could be the product of random variation within a smaller sample, this sample size is typically regarded as robust for correlation analysis.

It is important to note that correlation does not imply causation. Although a significant relationship has been shown between PRS and TSIS, this does not always imply that modifications in PRS lead to modifications in TSIS or vice versa. The observed correlation may result from additional factors that were not taken into account in this analysis but that affect PRS and TSIS. The results are noteworthy because they point to a relationship, but more investigation is needed to define this relationship's exact nature, including whether it is causative or affected by other factors.

Table 3.2

Mann Whitney U Test values for scales in both groups of University Teachers

	Lahore		Islamabad		U	P
	N	M	N	M		
PRS	150	213.5	150	86.06	1652.0	.00
TSIS	150	205.6	150	93.9	2836.0	.00

Note: M= Mean, SD= Standard Deviation, U= Mann-Whitney, p= Significance value

A Mann-Whitney U test was conducted to examine the differences between two cities, Islamabad and Lahore, on the variables of PRS and TSIS. The results are summarized in Table 3.2. The Mann-Whitney U test revealed a significant difference between the cities for both PRS and TSIS (PRS: $U = 1652.00$, $Z = 12.786$, $p < .001$; TSIS: $U = 2836.00$, $Z = -11.206$, $p < .001$).

Table 3.3

Relationship Between Demographic Variables and Study Variables

Ranks	Location	N	Mean Rank	Sum of Ranks
PRS	Islamabad	150	214.49	32173.00
	Lahore	150	86.51	12977.00
TSIS	Islamabad	150	206.59	30989.00
	Lahore	150	94.41	14161.00
Total	-	300	-	-

Noted: N= Number of Participants

Table 3.3 shows mean ranks of both variables among both groups (Islamabad and Lahore). For PRS, the mean rank for Islamabad (M = 214.49) was significantly higher than that for Lahore (M = 86.51). Similarly, for TSIS, the mean rank for Islamabad (M = 206.59) was significantly higher than that for Lahore (M = 94.41). The findings suggest that there are significant differences between Islamabad and Lahore in terms of both PRS and TSIS.

Table 4.1

Comparison of Gender with Study Variables (PRS & TSIS)

	Male		Female		U	P
	N	M	N	M		
PRS	150	155.98	150	145.02	10428.0	.27
TSIS	150	152.72	150	148.28	10917.0	.65

Note: M= Mean, *SD*= Standard Deviation, *U*= Mann-Whitney, *p*= Significance value

In the table 3.4, Mann-Whitney U was applied to measure the difference between gender and study variables those are PRS and TSIS. The Mann Whitney test results, there are no statistically significant differences in both PRS and TSIS scores between the gender groups. The p-values for both tests (.274 for PRS and .658 for TSIS) exceed the conventional alpha level of 0.05, suggesting that any observed differences in scores are likely due to chance rather than a true difference in the populations.

Table 4.2

Comparison of Age with Study Variables (PRS & TSIS)

		26-35	36-45		45-60 ABOVE		H	P
	N	M	N	M	N	M		
PRS	204	148.3	95	154.4	1	223.0	1.02	.60
TSIS	240	146.46	95	158.4	1	222.0	1.9	.38

Note: M= Mean, SD= Standard Deviation, =Kruskal Wallis H test, p= Significance value

Table 4.2 shows Kruskal-Wallis H test, it is a non-parametric test used to determine if there are differences between three or more independent groups. In this context, the test compares PRS and TSIS scores across different age groups. The Kruskal-Wallis H test for PRS indicates no significant differences in scores across different age groups ($H = 1.020$, $df = 2$, $p = .600$). The mean ranks for PRS are relatively consistent across age groups. Similarly, the Kruskal-Wallis H test for TSIS reveals no significant differences in scores across different age groups ($H = 1.917$, $df = 2$, $p = .383$). The mean ranks for TSIS also show a relatively stable pattern across age groups.

Table 4.3

Comparison of Education with Study Variables (PRS & TSIS)

	Masters		PH.D		H	P
	N	M	N	M		
PRS	258	150.08	42	153.11	.044	.834
TSIS	258	148.1	42	164.75	1.31	.251

Note: M= Mean, SD= Standard Deviation, =Kruskal Wallis H test, p= Significance value

The Table 4.3 present the results of a Kruskal-Wallis H test conducted to examine differences in PRS and TSIS scores based on the education level (Masters vs. Ph.D.).

