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Psychological Impacts of Built Environments in Varied Office Types: A Survey–Literature Comparative Analysis

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Abstract

Modern workplaces are no longer just places to sit and work – they are environments that shape how people think, feel, and perform every single day. A well-designed office can energize, calm, or motivate its users, while a poorly designed one can quietly drain their focus and well-being. This study examines how lighting, ventilation, acoustics, privacy, greenery, and spatial layout influence the psychological experience of office users. Insights from 20 key research papers show that well-lit, clearly organized spaces reduce mental strain and support focus, whereas noise and lack of privacy remain major triggers of stress in many contemporary offices, especially open-plan layouts. Literature also emphasizes that natural ventilation and greenery play a crucial role in emotional balance, particularly in Indian contexts where environmental discomfort is common. Activity-Based Workplace (ABW) models emerge as a strong design response by offering quiet zones, collaborative areas, and flexible work settings suited to different tasks. A survey of 45 users strongly reflected these findings. Participants were generally satisfied with lighting and layout but frequently noted dissatisfaction with noise, privacy, ventilation, and limited natural elements. These concerns mirror the literature and highlight the need for more restorative, flexible, and user-centered spaces. Overall, the study finds that psychological comfort depends on balancing acoustics, privacy, greenery, ventilation, and spatial choice – principles best supported by ABW-inspired design.

Keywords: Workplace psychology, activity-based workplaces (ABW), environmental comfort, user well-being, office design parameters

INTRODUCTION

Workplaces today are not just physical settings – they are psychological ecosystems that influence how people think, feel, and perform every single day. As work culture evolves toward flexible, collaborative, and hybrid models, the role of workplace design in shaping well-being has become more important than ever. Research consistently shows that lighting, spatial layout, acoustics, ventilation, greenery, color ambience, and privacy have a powerful effect on mental comfort and cognitive performance [1–3]. Well-designed environments can support clarity, focus, and emotional ease, while poorly designed ones can quietly contribute to stress, frustration, and burnout.

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Yet many workplaces – especially open-plan offices – *struggle with noise, lack of privacy, limited greenery, and inconsistent ventilation*, all of which have been identified as major stressors in both international and Indian studies [3–6]. At the same time, new evidence highlights that *Activity-Based Workplaces (ABW)* offer promising solutions by providing a mix of quiet spaces, collaborative zones, semi-private areas, and relaxation points that better support diverse work needs [2, 3, 5]. These ideas form the foundation of the present research.

The aim of this study is to *understand how built environment features influence users' psychological comfort across different office types* and to identify design strategies that can create healthier, more supportive workplaces. The objectives include examining key environmental factors, analyzing user perceptions through a 45-response survey, comparing these findings with 20 major research papers, and identifying which design elements most strongly shape well-being. While the study focuses primarily on urban indoor workplaces – which limits insight into rural or outdoor settings – it provides a comprehensive understanding of psychological needs in typical corporate and architectural environments.

Early findings reveal clear patterns: users appreciate good lighting and layout but consistently struggle with noise, privacy, ventilation, and lack of natural elements – patterns strongly validated by literature. These insights hint toward a clear outcome: flexible, biophilic, and acoustically balanced ABW-inspired spaces may offer the most effective direction for future office design. By integrating research evidence with lived user experiences, this study ultimately aims to guide workplaces toward environments that are not only efficient but genuinely supportive of mental health, comfort, and well-being (Figure 1).

Figure 1. (a, b): Hectic, chaotic, and cluttered office environments illustrating high-density open-plan conditions associated with cognitive overload, noise disturbance, and reduced psychological comfort.

CONCEPTUAL FRAMEWORK

This study is grounded in principles of Environmental Psychology, particularly the workspace comfort model proposed by Jacqueline Vischer (2008), which categorizes user experience into three interrelated dimensions: physical comfort, functional comfort, and psychological comfort. Physical comfort includes environmental factors, such as lighting, acoustics, and ventilation; functional comfort relates to spatial layout and ergonomic support; while psychological comfort involves privacy, perceived control, and emotional well-being [7].

