International Academy Journal of Business Administration Annals
Volume 9, Issue 7, PP 53-65, ISSN: 2382-9175, January, 2025
OTL: 2721-4282-371-974
Double Blind Peer Reviewed International Research Journal
arcnjournals@gmail.com
https://arcnjournals.org

THE EFFECT OF WORKPLACE DESIGN ON INNOVATIVE WORK BEHAVOUR IN THE MANUFACTURING FIRMS

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Abstract: *This study investigates the impact of workplace design on individual work behavior, specifically focusing on employee creativity, problem-solving, and idea implementation. Using a quantitative approach, data were collected from 265 employees across six manufacturing firms in Rivers State, utilizing structured questionnaires and analyzed through Kendall's tau_b correlation coefficient. The findings reveal a significant positive relationship between workplace design and each of the examined work behaviors. Workplace design was found to strongly influence employee creativity (correlation coefficient = 0.635), problem-solving (correlation coefficient = 0.697), and idea implementation (correlation coefficient = 0.689). These results underscore the importance of optimizing work environments to enhance innovative capabilities. Recommendations include designing flexible, resource-rich spaces to foster creativity, minimizing distractions to improve problem-solving, and supporting the entire process of idea development and execution. The study highlights that thoughtful workplace design is a key factor in promoting and facilitating innovative work behavior within organizations.*

Keywords*: Employee Creativity, Idea Implementation, Innovative Work Behavour, Workplace Design, Problem-Solving.*

INTRODUCTION

Innovative Work Behaviour (IWB) is increasingly recognized as a critical driver of success in manufacturing firms. In a sector characterized by intense competition, rapid technological advancements, and evolving customer needs, the ability of employees to engage in behaviours that support innovation is essential. IWB encompasses the generation, promotion, and realization of new ideas, which are vital for continuous improvement, operational efficiency, and long-term competitiveness in manufacturing (Bos-Nehles et al., 2017).One of the primary reasons IWB is important in manufacturing firms is its role in enhancing process efficiency. By encouraging employees to think creatively and solve problems, firms can identify and implement improvements in production processes, leading to reduced waste, lower costs, and higher productivity (De Spiegelaere et al., 2014). This is particularly crucial in manufacturing, where even small enhancements in efficiency can result in significant cost savings and a stronger market position.Furthermore,

IWB contributes to product innovation, which is critical for meeting changing customer demands and staying ahead of competitors. Employees who engage in innovative behaviours are more likely to propose new product ideas or suggest modifications to existing products, leading to a diversified product portfolio and improved market responsiveness (Najafi-Tavani, et al., 2022).In a manufacturing context, where product lifecycles are often short and consumer preferences shift rapidly, such innovation can be a key differentiator.IWB also fosters a culture of continuous improvement and learning within manufacturing firms. When employees are encouraged to innovate and take ownership of their ideas, it promotes a proactive approach to work, where employees are constantly looking for ways to improve processes and products (Alateeg& Alhammadi, 2024). This culture not only drives ongoing operational improvements but also enhances employee engagement and satisfaction, as individuals feel their contributions are valued and impactful. The ability to innovate and solve problems effectively enhances the resilience of manufacturing firms. In an environment where disruptions, such as supply chain issues or technological changes, are common, firms that cultivate IWB are better equipped to adapt and respond swiftly (Olutimehin et al., 2024).). This resilience ensures that the firm can maintain its competitive edge even in the face of external challenges.

The design of the workplace has far-reaching implications beyond aesthetics; it plays a crucial role in shaping employee behaviour, particularly in fostering innovative work behaviour (IWB). In the manufacturing sector, where continuous innovation is essential for maintaining a competitive edge, the physical environment in which employees operate can significantly influence their ability to generate, promote, and implement new ideas. Workplace design encompasses various elements, including the physical layout, lighting, technology integration, and even the organizational culture embedded in the space. These factors collectively create an environment that can either stimulate or stifle creativity and innovation among employees (Martens, 2011).Manufacturing firms face unique challenges that require constant innovation, such as optimizing production processes, developing new products, and improving quality. A well-designed workplace can support these innovative efforts by promoting collaboration, reducing stress, and enhancing overall job satisfaction (McCoy & Evans, 2005). For instance, open-plan layouts may encourage spontaneous interactions and idea-sharing among employees, leading to a more dynamic and innovative work environment. On the other hand, poorly designed workspaces that lack adequate lighting, privacy, or flexibility can hinder communication and creativity, ultimately stifling IWB (Dul & Ceylan, 2014).