The Kruskal-Wallis H test indicates no significant difference in PRS scores between individuals with Masters and Ph.D. levels of education ($H = 0.044$, $df = 1$, $p = .834$). This suggests that educational attainment at these levels does not significantly impact PRS scores. Similarly, for TSIS, the test shows no significant difference in scores between the two education levels ($H = 1.319$, $df = 1$, $p = .251$). While the mean rank for Ph.D. holders is somewhat higher than that for Masters holders, this difference is not statistically significant. the Kruskal-Wallis H test results suggest that there are no statistically significant differences in both PRS and TSIS scores based on the education level (Masters vs. Ph.D.).

Table 4.4

Comparison of Years of Experience with Study Variables (PRS & TSIS)

	1-5 Years		6-10 above Years		U	P
	N	M	N	M		
PRS	239	148.4	61	158.6	6790.0	.40
TSIS	239	147.4	61	162.4	6259.5	.22

Note: M= Mean, SD= Standard Deviation, U= Mann-Whitney, p= Significance value

Table 4.4, show the results of a Mann-Whitney U test, which is used to compare differences between two independent groups. In this case, the groups are based on the variable "Experience," categorized as "1-5 years" and "6-10 years and above."

The Mann-Whitney U test for PRS indicates that there is no statistically significant difference between the two experience groups (U = 6790.000, p = 0.408). The Z-score of -0.827 also supports this. The relatively high p-value (greater than the common alpha level of 0.05) suggests that any observed difference in PRS scores between the two experience groups is likely due to chance. Similarly, the test for TSIS shows no significant difference between the experience groups (U = 6559.500, p = 0.227). The Z-score of -1.208 and the p-value above 0.05 reinforce this finding.

Based on the Mann-Whitney U test results, there are no statistically significant differences in both PRS and TSIS scores between the two experience groups. For both PRS and TSIS, the p-values are above 0.05, indicating that the differences observed in the scores between individuals with 1-5 years of experience and those with more than 6 years of experience are not statistically significant and could be attributed to random

variation. These results suggest that experience, as categorized in this study, does not have a significant impact on PRS or TSIS scores.

CHAPTER 04

DISCUSSION

This chapter is about the discussion on the results presented in chapter 03. The Present study aims to investigate the study variables those are perceived restorativeness (PRS) and social intelligence (TSIS) between two groups those are Islamabad and Lahore among university teachers. The data analysis process used descriptive and inferential statistics to thoroughly investigate the association between perceived restorativeness (PRS) and social intelligence (TSIS) among university professors in Lahore and Islamabad. Both methods of statistical analysis helped to properly summarise and understand the acquired data.

Descriptive statistics used measures such as means, standard deviations, frequencies, skewness, and kurtosis to provide insights into the participants' demographics. The age distribution, gender representation, educational background, and years of experience were thoroughly analysed to ensure a balanced understanding of the sample characteristics. The findings revealed a diversified and representative participant population, with an almost equal number of male and female participants across different age groups, education levels, and years of experience. Furthermore, normality tests were performed to evaluate the data distribution and the psychometric features of the scales used. The PRS and TSIS scales have non-normal distributions ($p < .05$), highlighting the need for strong statistical approaches in future investigations.

Spearman correlation analysis found a significant positive connection ($\rho = .860$, $p < .001$) between PRS and TSIS. This suggests that when restorativeness increases, so does social intelligence among university teachers. These findings are consistent with theoretical frameworks that propose a beneficial relationship between restorative

environment and cognitive-emotional resources, strengthening the indirect link between restorative environments and social intelligence.

Additionally, Mann-Whitney U tests were used to compare PRS and TSIS scores among university teachers in Lahore and Islamabad. The results demonstrated considerable disparities, with Islamabad teachers reporting higher mean ranks for both PRS and TSIS compared to their Lahore counterparts. The comparison of these characteristics between two cities provides insight into environmental factors that may contribute to differences in perceived restorativeness and social intelligence.