Within this framework, built environment elements act as sensory stimuli that influence users' cognitive processing and emotional responses. Factors, such as noise levels can lead to cognitive overload and stress, while biophilic elements, such as greenery and natural light contribute to emotional restoration and improved mood. Similarly, workplace layouts – ranging from open-plan to activity-based environments – affect perceived control, interaction patterns, and overall satisfaction.

Thus, the study adopts a conceptual relationship where built environment parameters influence psychological states, which in turn affect behavioral outcomes such as productivity, focus, and well-being.

LITERATURE REVIEW

The psychological impact of workplace environments has become a central focus in architectural and organizational research. Recent studies consistently demonstrate that built environment features – such as spatial configuration, acoustics, lighting, ventilation, color, ergonomics, biophilic integration, and overall sensory quality – significantly influence user comfort, emotional well-being, productivity, and

cognitive performance [1, 3]. A foundational understanding emerges across the 20 reviewed papers: workplace design is inseparable from workplace psychology, with even minor environmental adjustments producing measurable psychological outcomes [2].

Studies emphasize the importance of sensory factors, such as natural lighting, ventilation, and color psychology in shaping user well-being, arguing that emotionally supportive environments reduce stress and enhance creative performance [4]. Similarly, research highlights how psychological needs – privacy, territoriality, personality differences, and perceived control – must be explicitly addressed in workspace planning to avoid overstimulation or emotional fatigue, especially in open-plan settings [5]. These findings align strongly with the survey responses in this research, where occupants expressed a clear desire for quieter, more private, and visually comfortable environments.

Further insights emerge regarding the emotional effects of spatial proportions, color ambience, and biophilic elements, with studies showing that overstimulating or poorly ventilated environments can induce anxiety and cognitive overload [8]. Complementing this, environmental psychology models introduce the concept of functional comfort – the idea that a workplace must actively support work processes rather than force occupants to adapt to discomfort [6]. Research argues that poor design compels workers to spend mental energy coping with their surroundings instead of focusing on tasks, lowering performance and job satisfaction.

In a broader organizational context, studies explore how modern workspace strategies must evolve to address hybrid working patterns, cultural variations, and increasing psychological demands. These findings emphasize the need for adaptability, sensory comfort, and user autonomy to maintain productivity in dynamic work cultures [9]. Additional research confirms strong correlations between environmental comfort factors – such as noise levels, spatial layout, lighting, and ergonomics – and overall employee performance, particularly in high-density corporate environments [10].

Noise and acoustic stress consistently emerge as major limitations of contemporary office layouts. Multiple studies using physiological measurements demonstrate that open-plan environments increase stress, negative affect, and distraction, even when short-term performance appears unaffected – indicating that chronic psychological strain accumulates over time [11]. Earlier studies support this by showing elevated cognitive fatigue and reduced satisfaction in open-plan offices compared to more controlled workspace types [12, 13].

Complementary findings reinforce these themes. Research identifies lighting, spatial organization, and thermal comfort as strong predictors of productivity in Indian workplaces [14]. Studies on biophilic design further demonstrate its effectiveness in reducing stress, stabilizing mood, and enhancing mental clarity [7]. Evidence also links poor psychosocial environments to emotional strain and long-term mental health risks, validating the need for human-centered workplace strategies [15].

Collectively, the literature establishes several consistent conclusions:

- Lighting, acoustics, ventilation, and spatial organization are the strongest predictors of psychological comfort [16].
- Open-plan offices commonly increase stress levels, while mixed-layout or Activity-Based Workplace models offer healthier flexibility [17].
- Privacy, control, and personal space are essential psychological needs frequently overlooked in corporate design [18].
- Biophilic and visually calming design strategies reliably enhance mood, creativity, and emotional stability [19].
- Human-centered, adaptable design consistently outperforms purely cost-efficient or aesthetic-driven approaches [20].

In summary, the reviewed literature and survey findings converge on a central insight: psychologically intelligent workplace design is essential for supporting well-being, reducing stress, and enhancing performance. Architects and designers must, therefore, integrate environmental psychology, sensory comfort, and flexible spatial planning into the core of every office design strategy.

