



INTERNATIONAL JOURNAL OF TRENDS IN EMERGING RESEARCH AND DEVELOPMENT

INTERNATIONAL JOURNAL OF TRENDS IN EMERGING RESEARCH AND DEVELOPMENT

Volume 2; Issue 6; 2024; Page No. 146-155

(Special Issue)

“National Conference on Design Futures 2024”

Psychological impact of space layout in workplace environment

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DOI: <https://doi.org/10.5281/zenodo.14596610>

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Abstract

The design of workspaces significantly affects workers' psychological health, output, and satisfaction. This study investigates the relationship between space configuration and its impact on persons in professional settings, with an emphasis on spatial characteristics such as layout openness, workstation arrangement, closeness to collaboration areas, and silent zones. The study investigates how careful spatial design might improve employee well-being and efficiency by increasing control, reducing stress, and encouraging creativity. Natural lighting, privacy levels, accessibility, and ergonomic furniture are all important factors to consider while establishing a healthy work environment. This study seeks to uncover design methods that promote psychological wellness, collaboration, and productivity by assessing current literature and conducting surveys across diverse organizational layouts.

Keywords: Spatial wellness, serenity, ventilation, ergonomic, social density

Introduction

Workplace design and layout have a big influence on workers' psychological health, output, and job satisfaction. today's fast-paced workplace, employers increasingly recognize that the physical environment significantly impacts employees' mental health, performance, and engagement. As workspaces adapt to accommodate various work habits, the psychological consequences of space layout - such as open vs closed office plans, lighting, and acoustics - become increasingly relevant to investigate. According to research, workplace design affects stress levels, job satisfaction, and collaborative behavior. While open workplace plans are intended to enhance teamwork and communication, they can often result in greater stress owing to noisy distractions and a lack of privacy. Conversely, private, enclosed workspaces provide greater control and concentration but may impede spontaneous collaboration and engagement. Existing research emphasizes the importance of environmental elements like lighting, temperature, noise levels, and ergonomics in determining employee well-being. Natural light, for example, has been linked to increased mood and vitality, while bad acoustics

and unpleasant seating arrangements can cause physical discomfort and stress. Furthermore, flexible workspaces that allow employees to select between collaborative and quiet zones have been demonstrated to increase overall job satisfaction and prevent burnout. The purpose of this study is to investigate how various aspects of workplace design, both spatial and aesthetic, affect employees' mental health and productivity. Understanding these dynamics allows us to lead the creation of working spaces that enhance performance and promote a positive psychological experience for employees

Materials and Methods

Literature Review

Online Case Study on Titan Corporate Office, Bengaluru, Karnataka, India ^[1]

- **Lakeside Integration:** The facility is located on a 6.5-acre property with a bio lake on the eastern side that is designed to fit in with the existing lake, creating a peaceful environment for users.
- **Sustainable Orientation and Ventilation:** The building's north-south orientation provides glare-free

natural light, while porosity and wind tunnels promote natural ventilation. Non-air-conditioned open common areas reduce energy demand.

- **Green Terraces:** The three stories have cascading green terraces resembling rice fields, accessible via exterior staircases. These terraces provide natural insulation, outdoor workstations, and leisure pathways. **Natural Cooling and Energy Efficiency:** A hybrid air conditioning system combined with HVLS fans reduces energy consumption by 30%, while solar panels provide 25% of the building's energy requirements.
- **Central Spine and Water Feature:** The elevated ground floor has a central spine with water body reflections, open steps, courtyards, and informal meeting areas that connect users to nature and provide a dynamic sensory experience. **Atriums for Community and Collaboration:** Five huge atriums connect all levels, providing natural light and encouraging inter-departmental contact and harmony.
- **Dining Block and Multi-functional Spaces:** The dining area by the water provides indoor and outdoor seating with nature views, as well as a multifunctional hall with flexible space.
- **Symbolic Design Elements:** The crystal-like MD's cabin above the ocean represents Titan's design strength and innovation, aligning with the company's brand and energizing its team.

Inferences

- **Integration with Nature:** The building's lakefront location and biophilic design features, such as the bio-lake and green terraces, demonstrate a strong dedication to this approach, which enhances user well-being by fostering a connection between users and nature.
- **Sustainability & Energy Efficiency:** With a focus on energy conservation and climate responsiveness, the building incorporates sustainable techniques like solar energy generation, HVLS fans, natural ventilation, and hybrid air conditioning systems.
- **Architectural and Functional Harmony:** The multipurpose areas, symbolic MD's cabin, and tumbling green terraces exhibit harmony between usefulness, aesthetic appeal, and environmental concerns.
- **Emphasis on User Experience:** Elements that promote comfort, productivity, and teamwork include atriums, outdoor workstations, glare-free natural light, and casual meeting spaces.
- **Community and Collaboration:** By promoting communication between departments, the atriums and central spine promote a feeling of camaraderie and cooperation.
- **Design Symbolism and Brand Identity:** The MD's cabin, which resembles a crystal, is a striking architectural statement that reflects innovation and the brand's values. It also serves as a symbol of inspiration for staff members.

