

Workplace interaction as a pathway from Open-Plan office design to employee performance: Insights from Self-Determination Theory

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Abstract

This study investigates the effects of open-plan office (OPO) design on employee performance, focusing on the mediating role of workplace interaction and the moderating influence of job autonomy, a core component of Self-Determination Theory (SDT). Using a quantitative approach, data were collected from 107 employees working in open-plan offices in Quebec, Canada, were recruited through convenience sampling, and analyzed using partial least squares structural equation modeling (PLS-SEM). The findings show that OPO design significantly enhances workplace interaction and directly improves employee performance. Workplace interaction also positively influences performance and partially mediates the relationship between OPO design and performance. Job autonomy further enhances performance and strengthens the positive relationship between workplace interaction and performance, indicating that employees with greater autonomy derive greater performance benefits from workplace interactions. Based on these findings, the study proposes the Integrated Workplace Interaction and Autonomy Framework (IWIAF), which conceptualizes employee performance as an outcome of the interaction among physical workplace conditions, social processes, and psychological resources. The framework provides a theoretical basis for understanding how workplace design, social interaction, and motivational resources jointly shape employee outcomes. Practically, the findings offer guidance for designing work environments that support both interaction and employee autonomy. Overall, the study demonstrates that performance in open-plan offices is shaped not only by physical workspace characteristics but also by the social and motivational mechanisms through which employees experience and utilize their work environment.

Keywords: Open-Plan Offices, Workplace Interaction, Job Autonomy, Employee Performance, Self-Determination Theory

JEL Classification: M54, M50, M12

1. Introduction

The design of workplaces has been recognized for decades as a critical factor influencing employee behavior, well-being, and performance (Shuaibu et al., 2025; Kim & de Dear, 2013). Among various office layouts, open-plan office (OPO) has gained popularity, especially since the 2000s with the development of information technology, largely due to their potential to increase collaboration, flexibility, and productivity in the workplace (Bernstein & Turban, 2018). However, empirical evidence on the effectiveness of OPO remains conflicting. While some studies show that open-plan workspaces facilitate social interaction and knowledge sharing, others suggest that they may compromise focus and task performance due to increased noise, visual distractions, and lack of privacy (Brennan et al., 2002; Kim et al., 2016). This ambiguity highlights the need to better understand the mechanisms through which OPO influence employee outcomes. A promising avenue for explaining this relationship is workplace interaction, defined as the frequency and quality of social exchanges between employees in the workplace (Oldham & Brass, 1979). This includes all professional and social interactions in the workplace, from task-focused meetings and collaborative projects to informal conversations in the hallway (Matic et al., 2014; Campbell & Campbell, 1988). OPOs are designed to encourage engagement by removing physical barriers, but the extent to which these interactions lead to improved performance likely depends on organizational and individual factors. Not all social exchanges are productive; excessive interruptions or superficial interactions may hinder task focus and performance (Jönsson & Karlsson, 2025). Therefore, examining workplace interaction as a mediator provides a more nuanced understanding of how employee outcomes are shaped by the physical design of the office. However, environmental and social factors alone may not fully explain how employees respond to open-plan work environments, making psychological factors an important complement to these perspectives.

Self-determination theory (SDT) provides a robust theoretical framework for understanding how psychological resources influence employees' responses to work environments (Deci & Ryan, 2000). SDT identifies autonomy, competence, and relatedness as three fundamental psychological needs (Deci & Ryan, 2000) that contribute to motivation and effective performance. Among these dimensions, autonomy is particularly important in the context of open-plan offices because it reflects employees' perceived control over their work activities and decisions (Hackman & Oldham, 1976; Deci et al., 2000). Employees who experience greater autonomy are more likely to effectively adapt to workplace conditions, manage environmental demands, and utilize workplace resources to support their performance (Deci & Ryan, 2000; Gagne & Deci, 2005). Thus, this study

focuses on autonomy as the component of SDT that is most directly related to employees' experiences in open-plan office environments.

Despite the increasing popularity of open-plan offices in contemporary organizations, relatively few studies have simultaneously investigated the environmental, social, and motivational factors that shape employee performance in such workplace settings. Most previous studies (e.g., Jönsson & Karlsson, 2025; Davis, 2020; Haapakangas et al., 2018) have focused either on workspace characteristics or on employee outcomes, without fully explaining the mechanisms through which office design affects performance and the conditions under which these effects are stronger or weaker. In particular, the mediating role of workplace interaction and the impact of autonomy as a component of SDT have not been adequately explored within a single framework.

Accordingly, in this research we examine the relationship between open-plan office design and employee performance, considering workplace interaction acting as a mediating mechanism and autonomy as a moderating factor. Hence, by integrating environmental, behavioral, and motivational perspectives, this paper provides a more comprehensive understanding of how office design supports or hinders employee performance in contemporary organizations. Specifically, it examines whether workplace interaction explains how open-plan office design affects employee performance through workplace interaction and whether employees' perceived autonomy moderates the relationship between open-plan office design and performance.