Critical Synthesis of Literature

While the reviewed studies broadly agree on the importance of environmental factors in shaping workplace psychology, several contradictions emerge. Activity-Based Workplaces (ABW), for instance, are widely promoted for flexibility and collaboration; however, studies, such as Gerlitz (2023), highlight a potential "productivity tax," where lack of fixed workspaces can reduce concentration and satisfaction. This suggests that ABW effectiveness depends heavily on implementation quality and spatial zoning [2].

Similarly, open-plan offices are often considered efficient and collaborative, yet multiple studies report increased noise disturbance, stress, and reduced cognitive performance. This highlights a conflict between economic efficiency and psychological comfort.

Overall, literature does not converge on a single ideal office model but instead emphasizes the need for balanced and adaptable environments that integrate privacy, flexibility, and environmental comfort.

Sample Characteristics

The survey included 45 participants from corporate, architectural, and academic backgrounds. The demographic distribution indicates that 65.2% of respondents were male and 34.8% female. A majority (89.1%) belonged to the 18–29 age group, with most participants (87%) having 0–5 years of work experience. This indicates a relatively young sample population, which may influence workplace preferences and perceptions.

Literature Selection

An initial review of approximately 120 research papers was conducted. After screening for relevance and quality, 40 papers were shortlisted, of which 20 were selected for detailed analysis in this study.

RESEARCH DESIGN

A mixed methodology was used:

- Literature review of key workplace psychology papers [1–20].
- Quantitative survey with 45 respondents from corporate, architectural, and academic workplaces.

This study adopts a mixed-method research methodology combining a systematic literature review with a quantitative user survey to comprehensively evaluate the psychological impact of built workplace environments (Figure 2). The literature review focuses on 20 rigorously selected research papers that collectively address key parameters, such as lighting, acoustics, spatial layout, privacy, ventilation, biophilia, and office typologies, providing a theoretical foundation for understanding how design factors influence psychological well-being. Complementing this, a structured survey was administered to 45 participants from corporate, architectural, and academic workplaces, capturing firsthand perceptions of environmental comfort and psychological responses through rating scales and preference-based questions (Table 1).

Questionnaires

This study investigates how key built environment factors – including lighting, colour ambience, spatial layout, acoustics, ventilation, privacy, and access to greenery – shape the psychological comfort, motivation, and well-being of office users, as strongly emphasized across prior research [1–6, 8]. It questions how natural light, visual openness, personalization, and biophilic elements influence emotional stability and cognitive performance, and whether these factors can reduce stress and burnout in high-density workplaces. In alignment with the survey, the research further examines user

satisfaction with noise control, privacy, territoriality, communication patterns, collaboration levels, and the availability of quiet or recreational spaces. It also explores how different office typologies – open-plan, shared, cellular, and activity-based – affect user preferences for focus, interaction, and mental restoration. Finally, the study asks which design strategies and spatial configurations most effectively support a psychologically healthy, flexible, and user-centered work environment, and how ABW principles can address the gaps identified through both literature and user responses.