Despite several studies on work design and innovative work behavior respectively, the dearth of empirical study on the influence of workplace design (Martens, 2011; Dul & Ceylan, 2014), on innovative work behavior (De Spiegelaere et al., 2014; Bos-Nehles et al., 2017 in the manufacturing firms in Rivers State motivates this study. This study aims to explore the relationship between workplace design and innovative work behaviour in manufacturing firms By analyzing how specific design elements influence cognitive and creative processes, the research seeks to provide insights into how manufacturing firms can optimize their work environments to foster greater innovation and problem-solving capabilities among employeesand remain competitive in a rapidly changing industry.

STATEMENT OF THE PROBLEM

Innovative Work Behaviour (IWB) is essential for manufacturing firms to maintain competitiveness, adapt to evolving customer demands, and optimize production processes. However, the influence of workplace design on IWB is often underestimated. A well-designed workplace can enhance creativity and innovation, while a poorly designed environment can hinder these behaviours. Key issues include inadequate space layout, poor lighting, excessive noise, and a lack of private spaces, all of which can impede employees' ability to engage in innovative activities (Oldham & Fried, 2016).

A significant problem stemming from poor workplace design is reduced collaboration and communication. Overly compartmentalized manufacturing environments or rigid layouts can inhibit spontaneous interactions, which are often critical for generating creative ideas and solving problems (Sailer et al., 2017). When employees are isolated in cubicles or separated by physical barriers, opportunities for collaboration diminish, leading to a reduction in the flow of ideas and knowledge sharing—both crucial components of IWB.Another challenge is the increased stress and cognitive overload caused by noise and inadequate lighting. Excessive noise can lead to distractions and decreased concentration, hampering employees' ability to focus on creative tasks (Jahncke et al., 2013). Similarly, inadequate lighting—whether too dim or too harsh—can cause eye strain and fatigue, reducing the cognitive resources available for innovative thinking and problem-solving (Bodin-Danielsson, & Theorell, 2019). When employees are unable to maintain focus due to environmental stressors, their capacity for innovation and creativity is significantly diminished.

The lack of flexible workspaces is another barrier to IWB in manufacturing firms. Innovation often requires a mix of collaborative and solitary work, and environments that do not offer flexible spaces for different work modes can limit creative potential. For instance, while open-plan offices might be suitable for team discussions, they may not provide the privacy needed for deep, uninterrupted work (De Croon et al., 2005). Without access to diverse workspaces that cater to different tasks, employees may struggle to fully engage in the innovation process, leading to reduced IWB.Ergonomic issues are also a concern, as poorly designed workstations can lead to discomfort, fatigue, and even injury. In manufacturing settings, where physical tasks are common, these ergonomic problems can detract from an employee's ability to think creatively and solve problems effectively (Vischer, 2007). When employees are physically uncomfortable, their focus shifts from innovation to coping with discomfort, thereby reducing their contribution to IWB.

Despite the critical importance of IWB, many manufacturing firms prioritize efficiency and cost reduction over creating environments that support innovation. This focus often results in suboptimal physical work environments that fail to foster the type of innovative behavioursessential for long-term success. The gap in understanding and addressing the impact of workplace design on IWB presents a significant challenge for manufacturing firms aiming to enhance their innovation capabilities.Given the pivotal role that IWB plays in the competitiveness and sustainability of manufacturing firms, it is crucial to explore how workplace design influences these behaviours. This study seeks to address this gap by examining the specific elements of

workplace design that either facilitate or hinder IWB, thereby providing actionable insights for manufacturing firms looking to optimize their work environments for innovation.

AIM AND OBJECTIVES OF THE STUDY

The aim of the study is to explore the effect of workplace design on individual work behavior. The specific objectives are to:

1. Examine the influence of workplace design on employee creativity.
2. Determine the influence of workplace design onproblem-solving
3. Assess the influence of workplace design on idea implementation.

Research Questions

1. How does workplace design relate with employee creativity?
2. What is the association between workplace design and problem-solving?
3. How does workplace design relate with idea implementation?