Key Takeaway

- **Principles of Biophilic and Sustainable Design:** Including natural components and sustainable systems increases user well-being, lowers energy costs, and improves aesthetics.

- **Prioritizing Energy-Efficient Systems:** Energy use can be greatly reduced using hybrid air conditioners and renewable energy sources like solar panels.
- **Multi-Functional and Adaptive Spaces:** Adaptable and dynamic areas that serve a variety of user demands include courtyards and dining areas with indoor-outdoor alternatives
- **Architectural Innovation to Encourage and Inspire:** Symbolic and distinctive architectural elements, such as the MD's cabin, can support organizational branding and encourage inspiration and pride.
- **Community-Centric Design:** Elements that promote social contact and teamwork, such as open meeting spaces and atriums, help to create a positive workplace culture.
- **Techniques for Natural Ventilation and Insulation:** Making use of open areas, wind tunnels, and green terraces lessens the need for artificial cooling systems while promoting thermal comfort.
- **Improved User Engagement with Sensory Design:** Natural walkways, terraces, and water features provide a multisensory experience that strengthens the user's bond with the surroundings. (Titan Integrity Campus, 2018).

Online Case Study on LinkedIn's Corporate Office ^[2]

- **Campus Expansion:** Three new buildings and two parking structures will join three existing buildings to form a hybrid campus of one million square feet.
- The design prioritizes natural light and outdoor spaces, including terraces, roof decks, courtyards, and two big open spaces for relaxing.
- **Sustainable Design:** The campus achieved LEED-Platinum accreditation by using Carbon Cure's low-carbon concrete, establishing a model for sustainable building.
- **Pedestrian and Cyclist-friendly:** The campus features walking loops and cycling routes that promote health and accessibility throughout.
- **Illuminated Staircase:** A full-height staircase leads to manicured patios, perfect for breaks and casual meetings.
- **Timber Pavilion:** This steel and timber structure resembles a treehouse and features a coffee bar, events, and evening illumination, providing an inviting ambiance.
- **Eco-friendly Parking Structure:** The garage includes perforated aluminum, green walls, roof PV panels, EV charging, bicycle parking, and LED lights with occupancy sensors.
- **Community Integration:** The campus's west-facing elevation matches the nearby residential area.

Inferences

- **Holistic Campus Design:** The campus expansion prioritizes connection and smooth user experiences by combining new and old buildings into a unified hybrid environment.
- **Sustainability as a Fundamental Idea:** A dedication to ecologically conscious building is demonstrated by obtaining LEED-Platinum certification and using low-carbon concrete.

- **Encouragement of Active Lifestyles:** Bicycle lanes and walking loops promote exercise and provide accessibility for both bicyclists and pedestrians.
- **User-Centric Spaces:** Elements such as courtyards, terraces, roof decks, and lit staircases provide chances for socializing, unofficial gatherings, and rest.
- **Innovative Architectural Features:** With its tree-house-like structure and nighttime lighting, the timber pavilion serves as a focus that is both practical and symbolic, fusing beauty and functionality
- **Future-Ready Parking Solutions:** The environmentally friendly parking building showcases forward-thinking infrastructure by including renewable energy (PV panels), sustainable materials, and spaces for electric vehicles.
- **Community Harmony:** The west-facing elevation's design features complement the nearby residential area, guaranteeing both functional and visual coherence.

Key Takeaway

- **Integration of Old and New:** A cohesive and expandable campus environment is produced when new buildings are skillfully combined with preexisting ones.
- **Sustainability in Every Aspect:** Using energy-efficient technologies (LEDs, EV charging), renewable energy sources, and environmentally friendly materials created a model for sustainable campuses.
- **Promotion of well-being:** Outdoor places, pathways for bicyclists and walkers, and peaceful spots all encourage a more active and healthier lifestyle.
- **Architectural Symbolism:** Distinct elements, such as the timber pavilions, improve user experience and act as a focal point for the design.
- **Energy-efficient Parking Solutions:** Parking structures that integrate PV panels, green walls, and contemporary lighting systems establish a standard for environmentally friendly transportation infrastructure.
- **Community and Context Sensitivity:** Harmony between the campus and the local community is ensured by designing with the surroundings in mind
- **Multipurpose Open Spaces:** In a lively campus setting, open areas for activities and relaxation promote participation social interaction, and productivity. (LinkedIn Middlefield Campus, n.d.)

Online Article on "The design of your environment shapes the design of your work. A well-crafted space leads to well-crafted ideas" – 23rd October 2024 ^[3]

- **Commercial Interior Design:** Combines aesthetics and practicality to improve the workplace, resulting in appealing and effective surroundings in encouraging positive employee behavior.
- **Building Structure and Layout:** Traditional cubicle-based design promotes focused work but can feel isolating, whereas open floor plans stimulate interaction but may introduce noisy disturbances. An effective design strikes a balance.
- **Natural Elements:** Incorporating natural light, plants, and green areas can improve well-being and creativity, making workplaces more welcoming and efficient.
- **Privacy and Collaboration:** Combining private and collaborative workstations fosters balance and allows

employees to choose the optimal atmosphere for each task.