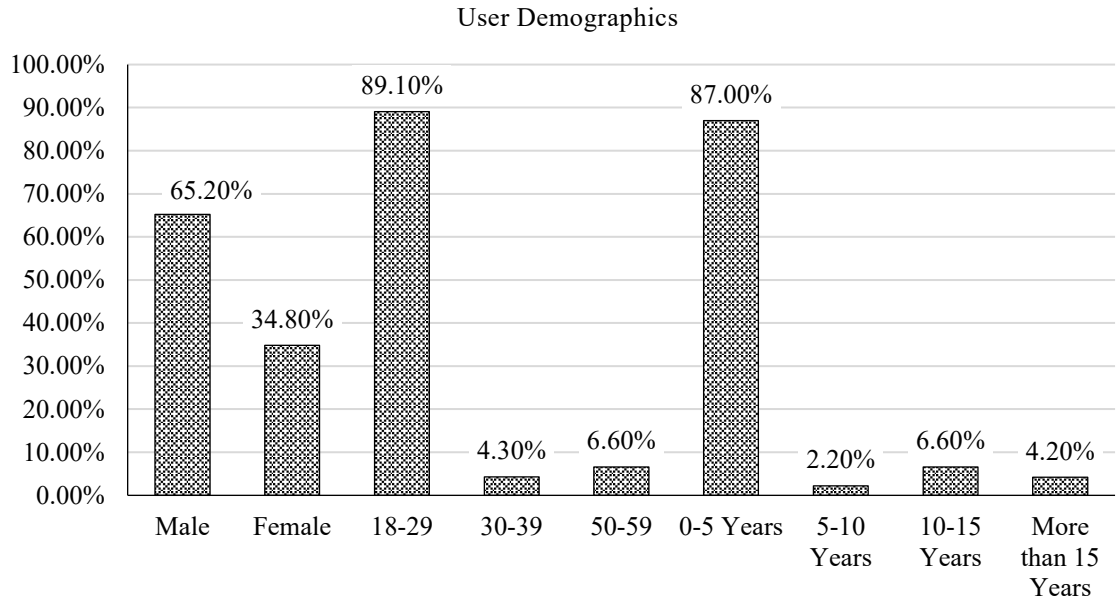

Figure 2. User demographics of respondents.

Table 1. User office types.

Single Office	65.20%
Collaborative workstation	17.40%
Shared office	13.00%
Academic Office	4.40%

SURVEY FINDINGS

The survey responses were analyzed using basic descriptive statistics based on a 5-point Likert scale (1 = low importance, 5 = high importance). Key parameters, such as noise control, privacy, greenery, and ventilation, showed high mean values, indicating strong user preference.

The survey results reveal strong connections between workplace design elements and the psychological well-being of employees, reflecting patterns consistently observed across the 20 research papers reviewed. Most respondents rated lighting quality and visual ambience as essential contributors to comfort and mental clarity, supporting earlier findings that proper lighting and color schemes enhance mood and cognitive performance. A significant portion of participants expressed dissatisfaction with the acoustic environment, noting that uncontrolled noise disrupts their focus and elevates stress – an outcome parallel to studies showing that open-plan offices often lead to cognitive overload and increased physiological stress responses (Table 2).

Employees also indicated a strong need for privacy and quiet spaces, emphasizing that focused tasks are difficult to perform in overly collaborative or exposed layouts (Figure 3). This aligns with literature highlighting psychological needs such as territoriality, perceived control, and personal space in workplace design. At the same time, respondents preferred a balanced workspace, where both

collaboration areas and quiet zones coexist – an idea central to Activity-Based Workplaces (ABWs), which several studies recommend as a flexible, task-supportive model when implemented correctly.

Table 2. Descriptive statistics of user preferences for workplace design parameters (Likert scale mean values and high-need percentages).

Design parameter	High–very high need	Mean (Likert scale)
Better Noise Control	74%	4.2
More Greenery	69%	4.1
Better Ventilation	66%	3.9
More Privacy Zones	72%	4.1
Better Lighting	55%	3.5
Breakout/Relaxation Spaces	68%	3.9
Ergonomic Furniture	71%	4.1

Question 1 – How well do you think following elements have been incorporated in your office space?

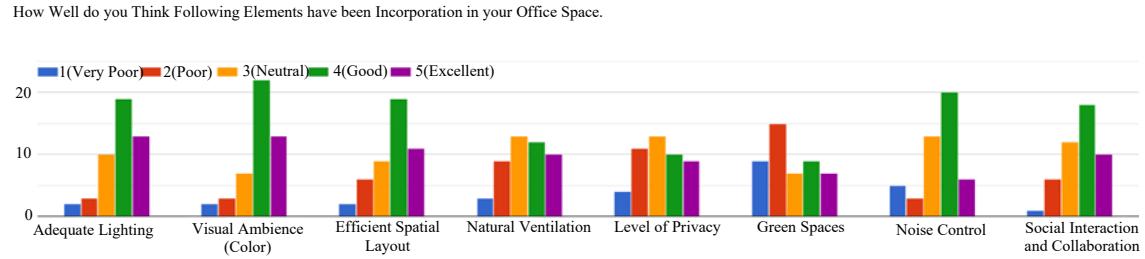

Figure 3. User ratings of workplace design elements based on perceived quality (Likert scale distribution).