Research Hypotheses

Ho_1: There is no significant relationship between workplace design on employee creativity.
Ho_2: There is no significant relationship between workplace design andproblem-solving
Ho_3: There is no significant relationship between workplace design and idea implementation.

THE JOB DEMANDS-RESOURCES (JD-R) MODEL

The **Job Demands-Resources (JD-R) Model**, proposed by Arnold Bakker and Evangelia Demerouti (2007), offers a valuable framework for understanding the impact of workplace design on Innovative Work Behavior (IWB). This model categorizes job characteristics into two types: **job demands**, which require sustained effort and can lead to stress if not managed well, and **job resources**, which help in achieving work goals and promoting personal development. In the context of workplace design, high job resources—such as flexible layouts, effective lighting, and collaborative spaces—can support and enhance IWB by reducing stress and providing the necessary tools for creativity. Conversely, high job demands, like excessive noise or poor ergonomics, can hinder IWB by increasing stress and cognitive overload. Thus, optimizing workplace design according to the JD-R Model can create an environment that reduces demands and increases resources, thereby fostering a supportive atmosphere for innovation.

WORKPLACE DESIGN

Workplace design is vital in shaping employee performance and well-being. Thoughtful design, encompassing spatial layout, lighting, acoustics, and ergonomics, significantly enhances productivity and job satisfaction. Open-plan layouts promote collaboration, while well-designed private spaces support focused work. For instance, ergonomic furniture and adjustable lighting can reduce discomfort and improve concentration (Gou & Zhang, 2021). Additionally, flexible workspaces catering to various work modes, such as collaborative areas and quiet zones, boost efficiency and morale (Kamarulzaman et al., 2020). Beyond functionality, workplace design impacts organizational culture and employee engagement. Incorporating natural light, greenery, and aesthetic elements fosters a positive atmosphere that enhances well-being and creativity (Bodin Danielsson & Theorell, 2019). Effective design aligns with organizational goals, creating a

supportive environment that boosts performance and fosters a sense of belonging (Vischer, 2022). By addressing both practical and psychological needs, organizations can craft spaces that improve work outcomes and satisfaction.

The modern workplace transcends being just a space for tasks, significantly influencing employee creativity and problem-solving abilities. In manufacturing, where innovation and efficiency are critical, workplace design is paramount. Research indicates that elements such as physical layout, lighting, furniture, and technology can either stimulate or inhibit creativity and problem-solving (Dul & Ceylan, 2014).An effective design fosters collaboration, sparks innovation, and enhances well-being, all crucial for productivity and creativity (Sundstrom, 2019). Conversely, poor design can reduce motivation, stifle creativity, and hinder problem-solving, ultimately affecting performance (Knight & Haslam, 2010). For manufacturing firms, where continuous innovation is essential, understanding the impact of workplace design on cognitive processes is crucial.

INNOVATIVE WORK BEHAVIOUR

Innovative Work Behaviour (IWB) encompasses the actions and activities employees undertake to develop, promote, and implement new ideas within an organization. This behaviour is crucial for maintaining competitiveness and driving organizational growth (Scott & Bruce, 1994). IWB includes phases such as idea generation, promotion, and implementation. Employees who engage in high levels of IWB contribute to the creation of novel products, processes, and solutions, which are essential for adapting to market changes and achieving long-term success (Janssen, 2000).

Fostering IWB requires creating an environment that encourages creativity and risk-taking. This can be achieved through supportive leadership, a culture that values innovation, and access to resources that enable experimentation (Anderson et al., 2014). Organizations that recognize and reward innovative efforts motivate employees to continue contributing creative solutions Zhou &However, 2014. By cultivating a culture that supports IWB, companies can enhance their ability to innovate and remain competitive in a rapidly changing marketplace.

Employee Creativity

Employee creativity is the ability to generate original and valuable ideas that contribute to problem-solving and organizational advancement. It is a critical component of innovation and can significantly impact a company's ability to remain competitive (Volery& Tarabashkina, 2021). Creativity in the workplace is fostered by an environment that supports exploration and experimentation, such as through flexible workspaces and a culture that encourages risk-taking and open-mindedness (Gong et al., 2013). When employees are given the freedom to innovate and are supported by their organization, they are more likely to produce creative solutions that drive business success (Zhou & Hoever, 2014).