The impact of demographic characteristics such as age, gender, education, and years of experience were investigated using Kruskal-Wallis H tests and Mann-Whitney U tests. The results showed that these demographic characteristics had no significant impact on the study variables. Gender, age, education level, and years of experience did not substantially predict perceived restorativeness and social intelligence among university teachers. These findings add to our understanding of the variables that influence restorative settings and social intelligence.

Demographic Variables

The demographic characteristics of the participants in the present study, as outlined in Table 1 in results (chapter no. 03), provide a comprehensive overview of the sample composition and distribution across key variables. The study included a total of N=300 participants, with a careful distribution of participants from both Lahore and Islamabad, each contributing 50% to the overall sample.

Gender distribution revealed a balanced representation, with 151 females (50.3%) and 149 males (49.6%) in the total sample. This gender balance is crucial for

ensuring that potential gender-related variations are adequately captured and analysed in subsequent discussions.

Examining the age distribution, participants were categorized into three groups: 26-35, 36-45, and 46-60 above. In Lahore, the majority of participants (72.7%, n=106) fell within the 26-35 age range, with 27.3% (n=41) in the 36-45 range. Contrariwise, in Islamabad, 64.5% (n=96) were in the 26-35 age range, and 35.3% (n=53) fell into the 36-45 age group. The representation of participants aged 46-60 and above was minimal in both cities, with only 0.7% (n=1) participant in Islamabad.

Regarding educational qualifications, the distribution highlighted that maximum number of participants (n=131) in Lahore held Master's degrees, and least number of participants (n=19) held Ph.D. degrees. In Islamabad, maximum participants (n=127) were Master’s degree holders, and least (n=23) held Ph.D. degrees. This educational distribution is vital for contextualizing the findings, as participants with different educational backgrounds may exhibit varying responses to the study variables.

The experience level of participants, categorized into 1-5 years and 6-10 above years, revealed that a significant number of participants (n=128) in Lahore had 1-5 years of experience, while some (n=22) reported 6-10 and above years of experience. In Islamabad, many of the participants (n=111) had 1-5 years of experience, while a small number of Participants (n=36) reported 6-10 and above years of experience. This distribution is crucial for understanding the potential influence of professional experience on the study variables.

The current study's demographic characteristics indicate a well-balanced and diverse sample, representative of both Lahore and Islamabad, encompassing various age groups, genders, educational levels, and professional experiences. Such comprehensive

representation ensures the robustness and generalizability of the study findings across different demographic profiles.

Reliability

The value of Cronbach alpha reliability for Perceived Restorativeness Scale (PRS-11) was α coefficient of .861 indicates strong internal consistency reliability which is almost similar to suggested in originally developed versions of scale (0.94, Berto, 2007: 0.95; Pasini et al., 2009; 0.79; Berto, 2005). These values are consistent with those found in other research studies (Korpela and Hartig, 1996; Purcell et al., 2001), indicating a strong level of reliability. The education level and literacy of participants can be reason for good reliability of scale even being used in different culture because it gives a better understanding to participants about scale items.

Tromso Social Intelligence Scale (TSIS) shown the substantial Cronbach's α coefficient of .91 suggests robust internal consistency reliability that is almost similar to originally developed scale version showed for the three scale factors all produced values greater than or equal to 0.80. This provides evidence that the scale is internally consistent (Silvera et al., 2001).

Findings from results section including tables gives a clear and deeper understanding and insight about the study objectives. The first objective of the study mainly focused on relationship between restorative environments and social intelligence among university employees in Lahore and Islamabad. The Findings in table 3.1 shows the evidence supporting this objective. Table 3.1 shows that there is a strong correlation exist between perceived restorativeness and social intelligence, if one variable increase the other increase as well or vice versa for instance, if perceived restorativeness increases social intelligence increases as well.

The second objective was to compare restorativeness and social intelligence among Lahore and Islamabad university teachers. The findings shown in table 3.2 supports this objective gives a deep understanding for this objective. According to the table 3.2, For PRS, the mean rank for Islamabad was significantly higher than that for Lahore. Similarly, for TSIS, the mean rank for Islamabad was significantly higher than that for Lahore. The findings suggest that there are significant differences between Islamabad and Lahore in terms of both PRS and TSIS.