The findings are expected to contribute to both theory and practice. From a theoretical perspective, the study advances workplace design research by integrating insights from Self-Determination Theory into the examination of open-plan office environments and by considering the mediating role of workplace interaction. In addition, from a practical perspective, the findings can inform office design decisions and managerial practices aimed at fostering effective collaboration, supporting employee autonomy, and enhancing workplace performance. By simultaneously considering environmental, social, and psychological factors, this study provides a more comprehensive understanding of employee effectiveness in contemporary work environments.

2. Theoretical Background

2.1. Open-Plan Office Design

Workplace design, in general, has a profound impact on employee behavior, communication patterns, and overall performance. As mentioned, among various office layouts, open-plan office has become increasingly popular in contemporary organizations due to their potential to enhance collaboration, flexibility, and efficient use of space (Abirami, 2024; Bernstein & Turban, 2018). OPO is characterized by minimal physical barriers, shared workstations, and open communication channels that are designed to facilitate communication, collaboration, and knowledge sharing among employees (Poncelet et al., 2025; Bernstein & Turban, 2018).

Research (e.g., Ramantswana et al., 2024; Muzaffar et al., 2020; Kim & de Dear, 2013; Oldham & Brass, 1979) shows that OPO can enhance workplace interaction by increasing employee visibility and reducing physical separation. The removal of partitions and the creation of shared workspaces encourage spontaneous conversations, collaboration, and information exchange among colleagues (Oldham & Brass, 1979; Kim & de Dear, 2013). Open-plan office is typically defined as work environments in which employees work in shared spaces with minimal physical barriers such as walls or enclosed offices, allowing for high visual and physical accessibility among coworkers (Salehi et al., 2025). Through these interactions, employees may develop stronger social connections, improve coordination, and contribute more effectively to organizational learning and knowledge sharing.

Despite the benefits that have been proposed for these offices, empirical studies (Kim & de Dear, 2013; De Croon et al., 2005; Brennan et al., 2002) have also identified potential challenges associated with OPO. Increased exposure to noise, visual distractions, interruptions, and reduced privacy may negatively impact concentration and task performance, particularly in tasks that require sustained attention and complex cognitive processing (Brennan et al., 2002; Haapakangas et al., 2018). As a result, the effectiveness of open-plan environments remains a topic of debate among researchers, and there is evidence that their impact depends on how employees experience and use the workspace.

Overall, open-plan office design is an important environmental factor that can directly and indirectly affect employee outcomes. Directly, physical features such as spatial layout, visibility, ergonomics, and environmental comfort may affect employees' ability to perform their tasks effectively (Vischer, 2007; De Croon et al., 2005). Indirectly, OPO creates opportunities for workplace interaction by facilitating communication and collaboration between employees (Oldham & Brass, 1979; Allen, 1984). Accordingly, understanding the role of workplace interaction is essential to explaining how office design affects employee performance.

2.2. Workplace Interaction

Workplace interaction refers to the frequency, quality, and meaningfulness of social exchanges between employees in a work environment (Oldham & Brass, 1979). It includes verbal and nonverbal communication, collaboration, and everyday relationships between employees and management (Keyton, 2010; Kraut et al., 1990). In organizational settings, these types of interactions can include informal conversations, collaborative problem solving, knowledge sharing, and feedback exchange. The quality of these interactions often determines whether they contribute positively to performance outcomes or create distractions that reduce efficiency (Hapaakangas et al., 2018).

Open-plan office design facilitates increased interaction by reducing physical barriers and increasing proximity between employees. Open layouts allow for spontaneous conversations and easier access to colleagues, which can foster collaboration, creativity, and collective problem

solving (Kim & De Dear, 2013; Bernstein & Turban, 2018). As a result, employees working in OPO environments are more likely to engage in interactions that support coordination, learning, and the exchange of work-related information. However, studies show not all interactions are beneficial. Excessive, unstructured, or superficial interactions may disrupt workflow, reduce employees' concentration, and lead to stress or cognitive overload (Yadav et al., 2017; Brennan et al., 2002). Therefore, workplace interaction can act as a two-way mechanism, and its impact on performance depends on its quality, timing, and management within the work context.

2.3. Self-Determination Theory and Autonomy

Self-Determination Theory, developed by Deci and Ryan (2000), is one of the most important psychological theories on human motivation and personality. It states that humans are inherently motivated to grow, learn, and integrate new experiences and that in order to flourish, three basic psychological needs must be met: autonomy, competence, and relatedness (Ryan & Deci, 2000). These needs are essential for promoting intrinsic motivation, psychological well-being, and optimal performance in various domains of life, including the workplace. In organizational contexts, SDT has been widely used to explain how social and environmental conditions influence employee motivation and work-related outcomes (Gagné & Deci, 2005). This framework has been extensively applied to understand employee behavior across diverse organizational environments.