- **Color and Atmosphere:** Bright colors stimulate creativity, while neutral tones promote calm focus. Aesthetic decisions influence the workplace environment and contribute to a positive culture.
- Design improves productivity and comfort by providing ergonomic furniture, adequate lighting, and well-organized rooms that promote focus and efficiency.
- Biophilic design, ergonomic furniture, and accessible environments promote employee well-being, making them feel valued and supported in their workplace.
- In summary, well-designed workspaces that address employee requirements can boost morale, creativity, and productivity, resulting in long-term corporate success.

Inferences

- **Holistic Workplace Design:** To improve comfort and productivity, well-designed commercial interiors blend aesthetics, practicality, and employee-focused solutions.
- **Balancing Privacy and Interaction:** Workspaces that strike a balance between private and communal areas cater to the various demands of staff members, facilitating both concentrated and engaged work.
- **Impact of Biophilic and Natural Elements:** Including greenery, plants, and natural light enhances creativity, well-being, and the general ambiance of the office.
- **Strategic use of Color:** Colors have a big impact on how people feel and behave; neutral hues encourage calm concentration, while vivid tones inspire innovation.
- **Ergonomics and Comfort:** Carefully considered design elements such as well-organized layouts, ergonomic furniture, and sufficient lighting lessen physical strain and enhance worker comfort.

Key Takeaway

- **Employee-Centric Design:** Using design to comprehend and meet the needs of employees boosts morale, output, and job satisfaction.
- **Balance in Layouts:** Creating a well-rounded workstation by combining private and open spaces minimizes distractions and encourages interaction.
- **Function of Natural features:** Biophilic design features, plants, and natural light create a welcoming and healthy work environment.
- **Functional Aesthetics:** Both aesthetic appeal and functionality are enhanced by well-planned layouts, ergonomic furnishings, and the proper color balance.
- **Effect on Creativity and Focus:** Workspaces that are thoughtfully planned in terms of lighting, color palettes, and spatial arrangement foster creativity and enhance concentration.
- **Design as a Strategic Investment:** Successful workplaces and happy employees are strongly impacted by well-designed interiors, which go beyond simple aesthetics.

(The Design of Your Environment Shapes the Design of Your Work. A Well-Crafted Space Leads to Well-Crafted Ideas, 2024).

Online Article on “The psychology of space in the workplace” November 2021 ^[4]

- The definition of spatial psychology is the study of how human emotions, behaviors, and well-being are influenced by physical environments, with an emphasis on interactions and perceptions in both indoor and outdoor settings.
- **Workplace Design and Interaction:** By encouraging communication, layouts can strengthen team ties and a sense of community among employees, fostering a cooperative and encouraging environment.
- **Impact of Green Spaces:** Including natural surroundings and greenery in workspace design improves mood and lowers stress, which makes the workplace healthier.
- **Air Quality and Lighting:** Good ventilation and natural lighting improve focus and mood, and reduce fatigue, while poor lighting or air quality negatively impacts health and productivity.
- **Ergonomic Furniture:** Well-made, comfortable furniture reduces physical discomfort and promotes increased concentration and productivity, which lowers the chance of accidents at work.
- **Color Influence:** Colors have an impact on behavior and mood; bright colors inspire innovation, while softer tones encourage serenity. Workspace color schemes should reflect employee preferences as well as functional needs.
- **Sustainable and Eco-friendly Design:** Circadian lighting, efficient air renewal, and the use of sustainable materials create healthier, more ecologically conscious workplaces.
- **Changing Workspace Trends:** Contemporary designs put flexibility and well-being first, eschewing strict layouts in favor of cozy, dynamic, and human-centered spaces that promote mental and physical health and productivity.

Inferences

- **Spatial Psychology:** The physical environment has a profound impact on human behavior and emotions, highlighting the role that design plays in improving well-being.
To create enjoyable experiences, good design takes into account interactions in both indoor and outdoor areas.
- **Workplace Interaction and Design:** Carefully considered layouts foster community, teamwork, and collaboration. Spaces that encourage interaction improve harmony at work, communication, and innovation.
- **Impact of Green Spaces:** Adding greenery to offices has been shown to dramatically raise employee satisfaction, lower stress levels, and foster a healthier work environment. To promote mental wellness in the workplace, biophilic features are crucial.
- **Lighting and Air Quality:** Adequate ventilation and natural light have a direct positive impact on concentration, vitality, and general health. Inadequate illumination and poor air quality can cause physical discomfort and reduce productivity.
- **Ergonomic Furniture:** Comfort and productivity are increased by furniture that supports body ergonomics.

Workplaces with ergonomic designs reduce physical strain and injury risk.

- **Color Influence:** Bright hues foster creativity, while softer shades promote rest. Colors have an impact on feelings and actions. A carefully considered color scheme improves staff satisfaction and functionality.
- **Eco-friendly and Sustainable Design:** Employing eco-friendly materials and technologies promotes environmental objectives and enhances worker health. A dedication to ecological responsibility is shown in green design solutions.
- **Changing Workspace Trends:** Employee well-being, flexibility, and adaptation are given top priority in modern companies. Modern designs prioritize dynamic, pleasant, and human-centered places above strict arrangements.