The last objective 3 was focused to find out the impact of demographic variables such as age, gender, education and years of experience. The tables 4.1, 4.2, 4.3 and 4.4 show the findings of this objective. There was no significant impact of demographic variables (age, gender, education and years of experience) on any study variables. The previous literature suggests that previous research indicates that demographics can influence environmental inclination (Stamps, 1999). for example, Berto conducted an empirical study in 2007 found that young adults and adolescents perceive natural environments as more restorative than built ones. (Berto, 2007) However, Nordh et al. in 2011 discovered that preferences for urban green parks where people could relax and recuperate from exhaustion were generally consistent across age and gender.

H1: There is a positive relationship between a restorative environment and social intelligence among university teachers.

The findings reported in Table 3.1, we can infer that the hypothesis is accepted and supported. The findings reveal a significant and strong positive correlation between restorative environment (PRS) and social intelligence (TSIS) among university teachers. This suggests that teachers who perceive their environment as more restorative tend to exhibit higher levels of social intelligence. These results are consistent and aligned with the theoretical framework suggesting that restorative environments can enhance

cognitive and emotional resources and social information is processed similarly to cognitive information, which implies an indirect relationship between restorative environment and social intelligence. (Kaplan, 1995; Ulrich, 1983; Silvera et. al., 2001)

H2: There is a significant difference between Lahore and Islamabad university teachers, with Lahore employees to exhibit lower levels of Social Intelligence than in Islamabad.

According to the findings presented in Table 3.2, it is concluded that significant difference between both PRS and TSIS among Islamabad and Lahore university teachers. For PRS, mean rank for Islamabad was significantly higher than that for Lahore. Similarly, for TSIS, the mean rank for Islamabad was significantly higher than that for Lahore. This pattern suggests that not only do university teachers in Islamabad perceive their environment as more restorative, but they also exhibit higher levels of social intelligence.

The comparison of these two variables between two cities, Lahore and Islamabad, is a unique aspect of the current study; these phenomena of comparison and relationship have not been investigated explicitly in any previous study. These differences could be due to a variety of circumstances. Differences in urban planning, environmental stresses, and institutional policies between the two cities may play an impact. Islamabad, recognised for its greenery and well-planned urban layout, may offer a more restorative setting for psychological well-being and social cognitive functioning than Lahore, which is more densely inhabited and urbanised.

These disparities in environmental quality may have an impact on cognitive function and stress levels, both of which affect social intelligence. Research has indicated that high-stress situations impair social cognitive processes (Sapolsky, 2004),

whereas restorative environments improve cognitive performance and emotional well-being (Kaplan, 1995).

H3: There is a significant impact of demographic variables (age, gender, education and years of experience) on the restorative environment and social intelligence.

The Hypothesis 3, which suggested a significant impact of demographic variables (age, gender, education, and years of experience) on the restorative environment (PRS) and social intelligence (TSIS), the results suggest a different narrative.

To begin with, gender differences were examined using the Mann-Whitney U test. The findings indicated no statistically significant differences in both PRS and TSIS scores between genders. It is implied that the variations in scores between male and female participants are likely due to chance rather than a meaningful gender-based difference.

Regarding age, the Kruskal-Wallis H test revealed no significant differences in PRS and TSIS scores across various age groups. It suggests that age does not significantly influence both study variables. This result challenges the assumption that different age groups might experience or perceive restorative environments and social intelligence distinctly. A study conducted by Nordh et al. in 2011 discovered that preferences for urban green parks where people could relax and recuperate from exhaustion were generally consistent across age and gender that is supporting evidence for rejection of the hypothesis.

Education differentiated as Masters versus Ph.D. holders, also did not demonstrate a significant impact on PRS and TSIS scores. The Kruskal-Wallis H test

results suggest that level of educational attainment does not significantly differentiate individuals in terms of perceived restorativeness or social intelligence.

Lastly, the influence of experience, categorized as the influence of experience, categorized as "1-5 years" versus "6-10 years and above," was assessed using the Mann-Whitney U test. The results for both PRS and TSIS indicated no significant differences between these experience groups. These observed variations are likely not substantial and could be attributed to random variation, rather than a genuine impact of experience on these scores.

About education level and year of experience, previous study had not extensively investigated these specific variables. The findings of present study, however, demonstrated that neither education level nor years of experience had a significant impact on PRS and TSIS. This unique finding leads to a better understanding of the elements that influence restorative settings and social intelligence.