Creativity in the manufacturing context involves generating novel ideas that can lead to the development of innovative products or the enhancement of existing ones. It also plays a key role in optimizing production processes, reducing waste, and improving efficiency (Anderson, Potočnik, & Zhou, 2014). For example, employees who are encouraged to think creatively can

identify new ways to streamline operations, thereby reducing costs and increasing productivity (Gibson & Gibbs, 2017). This capability is essential in an industry where operational efficiency can be the difference between profitability and loss.

To enhance employee creativity, organizations should implement practices that promote creative thinking, such as brainstorming sessions, cross-disciplinary collaboration, and continuous learning opportunities (Doran & Ryan, 2017). Recognizing and rewarding creative contributions also motivates employees to continue generating new ideas. By creating a supportive environment that values creativity, organizations can unlock their employees' potential and achieve breakthroughs that lead to competitive advantages (Chen et al., 2016).

Problem-Solving

Problem-solving involves identifying, analyzing, and resolving issues to achieve desired outcomes, and is crucial for improving processes and enhancing organizational performance (Chlpeková et al., 2014). Effective problem-solving requires a structured approach, including defining the problem, generating and evaluating potential solutions, and implementing the best option. Strong problem-solving skills are essential for navigating complex work environments and addressing challenges that arise (Adeoye& Jimoh, 2023).Organizations can enhance problem-solving abilities by providing training focused on analytical and critical thinking skills (Kaufman & Sternberg, 2019). Encouraging collaborative problem-solving, where teams work together to address issues, can also lead to more effective solutions. A culture that supports problem-solving and provides necessary resources and tools empowers employees to tackle challenges effectively, improving overall efficiency and fostering continuous improvement (Nonaka & Takeuchi, 1995).

Problem-solving, is crucial for overcoming the day-to-day challenges that arise in manufacturing. Whether it's addressing equipment malfunctions, supply chain disruptions, or quality control issues, employees who are skilled in problem-solving can quickly identify the root causes of issues and implement effective solutions (Mumford, Todd, Higgs, & McIntosh, 2017). This not only minimizes downtime and production delays but also enhances overall organizational resilience.Moreover, fostering a culture of creativity and problem-solving within manufacturing firms can lead to higher employee engagement and job satisfaction. When employees feel that their ideas are valued and that they have the autonomy to address problems, they are more likely to be motivated and committed to their work (Amabile & Pratt, 2016). This, in turn, can lead to lower turnover rates and a more dedicated workforce, further contributing to the firm's long-term success.

Idea Implementation

Idea implementation refers to the process of turning innovative concepts into actionable plans and executing them to achieve tangible results. This process involves several stages, including planning, resource allocation, execution, and monitoring (Klein et al., 2012). Effective idea implementation transforms creative ideas into practical solutions that benefit the organization, such as through new products or improved processes.

To support idea implementation, organizations should establish frameworks and processes that facilitate the transition from idea generation to execution (Chistiakova,2020). This includes providing employees with the necessary resources, tools, and support to carry out their plans. A culture of accountability and feedback helps refine ansd optimize the implementation process. By focusing on effective idea implementation, organizations can ensure that innovative efforts lead to meaningful improvements and maintain a competitive edge.

EMPIRICAL REVIEW

Abun et al.,(2023) investigate the impact of an innovative work environment on employees' innovative work behavior. To enhance the study's scope, relevant literature was reviewed. A descriptive assessment and correlational research design were employed, with the study population comprising all employees from two colleges (DWCL and DWCV). Data were collected using research questionnaires and analyzed using inferential statistics. The findings indicated that both the innovative work environment and employees' innovative work behavior are high, though not exceptionally so. The ANOVA results revealed a significant correlation between the innovative work environment and employees' innovative work behavior. The study recommends that fostering an innovative workplace is essential for cultivating innovative work behavior.

Uranta& Zeb-Obipi, (2024) explored the relationship between worker empowerment—specifically through structural and psychological empowerment—and employees' innovative work behaviors. The study sampled 60 workers from three major multinational oil and gas companies in Port Harcourt. A purposive sampling technique was used to select the companies, while the workers were randomly chosen. Data were gathered using a structured questionnaire and analysed with Kendall's tau-b test statistic. The study concludes that both structural and psychological empowerment are likely to enhance employees' problem-solving abilities and creativity. Based on these findings, it is recommended that multinational oil companies in Port Harcourt implement systems that effectively empower workers both structurally and psychologically. This can be achieved through practices such as effective communication, supporting worker development, involving employees in decision-making, and delegating authority to foster the desired innovative work behaviours within the organization.