Key Takeaway

When aesthetics, functionality, and employee preferences are balanced, a thriving and harmonious workspace is created. A well-designed workplace incorporates principles of spatial psychology to improve employee well-being, productivity, and engagement. Features such as greenery, ergonomic furniture, sustainable materials, natural lighting, and flexible layouts create environments that are healthier and more dynamic. (Titan Integrity Campus, 2018)

Online Case Study on “Google Bagmane, Bengaluru, Karnataka, India ^[5]

- **Dynamic Design Language:** Breaks down the solidity of the building through asymmetry, enhancing natural light, comfort, and accessibility. Chamfered corners provide iconic sculptural form and visual connectivity with surroundings.
- **Facade Innovation:** Flowing facade wrap unifies the elevation while aluminum fins and dark bronze louvers regulate internal temperatures. High-performance electrochromic glass reduces glare and enhances usable internal space.
- **Green Features:** Over 8,000 sq. ft. of landscaped areas counteract the heat island effect and support climate resilience. Sky gardens, pocket gardens, and double-height breakout spaces provide green oases and foster well-being.
- **Sustainability Measures:** Renewable energy-powered systems with efficient chillers and eco-friendly refrigerants. Onsite sewage and water treatment, rainfall harvesting, and deep recharge wells for water conservation. Smart glass installation (largest in the world at 20,000 sqm) supports energy efficiency.
- **Interior Planning and Community Design Town Hall:** A massive urban square-like space at the heart of the ground floor, creating a vibrant community hub.
- **Floorplate Design:** Each floor is designed as streets and neighborhoods, encouraging horizontal and vertical interactions. Connected communities on every floorplate are supported by pocket gardens.

Inferences

- **Human-centric Design:** A dynamic and fluid architectural language prioritizes user comfort, interaction, and productivity. The integration of green

spaces, both horizontally and vertically, creates a natural and soothing environment.

- **Environmental Sustainability:** The campus incorporates climate-responsive strategies like smart glass, renewable energy, and heat island mitigation. Water management systems ensure sustainability in one of the world’s hottest regions.
- **Innovation in Technology:** The largest electrochromic glass installation globally showcases cutting-edge material innovation. Advanced systems for energy efficiency and resource conservation set benchmarks for sustainable design. Scalable Design: The modular layout of floorplates and self-sustaining communities can be adapted for other large-scale projects globally.

buildings, use eco-friendly materials, water-saving methods, and renewable energy sources.

- **Human-Centered Environments:** Put comfort, efficiency, and communication first with creative designs and include green areas.
- **Climate Sensitivity:** Use cutting-edge façade technologies to control temperatures and save energy, such as electrochromic glass and shading devices
- **Planning with the community in mind:** Create areas that encourage contact and teamwork by using flexible layouts and hubs that resemble urban squares.
- **Purpose-driven innovation:** Utilize state-of-the-art technologies to design settings that are sustainable, robust, and easy to use. (Google Bagmane, n.d.)

Key Takeaway

- **Designing for Sustainability:** When designing

Methodology

Aim of the Research
<ul style="list-style-type: none"> • AIM: This study examines the effects of physical workspace configurations on employee psychological responses, identifying spatial design techniques that contribute to general well-being creativity, and team collaboration. • OBJECTIVES: To examine how employee stress and productivity are affected by open versus closed office layouts. <ul style="list-style-type: none"> <input type="checkbox"/> To determine which particular design components—such as lighting, acoustics, and spatial arrangement—have an impact on employees' mental health at work. <input type="checkbox"/> To assess the psychological effects of various workspace arrangements and employee preferences. <input type="checkbox"/> To suggest design techniques that support harmony between private and communal areas for the best possible mental health. <input type="checkbox"/> To investigate the relationship between workstation aesthetics employee engagement and overall job satisfaction.
Literature Review
<ul style="list-style-type: none"> • Online Case Study on Titan Corporate Office, Bengaluru, Karnataka, India • Online Case Study on LinkedIn's Corporate Office • Online Article on "The design of your environment shapes the design of your work. A well-crafted space leads to well-crafted ideas" - 24th October 2024 • Online Article on "The psychology of space in the workspace" November 2021 • Online Case Study on Google Bagmane, Bengaluru, Karnataka, India
Sampling Strategy
<ul style="list-style-type: none"> • Population: This study's population consists of employees from various businesses who work in office settings. This covers those who frequently use office facilities, like communal workspaces, corporate offices, or creative spaces. • Sample Size: The expected number of replies needed for statistical reliability and variety was used to calculate the sample size. To guarantee sufficient representation while staying within the parameters of the study and its timeframe, a sample size of 40 participants was selected. • Sampling Method: To choose participants, a Purposive Sampling Strategy was used. This strategy was used in order to target people who work in a variety of office layouts and make sure that their experience is consistent with the study's focus on the psychological effects of space layouts. • Inclusion Criteria: In order to offer pertinent insights, participants must have worked in office settings for a minimum of 6 months. To provide a varied viewpoint, workers from different sectors, positions, and levels of hierarchy are included. • Exclusion Criteria: Remote workers or freelancers who don't work in offices. Participants who have not had much experience with private and collaborative working arrangements.
Types of Data Collection
<ul style="list-style-type: none"> • Primary Data: Survey through Questionnaires • Secondary Data: Articles, Journals