Three design features stood out as most requested by participants:

- More greenery or biophilic elements, to reduce stress and create a calming atmosphere.
- Better spatial layout, to avoid visual clutter and overcrowding.
- Improved ventilation and air quality, to enhance physical comfort and reduce fatigue.

Question 2 – Employees rated following parameters in survey based on how strongly these would enhance their well-being at work:

- Better lighting, more privacy, improved ventilation, more greenery, better noise control, open plan designs, better ergonomic furniture, Improved temperature regulation, more collaborative spaces.
- Respondents working in cramped or glass-partitioned smaller spaces reported discomfort and heightened strain, matching research showing confined environments increase psychological fatigue and emotional exhaustion (Figure 4).

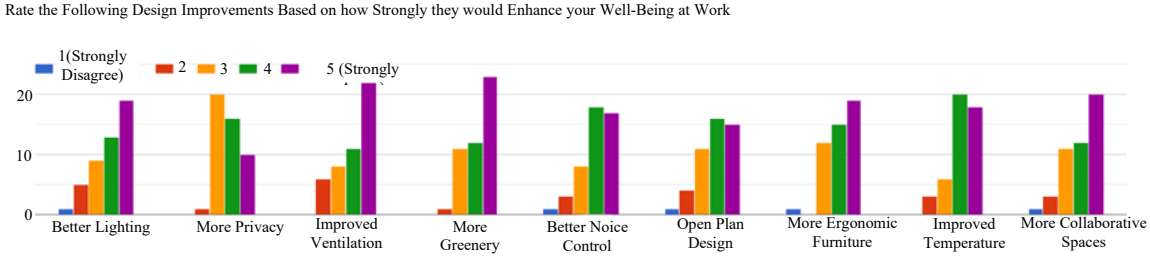

Figure 4. User evaluation of workplace design improvements based on their impact on well-being (Likert scale distribution).

Question 3 – Activity-Based Working (ABW) is a workplace approach where employees can choose from different types of spaces depending on their task – such as quiet zones for focus, collaborative areas for teamwork, and informal spaces for relaxation. The goal is to improve comfort, productivity, and overall well-being. What is your opinion on adopting ABW in your workplace?

Overall, the survey findings strongly reinforce the insights of the reviewed literature, demonstrating that workplace design – especially lighting, acoustics, spatial layout, biophilia, ventilation, and privacy – directly shapes employees' stress levels, satisfaction, focus, and overall psychological experience (Figure 5). These results suggest a clear need for human-centred design strategies to create healthier and more supportive corporate environments.