Limitations and Suggestions

In this study, a cross-sectional research design was being used to investigate the relationship or association between the variables of interest and their comparison between two groups those are Islamabad and Lahore. The use of a cross-sectional design allowed for the examination of data at a specific point in time, providing valuable insights into the existing relationship between the variables under investigation. However, it is important to acknowledge that this design has inherent limitations.

One of the limitations of this study is its reliance on a cross-sectional design, which restricts the exploration of causal relationships between the variables. While cross-sectional studies are valuable in establishing associations, they do not offer a

definitive understanding of cause and effect. To address this limitation and strengthen the evidence for causal relationships, future research could consider implementing longitudinal studies or experimental designs. Longitudinal studies would enable the observation of variables over an extended period, allowing for a more comprehensive understanding of their dynamic interactions. On the other hand, experimental designs would allow for the manipulation of variables to establish causal relationships more definitively.

Another potential limitation of this study is the presence of time constraints and limited resources. Conducting research within a specified timeframe and with limited resources can impose certain limitations on the study's scope, sample size, and data collection methods. These limitations were being acknowledged and taken into consideration when interpreting the results. Despite these constraints, the researcher made every effort to ensure the study's rigor and validity within the available resources and timeframe.

Moreover, it is important to acknowledge that this study was conducted in a specific geographic location and will focus on a particular sample of university teachers. While this specificity allows for a targeted examination of the research question within a specific context, it may limit the generalizability of the findings to other cultural contexts or populations. It is crucial to recognize that different cultural, social, or demographic factors in diverse populations may influence the relationship between variables differently. Therefore, caution should be exercised when generalizing the findings beyond the study's specific sample and context.

Future research could aim to replicate the study in different cultural settings or with diverse participant groups to enhance the generalizability of the findings. Another aspect of this research study is the comparison is held between two cities (Lahore and

Islamabad) future studies can focus on comparison between public sector and private sector universities to get more in depth information and another angle to view.

Implications

The findings of this study have practical implications for organizations aiming to optimize employee well-being and performance. By gaining a deeper understanding of the relationship between restorative environments and social intelligence, organizations can proactively design work environments that foster restoration and enhance social intelligence among employees. Creating such environments holds the potential to positively impact various aspects of organizational functioning.

One significant outcome of this study is the potential improvement in collaboration and communication within the workplace. When employees are exposed to restorative environments and possess higher levels of social intelligence, they are more likely to engage in effective teamwork, share information, and build strong interpersonal relationships. This enhanced collaboration can lead to increased productivity as employees work synergistically towards common goals, leveraging their diverse skills and perspectives.

Additionally, a work environment that promotes restoration and supports social intelligence can contribute to improved job satisfaction among employees. Feeling rejuvenated and connected within the workplace can positively influence employees' overall job satisfaction, leading to higher levels of engagement, motivation, and retention.

Targeting the comparison of cities along with these variables, in a broader context, these findings can guide urban planners and policy makers in designing city landscapes that enhance workforce well-being and productivity. Understanding the correlation between environmental factors and social dynamics within organizations

can lead to city planning that supports the mental and emotional well-being of inhabitants, enhancing the overall quality of urban living. This holistic approach underscores the interconnectedness of environmental design, individual well-being, and organizational success.

Conclusion

The present study conducted a thorough exploration of the restorative environment using perceived restorativeness scale (PRS) and social intelligence using Tromso social intelligence scale(TSIS) among university teachers in two different urban environments in Pakistan, Islamabad and Lahore. The findings have revealed little-known correlations and variations between these constructs through a combination of distinct theories, while also exploring for various demographic characteristics such as age, gender, education and experience.

In the beginning the study found a significant positive association between restorative surroundings and social intelligence in university teachers. This major outcome verifies the hypothesis, emphasising the importance of restorative environment in improving social intelligence. This concept is critical for educational institutions because it emphasises the need to create developing and sustaining environments that promote educators' cognitive and social well-being.

In addition, the investigation into the differences between Lahore and Islamabad showed a significant difference. The idea that Islamabad university teachers would have higher levels of Perceived restorativeness and social intelligence than their Lahore counterparts was confirmed. The present study is very important since it indicates the impact of urban design and environmental quality on psychological well-being and social cognitive functioning together contributing to social intelligence. It emphasises

the importance of strategic urban development and institutional policies that prioritize restorative environments.