Data Analysis

- **Types of Data:** The data comprises multiple-choice answers that fall into two categories: Nominal (Yes/No) and Ordinal (Strongly Agree to Strongly disagree). Since the psychological effects of workplace design are the main focus of my main focus of research, mostly employ quantitative techniques to examine trends, patterns, and preferences.
- **Quantitative Data Analysis**
 - **Frequency Analysis**
 - **Method:** Determine the percentages and frequencies for every response type (Agree, Neutral, Strongly Agree).
 - **Purpose:** Gain insight into the distribution of answers to certain queries.
 - **Software:** Excel or SPSS
 - **Chi-Square Test**
 - **Method:** To ascertain whether a link is statistically significant, compare observed and expected frequencies.
 - **Purpose:** Examine how two categories of variables- such as "Age Group" and "Preferences for Private Spaces"- relate to one another.
 - **Software:** SPSS, R, Excel.
 - **Cross-tabulation**
 - **Method:** To create cross-tabulations and see the relationship, use Excel or SPSS pivot tables.
 - **Purpose:** Analyze how two variables, such as age and a liking for communal areas, interact.
 - **Descriptive Analysis**
 - **Method:** If appropriate aggregate responses quantitatively (by assigning a score of 5 to strongly agree and 1 to strongly disagree).
 - **Purpose:** Compile central trends for code ordinal data such as mean, median, and mode.
 - **Software:** SPSS or Excel.
 - **Correlation Analysis**
 - **Method:** For ordinal data, use Spearman's rank correlation.
 - **Purpose:** The goal is to find correlations between variables, such as mood enhancement and natural lighting.
 - **Software:** SPSS, R
- **Qualitative Data Analysis**
 - **Thematic Analysis**
 - **Method:** Go over the answers, mark important words and phrases, and organize related concepts into themes.
 - **Purpose:** Find recurrent themes in the comments like preferences for biophilic design and desire for privacy.
 - **Software:** Excel manual coding and NVivo.
 - **Content Analysis**
 - **Method:** Classify responses using sentiment analysis methods or word counts.
 - **Purpose:** The goal is to quantify particular terms or expressions such as stress and comfort to find trends in qualitative data.
 - **Software:** Online text analysis tools or NVivo.

Issues and Potentials

- **Limitation:** The diversity of data may be limited by resource limitations that prevent access to various office kinds.
 - The usefulness of research especially focusing on traditional office spaces may be limited by the rapid changes in work setting, such as the emergence of remote and hybrid work models.
 - Access to some high-tech design aspects (such as VR room installation) may be limited by budgetary and practical issues, which could impede the understanding of sophisticated spatial elements.
- **Scope:** The psychological effects of spatial arrangement in contemporary office settings will be the main focus of the study
 - To obtain thorough insights, the study will incorporate both qualitative and quantitative surveys.
 - Lighting, furniture placement, privacy features, and acoustics control will be the main design considerations.

Results and Discussion
Graphical Illustration

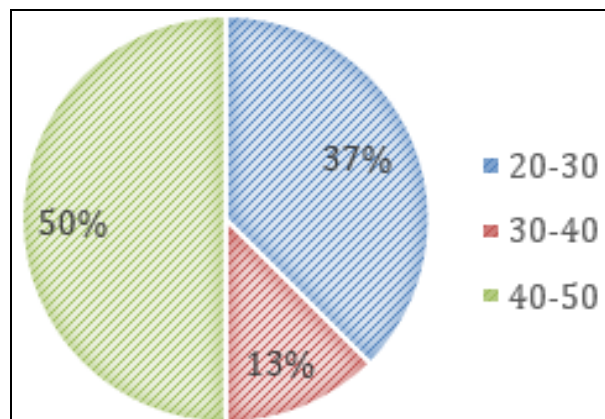


Fig 1: Age of the Respondents

The respondents' age distribution is displayed in the illustrated chart. With 50% of the total, the 40–50 age group is in the lead, followed by the 20–30 group with 37%. Merely 13% belong to the 30–40 age group. pointing out that this middle-aged group comprises half of the responders.

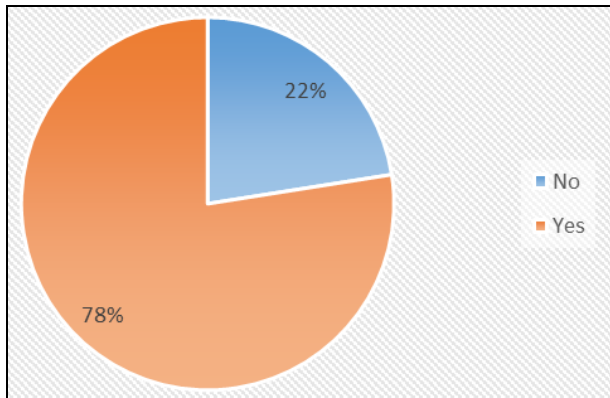


Fig 2: Open layout boosts productivity

According to the figure, 78% of respondents, a sizable majority, think that an open style increases productivity, whereas 22% disagree. This implies that participants generally choose the open design to increase workplace efficiency.