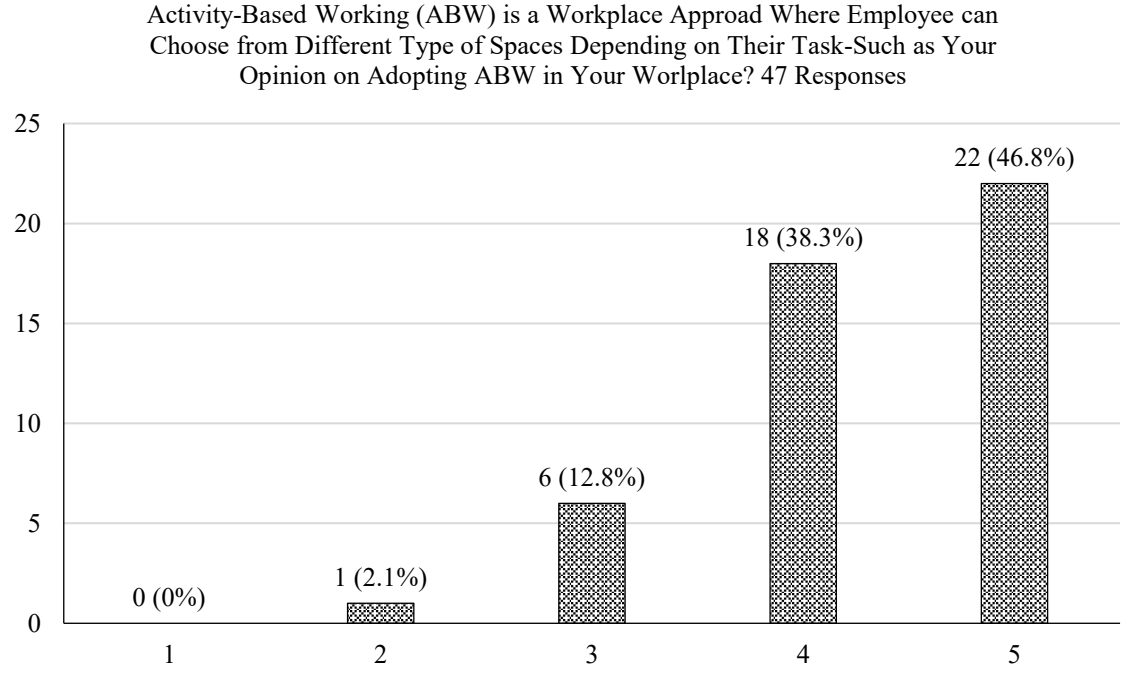

Figure 5. User perception of activity-based working (ABW) adoption based on Likert scale responses.

RESULTS AND DISCUSSIONS

The findings of this study show that user experiences closely match what existing research says about workplace design. Most participants felt comfortable with lighting and general layout, which agrees with studies showing that clear, well-lit spaces support better focus and reduce mental strain [1, 2]. However, users consistently mentioned problems with noise, lack of privacy, poor ventilation, and limited greenery. These are the same issues highlighted in research, where noise and frequent interruptions are identified as major distractions that increase stress in open-plan offices [3, 4]. This supports why many respondents preferred quieter or more enclosed work areas.

Participants also expressed a need for better air flow and more natural elements. Literature shows that ventilation and greenery help improve mood, reduce stress, and support overall well-being [5, 6]. Many users also wanted more control over their workspace – such as choosing where to work or being able to find private areas when needed. This aligns with research stating that personal control and territorial comfort play an important role in emotional stability [2, 4].

Across both literature and survey feedback, one direction becomes clear: workplaces need more flexibility. Activity-Based Workplaces (ABWs) offer exactly this flexibility by providing a mix of quiet zones, collaborative spaces, and areas for relaxation. Research shows that ABWs help reduce stress and

support different types of work more effectively than traditional open-plan layouts [2, 3, 5, 6]. Survey responses also showed strong interest in such mixed, adaptable environments.

Biophilic design and Activity-Based Workplaces (ABW) operate as complementary strategies. While ABW provides functional flexibility through diverse work settings, biophilic elements enhance psychological well-being by reducing stress and improving emotional balance. Together, they contribute to a more holistic and user-centered workplace environment.

Overall, the discussion shows that psychological comfort in offices depends on a balanced combination of acoustic control, privacy, ventilation, greenery, and choice of workspace. Both the literature and user feedback point toward ABW-oriented design can serve as an effective solution only when supported by proper acoustic control, spatial zoning, and user autonomy.

While survey responses indicate a preference for flexible environments with both collaborative and quiet spaces, supporting the principles of Activity-Based Workplaces (ABW), literature also highlights potential drawbacks, such as reduced concentration in poorly managed ABW settings. This suggests that flexibility alone is insufficient without appropriate acoustic and spatial zoning.

Design Suggestions

The findings of this research reinforce that workplace design has a profound and measurable influence on employee psychology, comfort, and performance. The combined evidence from the literature and survey responses shows that employees thrive in environments that minimize sensory overload, ensure privacy, support restoration, and provide autonomy in choosing how and where to work [1–3]. Modern workplaces must, therefore, move toward a human-centered approach, integrating environmental psychology and flexible spatial planning rather than relying solely on cost-driven or aesthetics-driven decisions [4, 5]. Attention to lighting, acoustics, ventilation, spatial zoning, and biophilic integration is essential, as these factors consistently emerge as the strongest predictors of emotional well-being and cognitive performance across multiple studies [6, 8]. Creating adaptable and psychologically supportive work environments not only reduces stress but also enhances motivation, creativity, and long-term satisfaction [10–12].