Parnitvitidkun et al., (2024), examines the dimensions of innovative work behaviour (IWB) among IT helpdesk support staff using a mixed-method design. Employing a sequential exploratory approach, the research integrates a qualitative literature review and in-depth interviews with a quantitative survey of 440 IT staff members. The study successfully validates and confirms the reliability of an IWB measurement scale. The findings identify eight key dimensions of IWB: opportunity exploration, idea sharing, idea generation, idea implementation, idea organization, idea learning, idea promotion, and idea realization. These dimensions form a robust and reliable scale that organizations can leverage for self-assessment, employee development, and identifying policy-related barriers to fostering innovative work behaviours within the company.

METHODOLOGY

The accessible population for this survey study consisted of 1,740 employees from six selected manufacturing firms in Rivers State. A sample size of 313 was determined using Krejcie and

Morgan's (1970) table. Bowley's (1964) formula was applied to allocate the distribution of questionnaires. Data collection was conducted through a structured questionnaire. The predictor variable, workplace design, was directly linked to the criterion variables, which was measured with innovative work behavior through employee creativity, problem-solving and idea implementation. Responses to the research items were measured on a 4-point Likert scale. The instrument's validity was confirmed using face and content validity, while reliability was assessed with Cronbach's Alpha, adopting a reliability threshold of 0.7. Kendall's tau-b test statistic was employed for data analysis, utilizing SPSS version 25.0.

RESULT AND DISCUSSION

Kendall's tau-b test statistic with the aid of SPSS 25.0 was used in analysing the hypotheses. From the 313(100%) copies distributed, only 275 (87.9%) were retrieved and well filled., 10(3.2%) were discarded for being wrongly filled and 265(84.7%) constitute the valid questionnaire. The hypotheses were tested at a 95% confidence interval, with the decision rule as follows: Reject the null hypothesis if $P \leq 0.05$, Accept the null hypothesis if $P > 0.05$.

Table 1:Workplace Design and Employee Creativity

Correlations

			Workplace Design	Employee Creativity
Kendall's tau_b	Workplace Design	Correlation Coefficient	1.000	.635**
		Sig. (2-tailed)	.	.000
		N	265	265
	Employee Creativity	Correlation Coefficient	.635**	1.000
		Sig. (2-tailed)	.000	.
		N	265	265

**. Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Output, 2024.

The analysis in Table 1 reveals a significant relationship betweenworkplace design and employee creativity with a p-value of 0.000and a correlation value of 0.635

Table 2:Workplace Design and Problem Solving

Correlations

			Workplace Design	Problem Solving
Kendall's tau_b	Workplace Design	Correlation Coefficient	1.000	.697**
		Sig. (2-tailed)	.	.000
		N	265	265
	Problem Solving	Correlation Coefficient	.697**	1.000
		Sig. (2-tailed)	.000	.
		N	265	265

**. Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Output, 2024.

The analysis in Table 2 reveals a significant relationship betweenworkplace design and problem solving with a p-value of 0.000and a correlation value of 0.697

Table 3:Workplace Design and Idea Implementation

Correlations

			Workplace Design	Idea Implementation
Kendall's tau_b	Workplace Design	Correlation Coefficient	1.000	.689**
		Sig. (2-tailed)	.	.000
		N	265	265
	Idea Implementation	Correlation Coefficient	.689**	1.000
		Sig. (2-tailed)	.000	.
		N	265	265

**. Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Output, 2024.

The analysis in Table 3 reveals a significant relationship betweenworkplace design and idea implementationwith a p-value of 0.000and a correlation value of 0.689

Discussion of Findings

WorkplaceDesign and Employee Creativity

The analysis presented in Table 1 demonstrates a significant positive relationship between workplace design and employee creativity, as indicated by Kendall's tau_b correlation coefficient of 0.635 and a p-value of 0.000. This correlation suggests a strong association, where enhancements in workplace design are likely to lead to increased levels of employee creativity. The significance level (p = 0.000) confirms that this relationship is statistically significant, meaning the observed correlation is unlikely to have occurred by chance. The strength of the correlation coefficient (0.635) further emphasizes that workplace design plays a crucial role in fostering creativity among employees.These findings suggest that organizations should prioritize and invest in optimizing workplace design as a strategic approach to enhancing creative output. A well-designed workplace can provide an environment that stimulates creative thinking, encourages innovative problem-solving, and ultimately contributes to the overall innovative work behaviour of employees. This underscores the importance of considering physical and environmental factors in the design and management of workspaces to promote a culture of creativity and innovation within the organization.This result agrees withAbun et al., (2023) that innovative work environment relates with employees' innovative work behavior.