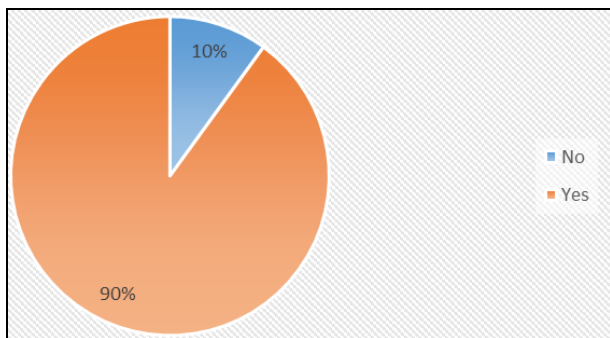


Fig 3: Prefer having a private space at workspace

90% of respondents, as seen in the figure, said they preferred having a private location at work, compared to just 10% who did not. This demonstrates the participants' strong preference for privacy as a desirable aspect of workplace design.

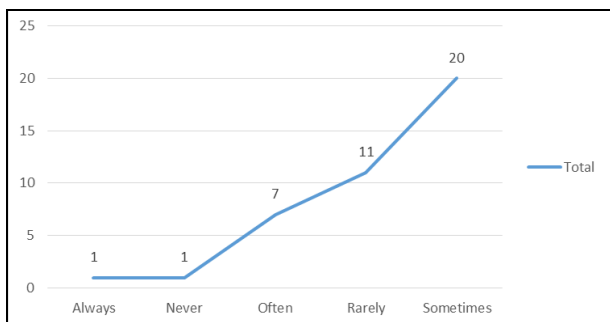


Fig 4: Stress due to workspace

According to the research, the majority of respondents (20) occasionally experience stress at work. Eleven respondents said they rarely feel this kind of stress, while seven said they do so frequently. Interestingly, only one respondent said they never or always felt stressed, suggesting that participants rarely encounter high levels of stress at work.

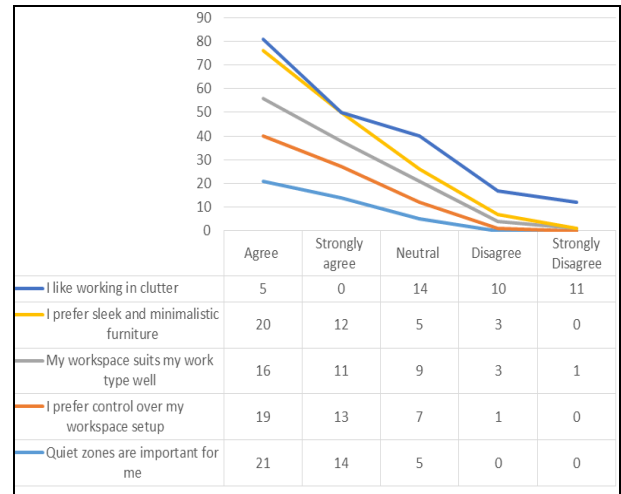


Fig 5: Preferences of a workspace configuration

- **Quiet zones are vital to me:** Most respondents (21) concur, with 14 strongly agreeing. The fact that only responses are neutral suggests that the majority of participants favor calm areas.
- **My workstation is ideal for my type of work:** With 16 agreeing and 11 strongly agreeing that their environment fits their work type, the responses are more diverse. 9 respondents, however, are indifferent, whereas only 3 and 1, respectively, disagree or strongly disagree. This implies that even though a lot of people are happy, workspace design may be better matched with job requirements.
- **I prefer working in clutter:** A sizable percentage of respondents say they don't like working in clutter (10 disagree and 11 strongly disagree). 14 are neutral, and only 5 agree. Even while some participants might not care, this suggests that organized workstations are generally preferred.
- **I want control over how my workstation is set up:** Most people (19) agree and 13 strongly agree that they would prefer control over their workspace. Personal control over workstation arrangement is highly valued, as evidenced by the 7 neutral respondents and the 1 who disagrees.
- **I like sleek, minimalist furniture:** With 20 people agreeing and 12 strongly agreeing, it is clear that people have a strong affinity for sleek, minimalist furniture. There is a general preference for modern and minimalistic design choices, as evidenced by the fact that only 3 respondents disagree and 5 are neutral.