Regarding demographic characteristics, the study revealed an unexpected finding. Unlike the prediction, demographic parameters such as age, gender, education, and years of experience had no significant effect on PRS and TSIS. This result brings into question previous assumptions and implies a more general understanding of restorative environment and their effects on social intelligence, regardless of demographics.

In conclusion, this study contributes significantly to our understanding of how restorative environment and social intelligence interact, particularly in educational and organizational contexts. The findings not only emphasise the importance of environmental factors in improving social intelligence but also highlight the complexities of these interactions across urban environments. They advocate for a more holistic approach to educational environment design and administration, taking into account the restorative aspects that improve teacher's social intelligence. Further research is recommended to expand on these findings, looking at various contexts and demographics to gain a better understanding of these complex interactions and their consequences for educational and urban planning policies.

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APPENDICES

Appendix A

Part I

Informed Consent

I Muqqadas Saba conducting a research study entitled "Comparative Study of Restorative Environment and Social Intelligence Among University Employees of Lahore and Islamabad".

Upon completing the questionnaire, you are giving your consent to take part in this study. Your responses will be kept confidential and anonymous. Your participation will involve completing a survey that will take approximately 15-20 minutes. Participating in this study is entirely optional, and you are free to discontinue your involvement at any time without penalty. Please note that there are no known risks or discomforts associated with this study. However, if you experience any discomfort while participating in this study, you may discontinue.

Your participation in this study will greatly contribute to our understanding of the restorative environment and social intelligence and draw comparisons between Islamabad and Lahore University employees.

In case of query please contact ***bsp201002@cust.pk***.

Thank you for your time and consideration.

Signature: _____ **Date: _____**

Appendix B

Part II

Demographic Sheet

1) **Age**
    1. 18 to 25
    2. 26 to 35
    3. 36 to 45
    4. 46 to 60 and above
2) **Gender**
    1. Male
    2. Female
    3. Others: _____
3) **Education level:**
    1. Intermediate
    2. Bachelors
    3. Masters
    4. Ph.D.
4) **Employment status**
    1. Part Time
    2. Full Time
    3. Unemployed
    4. Retired
5) **Years of Experience in Current Position: _____**
6) **Please indicate the location where you are currently working as a university teacher**
    1. Islamabad
    2. Lahore

Appendix C

Part III

We are interested in how you experience your workplace. To help us understand your experience, we have provided the following statements for you to respond to. Please read each statement carefully, and then ask yourself:

"How much does this statement apply to my experience in this workplace?"

Statement	Strongly Disagree	Slightly Disagree	Disagree	Neutral	Agree	Slightly Agree	Strongly Agree
1. Places like that are fascinating.	Strongly Disagree	Slightly Disagree	Disagree	Neutral	Agree	Slightly Agree	Strongly Agree
2. In places like this my attention is drawn to many interesting things.	Strongly Disagree	Slightly Disagree	Disagree	Neutral	Agree	Slightly Agree	Strongly Agree
3. In places like this it is hard to be bored.	Strongly Disagree	Slightly Disagree	Disagree	Neutral	Agree	Slightly Agree	Strongly Agree
4. Places like that are a refuge from nuisances.	Strongly Disagree	Slightly Disagree	Disagree	Neutral	Agree	Slightly Agree	Strongly Agree
5. To get away from things that usually demand my attention I like to go to places like this.	Strongly Disagree	Slightly Disagree	Disagree	Neutral	Agree	Slightly Agree	Strongly Agree
6. To stop thinking about the things that I must get done I like to go to places like this.	Strongly Disagree	Slightly Disagree	Disagree	Neutral	Agree	Slightly Agree	Strongly Agree
7. There is a clear order in physical arrangement of places like this.	Strongly Disagree	Slightly Disagree	Disagree	Neutral	Agree	Slightly Agree	Strongly Agree
8. In places like this it is easy to see how things are organized.	Strongly Disagree	Slightly Disagree	Disagree	Neutral	Agree	Slightly Agree	Strongly Agree
9. In places like this everything seems to have its proper place.	Strongly Disagree	Slightly Disagree	Disagree	Neutral	Agree	Slightly Agree	Strongly Agree
10. That place is large enough to allow exploration in many directions.	Strongly Disagree	Slightly Disagree	Disagree	Neutral	Agree	Slightly Agree	Strongly Agree
11. In places like that there are few boundaries to limit my possibility for moving about.	Strongly Disagree	Slightly Disagree	Disagree	Neutral	Agree	Slightly Agree	Strongly Agree

Appendix D

Part IV

For each statement, rate how much you agree or disagree with it, using a 5-point Likert scale. Choose the response that best reflects your own opinion, with 1 indicating "strongly disagree" and 5 indicating "strongly agree". There are no right or wrong answers, so please answer truthfully and to the best of your ability.