- Maximize natural lighting and provide adjustable artificial lighting, as illumination strongly affects mood, alertness, and cognitive efficiency [1, 8, 13].
- Enhance acoustic comfort through sound-absorbing materials, thoughtful zoning, and dedicated quiet rooms to mitigate distraction and psychological fatigue [2, 3, 7, 14].
- Create a balance between collaborative and private zones, ensuring employees can choose environments that support either focused work or interaction as needed [5, 11, 15].
- Integrate biophilic elements – indoor plants, green walls, natural materials, and outdoor views – to lower stress and improve emotional stability [4, 9, 16, 17].
- Design efficient spatial layouts with clear circulation, minimal clutter, and well-structured zoning to reduce visual overload and cognitive strain [6, 12, 18].
- Improve ventilation and air quality, as fresh air and natural ventilation directly support mental clarity, comfort, and reduced fatigue [8, 13, 19].
- Provide ergonomic and user-adjustable furniture, supporting comfort, posture, and a sense of control and territoriality [10, 15, 20].
- This includes breakout, relaxation, and decompression areas where employees can reset mentally and reduce emotional overload during work hours [2, 9, 16].
- Implement flexible/Activity-Based Workplace (ABW) systems, which allow users to shift between diverse workspace types depending on cognitive demands [5, 7, 18, 20].
- Use psychologically supportive aesthetics, such as calming color palettes, soft textures, and low-glare finishes, to maintain emotional balance and reduce stress [4, 12, 17].
- Avoid overly dense or cramped workstations, particularly glass-partitioned micro-offices that increase pressure, overstimulation, and emotional strain [3, 14, 19].

- Encourage personalization of workstations, allowing employees to add elements that provide familiarity, comfort, and psychological grounding [9, 15].

LIMITATIONS OF THE STUDY

While the study provides useful insights into workplace psychology, certain limitations should be acknowledged:

- *Limited Sample Size:* The survey was conducted with 45 participants, which restricts the ability to generalize the findings across larger or more diverse populations.
- *Demographic Bias:* Most respondents belong to the 18–29 age group and have relatively less work experience (0–5 years). This may influence preferences toward more flexible or collaborative work environments.
- *Urban and Corporate Focus:* The study primarily reflects responses from urban, corporate, and academic settings. Workplace conditions in rural or non-corporate environments may differ significantly.
- *Limited Statistical Depth:* The analysis relies mainly on descriptive statistics, which may not capture deeper relationships between variables.

Despite these limitations, the study still offers meaningful patterns and aligns closely with existing literature, providing a relevant foundation for further research.

CONCLUSION

This study demonstrates that the built environment of corporate workplaces is far more than a physical container for work – it is an active psychological force that shapes how people think, feel, behave, and perform every single day. Across the 20 research papers reviewed and the survey conducted, a clear and consistent message emerges: well-designed workspaces elevate people, while poorly designed ones exhaust them. Elements, such as lighting, acoustics, spatial layout, privacy, color, ventilation, and biophilic features, collectively determine the emotional climate of an office, influencing everything from stress levels and focus to motivation, creativity, and job satisfaction.

The findings from this study reinforce that the modern workplace cannot succeed on efficiency alone. Employees repeatedly expressed the need for environments that support both concentration and collaboration, offering autonomy, comfort, and psychological safety. The research strongly advocates for human-centred design – where acoustically balanced spaces, natural light, greenery, ergonomic layouts, and flexible work zones work together to nurture well-being. Offices that overlook these needs risk creating environments that drain mental energy, increase fatigue, and hinder performance.

At its core, this study reveals an exciting truth: when architecture respects human psychology, workplaces transform from stressful enclosures into empowering ecosystems. The future of corporate design lies not in choosing between open-plan, cubicles, or ABWs, but in creating dynamic, adaptable, and emotionally intelligent spaces that respond to the diverse needs of users. By embracing evidence-based design principles, organizations have the opportunity to build workplaces that do not merely housework – but actively inspire it.

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