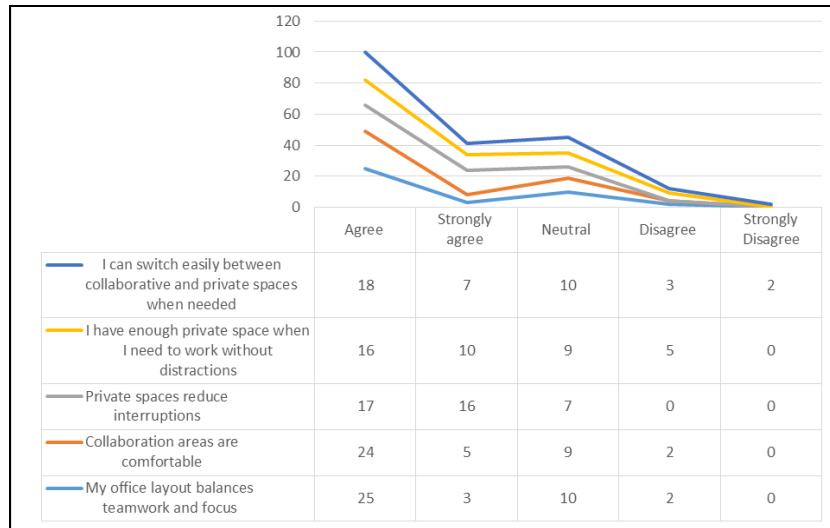


Fig 6: Balance of collaborative and private space

- My workplace layout successfully balances teamwork and focus: Most respondents (25) concur that their office layout does just that. Ten respondents, however, are neutral, and a smaller percentage—two disagree and three strongly disagree—are unhappy. This shows that most people are happy with the arrangement, but it also shows that some people think it could be better.
- The majority of participants (24 agree and 5 strongly agree) say that cooperation places are comfortable. Only two respondents disagree, while nine are neutral, indicating that although collaborative spaces are typically well-received, they should be improved further to guarantee inclusivity.
- Private spaces minimize disruptions: A significant majority of respondents (19 agree and 16 strongly agree) think that private areas successfully minimize disruptions. Just seven are indifferent, demonstrating a definite understanding of the value of private spaces.
- I have enough private space when I need to work without interruptions: five people disagree, nine are neutral, and sixteen people agree, with ten strongly agreeing. Although it highlights a need for improvement in terms of providing sufficient private area for concentrated work, this shows a generally good feeling.
- When necessary, I can move between private and collaborative areas with ease: Although 10 are neutral and 5 (3 disagree and 2 strongly disagree) indicate difficulties, the majority (18 agree and 7 strongly agree) believe they can move between collaborative and private places with ease. This implies that although there is flexibility, not everyone may find it easy.

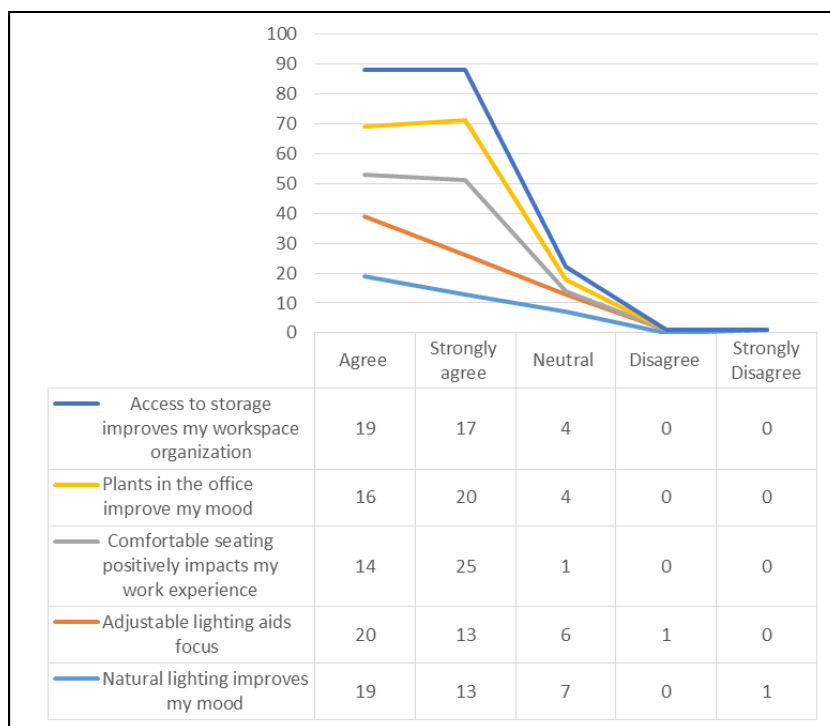


Fig 7: Influences of design element on well-being

- **Natural lighting lifts my spirits:** Most responders (19 agree and 13 strongly agree) acknowledge that natural lighting lifts their spirits. The fact that only 1 person strongly disagrees and only 7 are neutral highlights how universally accepted natural illumination is as a mood enhancer.
- **Focus is improved by adjustable lighting:** The majority of participants (20 agree and 13 strongly agree) think that improved focus is facilitated by changeable lighting. There is broad agreement regarding the value of flexible lighting systems in raising productivity, as evidenced by the fact that only 1 respondent opposes and 7 are neutral.
- **Having plants in the office lifts my spirits:** Only 4 respondents were neutral, while a sizable majority (20 strongly agree and 16 agree) confirmed that having plants in the office lifts their spirits. This indicates that biophilic aspects are highly preferred in the workplace.
- **Having access to storage makes my workspace more organized:** Most respondents (19 agree and 17 strongly agree) think that having access to storage makes my workspace more organized. 5 are neutral, demonstrating little opposition and a high endorsement of adequate storage options in the office layout.