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I can predict other people's behavior.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
2. I know how my actions will make others feel.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
3. I understand other people's feelings.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
4. I understand others' wishes.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
5. I can often understand what others are trying to accomplish without the need for them to say anything.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
6. I can predict how others will react to my behavior.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
7. I can often understand what others really mean through their expression, body language, etc.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
8. I often feel uncertain around new people who I don't know.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
9. I fit in easily in social situations.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
10. I am good at entering new situations and meeting people for the first time.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
11. I have a hard time getting along with other people.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
12. It takes a long time for me to get to know others well.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
13. I am good at getting on good terms with new people.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
14. I frequently have problems finding good conversation topics.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
15. I often feel that it is difficult to understand others' choices.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
16. People often surprise me with the things they do.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
17. Other people become angry with me without me being able to explain why.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
18. It seems as though people are often angry or irritated with me when I say what I think.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

19. I find people unpredictable.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
20. . I have often hurt others without realizing it.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
21. I am often surprised by others' reactions to what I do.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Appendix E

Permission Email from Author for PRS-11

MB

Margherita Brondino <margherita.brondino@gmail.com>

To: BSP201002 - MUQQADAS SABA

Wed 3/22/2023 1:40 AM

Cc: Margherita Pasini <margherita.pasini@univr.it>

Dear Muqqadas Saba,
we are very pleased if you want to use our scale. Many years ago I spent half an year in Islamabad and in the north of the country as volunteer for an NGO

best regards
Margherita Brondino and Margherita Pasini

Il 17/03/2023 09:14, Margherita Pasini ha scritto:

> Buongiorno, riesci a rispondere tu, quando puoi?

Permission Email from Author for TSIS

You don't often get email from monica.martinussen@uit.no. Learn why this is important

Dear Muqqadas Saba

You have our permission to use the TSIS for research purposes. I've attached a copy of the manuscript in which we validated the scale. In that manuscript (the pdf file), Appendix A includes the English version of the scale, including which items load on which social intelligence factor. The measurement scale we used is described on p. 9 in the Materials section for Study 2. The attached .doc file describes the procedure for scoring the TSIS.

The instructions that you may provide for the participants in your study are:
Below are a number of statements that describe people. Please indicate how well or how badly these statements describe you as you usually are. If you think the statement describes you extremely well, write a "5" on the blank line to the left of the statement. If you think the statement describes you extremely poorly, write a "1" on the blank line. If you think the statement describes you to some degree, choose the number between 1 and 5 that best describes how well you think the statement describes you. There are no right or wrong answers, but please only put one number for each response.

Good luck with your research.

Monica Martinussen
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Appendix F

Capital University of Science and Technology
Islamabad

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Ref. CUST/IBD/PSY/Thesis-574
August 7, 2023

TO WHOM IT MAY CONCERN

Capital University of Science and Technology (CUST) is a federally chartered university. The university is authorized by the Federal Government to award degrees at Bachelor's, Master's and Doctorate level for a wide variety of programs.

Ms. Muqqadas Saba, registration number **BSP201002** is a bona fide student in BS Psychology program at this University from Spring 2020 till date. In partial fulfillment of the degree, she is conducting research on "Comparative study of restorative environment and social intelligence among university employees". In this continuation, the student is required to collect data from your institute.

Considering the forgoing, kindly allow the student to collect the requisite data from your institute. Your cooperation in this regard will be highly appreciated.

Please feel free to contact undersigned, if you have any query in this regard.

Best Wishes,

Dr. Sabahat Haqqani
Head, Department of Psychology
Ph No. 111-555-666 Ext: 178
sabahat.haqqani@cust.edu.pk