WorkplaceDesign and Problem Solving

The analysis in Table 2 highlights a significant positive relationship between workplace design and problem-solving abilities, as evidenced by Kendall's tau_b correlation coefficient of 0.697 and a

p-value of 0.000. This strong correlation suggests that improvements in workplace design are closely associated with enhanced problem-solving capabilities among employees.The significance level (p = 0.000) indicates that the relationship is statistically significant, meaning the observed correlation is not due to random chance. The correlation coefficient of 0.697 reflects a robust connection, implying that a well-designed workplace can greatly influence employees' ability to tackle and resolve problems effectively. These findings suggest that the physical environment in which employees work plays a critical role in their cognitive processes, particularly in problem-solving. Organizations aiming to improve problem-solving skills among their workforce should consider investing in thoughtful workplace design. This could include creating spaces that facilitate concentration, collaboration, and easy access to resources, all of which can contribute to more efficient and innovative problem-solving. This emphasizes that workplace design is a key factor in fostering problem-solving abilities, and by optimizing the work environment, organizations can significantly enhance the problem-solving performance of their employees.The result aligns withUranta& Zeb-Obipi, (2024) that worker empowerment through structural and psychological empowerment relates with employees' innovative work behaviors.

WorkplaceDesign and Idea Implementation

The analysis presented in Table 3 demonstrates a significant positive relationship between workplace design and idea implementation, as shown by Kendall's tau_b correlation coefficient of 0.689 and a p-value of 0.000. This strong correlation indicates that improvements in workplace design are closely associated with better implementation of ideas by employees. The p-value of 0.000 confirms that this relationship is statistically significant, meaning the likelihood of this correlation occurring by chance is extremely low. The correlation coefficient of 0.689 suggests a robust connection, implying that an optimized workplace design can significantly influence employees' ability to effectively implement ideas. These findings highlight the importance of a well-thought-out workplace design in fostering an environment conducive to not just generating ideas but also bringing those ideas to fruition. A workplace that is designed to support various stages of idea development—from brainstorming and planning to execution—can greatly enhance employees' ability to implement innovative ideas. The study underscores the critical role of workplace design in facilitating idea implementation. Organizations seeking to improve the execution of innovative ideas should consider investing in workplace environments that encourage and support the entire process of idea realization. This can lead to greater innovation and overall organizational success.This conform withChistiakova, 2020) that workplace design which involves providing employees with the necessary resources, tools, and support helps refine and optimize the implementation process and focusing on effective idea implementation ensure that innovative efforts lead to meaningful improvements and maintain a competitive edge

CONCLUSION

The study aimed to explore the impact of workplace design on individual work behavior, focusing on three specific aspects: employee creativity, problem-solving, and idea implementation. The findings reveal that workplace design plays a significant role in influencing these behaviors. Specifically, there is a strong positive relationship between an optimized workplace design and enhanced employee creativity, problem-solving abilities, and effective idea implementation. The

results suggest that a well-designed workplace is not just a physical space but a strategic tool that can significantly boost the innovative capacities of employees.

RECOMMENDATIONS

1. Organizations should prioritize the design of workspaces that stimulate creativity. This can be achieved by creating environments that offer flexibility, incorporate natural elements, and provide areas for brainstorming and collaborative work. Spaces that allow for both focused individual work and team collaboration can enhance creative thinking and innovation.
2. To improve problem-solving capabilities, organizations should design work environments that reduce distractions and provide easy access to necessary resources and tools. Incorporating spaces that encourage collaboration and allow for quick, informal discussions can also help employees tackle problems more efficiently.
3. Organizations should focus on creating workspaces that support the entire process of idea development and implementation. This includes areas for planning, prototyping, and testing new ideas. Additionally, providing spaces that foster open communication and teamwork can help ensure that ideas are not only generated but effectively executed.

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