Results

- **Preferences and Demographics age group distribution:** Of the respondents, 50 percent are between the ages of 40 and 50, and 37 percent are between the ages of 20 and 30. Just 13% fall between the ages of 30 and 40. This suggests that young employees and seasoned professionals have the most insights, whereas middle-aged people have the least.
- **Open Layouts:** A noteworthy 78% of participants indicated that they favor collaborative environments and believe that open layouts increase productivity. The Value of Privacy Balance in layout design is necessary, as seen by the significant 90% of responders who value having private spaces for concentrated work.
- **Workplace Characteristics and Mental Health Stress Levels:** Of those surveyed, the majority (20) report sometimes stress, 11 report seldom experiencing stress, and 7 report frequently experiencing stress.
- **Quiet Zones:** Most people (21), with 14 strongly agreeing, believe that quiet zones are necessary.
- **Workspace Fit:** Twelve respondents are ambivalent or disagree, even though 27 respondents believe their workstation matches their job type. The majority of respondents (21) expressed a disdain for working in cluttered environments, highlighting the importance of having well-organized workspaces.
- **Control over Workstation Setup:** A sizable portion (32) place high importance on having individual control over how their workstation is organized.
- **Design preferences and flexibility minimalist furniture:** A tendency toward modern aesthetics is evident in the preference of 32 respondents for clean, minimalist furniture.
- **Balanced Layout:** A majority (30) say their office layout balances teamwork and focus, however, 12 people stay neutral or disagree.
- **Private places:** Most people (35%) agree that private

places are useful for reducing disturbances.

- **Sustainable and Biophilic Components Natural Lighting:** The majority of participants (32) concur or strongly concur that their mood is improved by natural lighting.
- **Biophilic Design:** Most people (36%) think that having plants at work makes them feel better. Storage: 36 respondents said that having easily accessible storage is important for keeping a workspace tidy.

Discussion

- **Trends in workplace design private versus open spaces:** The necessity for hybrid designs is highlighted by the strong preference for private rooms (90%) even though open layouts are preferred for cooperation. Successful examples of striking a balance between privacy and openness may be found in case studies like Google Bagmane's floorplate neighborhoods and Titan's atriums.
- **Stress and Quiet Zones' Effects Occasional Stress:** Since the majority of respondents experience occasional stress, quiet areas—like LinkedIn's roof decks and Titan's tumbling green terraces—are essential for establishing peaceful surroundings.
- **Biophilic Design:** The psychological advantages of biophilic features are highlighted by the strong demand for plants and natural sunlight. These elements are skillfully incorporated into the designs of Google's pocket gardens and Titan's bio lake.
- **Flexibility and Design Minimalist Aesthetic:** A penchant for sleek, simple furnishings is in line with current office design trends. The sculptural form of Google Bagmane and Titan's significant MD's cabin serve as prime examples of how aesthetics may boost workplace appeal and represent business identity.
- **Flexibility:** The majority of respondents think that it is simple to switch between private and collaborative areas, which is consistent with Titan's multipurpose hall and LinkedIn's hybrid campus, where dynamic spaces serve a range of purposes.
- **Sustainability and Health Natural Ventilation and Electricity Efficiency:** Titan's hybrid air conditioners and environmentally conscious philosophy save electricity while improving comfort. Similar to this, Google Bagmane's renewable energy systems and LinkedIn's LEED-Platinum accreditation highlight how sustainability contributes to the creation of environmentally conscious and employee-focused workplaces.
- **Mood Enhancers:** The respondents' inclination for biophilic features and changeable lighting is consistent with research from "The Psychology of Space in the Workplace," which highlights the significance of ergonomic design and circadian lighting.
- **Storage and Arrangement Workspace Organization:** The pragmatic ideas of workplace productivity are in line with the great importance put on storage and clutter-free surroundings. Titan's terraces and Google's well-organized layout are prime examples of well-thought-out and useful design solutions.

Conclusion

To sum up, this study emphasizes how important workplace design is in determining worker satisfaction, output, and company success. The study emphasizes the significance of biophilic features, sustainable practices, and adaptable spatial layouts that accommodate a range of work styles through a thorough examination of case studies and survey results. Essential elements that improve comfort and productivity include natural light, vegetation, ergonomic furniture, and well-planned private and communal areas. According to survey data, employees strongly prefer customized workstations, clutter-free workspaces, and smooth transitions between focus and collaborative zones, even though innovative designs like those found in Titan, LinkedIn, and Google Bagmane place a higher priority on sustainability and community integration. The findings demonstrate that workplaces blending functionality, aesthetics, and sustainability can positively impact employee morale and foster a culture of creativity and collaboration, paving the way for long-term organizational growth.

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