Of the three needs proposed by SDT, autonomy is particularly relevant in understanding employee responses to work environments. Autonomy refers to the experience of volition and an understanding of the origins of one's actions (Kirzner & Miserandino, 2023; Niemiec & Ryan, 2009). It reflects the extent to which individuals feel that their behavior is approved by themselves rather than externally controlled. In the workplace, autonomy is expressed through employees' perceived freedom to organize tasks, make decisions, and choose work methods (Ryan & Deci, 2000). Organizations can support autonomy by providing employees with authority, encouraging initiative, and reducing overly controlling management practices (Manganelli et al., 2018; Slemp et al., 2018). Such autonomy-supportive practices are associated with more self-determined forms of motivation and improved workplace functioning.

Empirical research has consistently demonstrated the positive role of autonomy in shaping workplace outcomes. For example, organizational environments that support autonomy increase psychological need satisfaction, which in turn improves employees' emotional well-being and creative performance (Ye et al., 2025). Similarly, McAnally (2024) found that autonomy is positively associated with desirable outcomes such as work engagement, job performance, and job satisfaction, while it is negatively associated with stress and burnout. These findings suggest that autonomy serves as an important psychological resource that enables employees to better regulate their work behavior and respond effectively to the demands of the workplace.

In the context of this study, autonomy is conceptualized as an individual-level psychological resource that may shape how employees respond to environmental conditions in open-plan office.

Rather than directly determining performance, autonomy is expected to influence the strength of the relationship between open-plan office design and employee performance, reflecting its role as a boundary condition in the proposed model.

2.4. Employee Performance

Employee performance is a multidimensional construct that encompasses the effectiveness, quality, and efficiency of an individual's work-related behaviors and outcomes in an organizational setting (Motowidlo et al., 2014). It can be defined as the level of quality and quantity of work that an employee achieves while performing their assigned responsibilities (Armstrong, 2009). In other words, employee performance is how well an employee performs their job duties, achieves goals, and contributes to the success of their organization (Salehi et al., 2025; Koopmans et al., 2014). High performance is often associated with achieving organizational goals, demonstrating proficiency in performing tasks, and contributing to team and organizational success (Sonnentag & Frese, 2002). In contemporary workplaces, employee performance is influenced by individual factors such as skills and motivation and environmental factors, including office design, social interactions, and managerial support (Vischer, 2007; Humphrey et al., 2007).

By promoting workplace interaction, open-plan office is designed to facilitate knowledge sharing, collaboration, and informal learning, all of which can enhance task performance (Kim & de Dear, 2013; Bernstein & Turban, 2018). However, the extent to which these interactions lead to improved performance may depend on employees' ability to manage distractions, regulate attention, and effectively utilize social exchanges. This is consistent with the notion that performance is context-dependent and results from the interaction between individual capabilities and environmental amenities (Bakker & Demerouti, 2013). The mediating role of workplace interaction suggests that the physical environment does not directly lead to improved performance; rather, performance benefits emerge when interactions are frequent, meaningful, and appropriately managed. In this study, employee performance is conceptualized as the dependent variable that is affected by open-plan office design, either directly or indirectly through workplace interaction.

Furthermore, employees' perceptions of autonomy are expected to play an important role in shaping how environmental conditions translate into performance outcomes. Specifically, autonomy is proposed as a moderating factor in the relationship between open-plan office design and employee performance. Employees who perceive higher levels of autonomy are more likely to effectively manage environmental demands such as noise, interruptions, and open space, thereby translating open-plan office facilities into improved performance outcomes. Conversely, lower levels of perceived autonomy may reduce employees' ability to regulate their work processes in such environments, potentially undermining the positive effects of office design on performance.

2.5. Integrative Model and Hypotheses

Open-plan office design shapes the physical and social environment in which employees perform their work. As mentioned, OPOs encourages communication, knowledge sharing, and collaboration among employees by reducing physical barriers and creating shared workspaces (Bernstein & Turban, 2018; Kim & de Dear, 2013). As employees interact more and exchange information more effectively, workplace interaction can facilitate coordination, learning, and problem-solving activities that contribute to improved performance. Thus, OPO design is expected to positively influence workplace interaction, which in turn contributes to employee performance. At the same time, open-plan office environments are expected to directly influence employee performance. Features such as workspace adequacy, ergonomic comfort, visibility, lighting, and environmental conditions can influence employees' ability to focus, perform tasks effectively, and maintain well-being (Vischer, 2007, 2011; Brennan et al., 2002). As a result, a positive relationship between OPO design and employee performance can be envisioned beyond its influence through workplace interaction.

According to Self-Determination Theory (Deci & Ryan, 2000), autonomy is an important psychological resource that enables employees to regulate their work activities and respond effectively to workplace demands. Employees who perceive greater autonomy are generally more motivated, engaged, and capable of organizing their work effectively, which can contribute directly to higher levels of performance. In addition, employees who perceive greater autonomy are more likely to manage workplace interactions strategically, balance collaborative activities with task requirements, and benefit from knowledge-sharing opportunities. Consequently, autonomy is expected to strengthen the positive effect of workplace interaction on employee performance, reflecting its role as a moderating variable in the proposed model. Based on these arguments, the following hypotheses are proposed:

H1: Open-plan office design is positively related to workplace interaction.

H2: Workplace interaction is positively related to employee performance.

H3: Open-plan office design is positively related to employee performance.

H4: Job autonomy is positively related to employee performance.

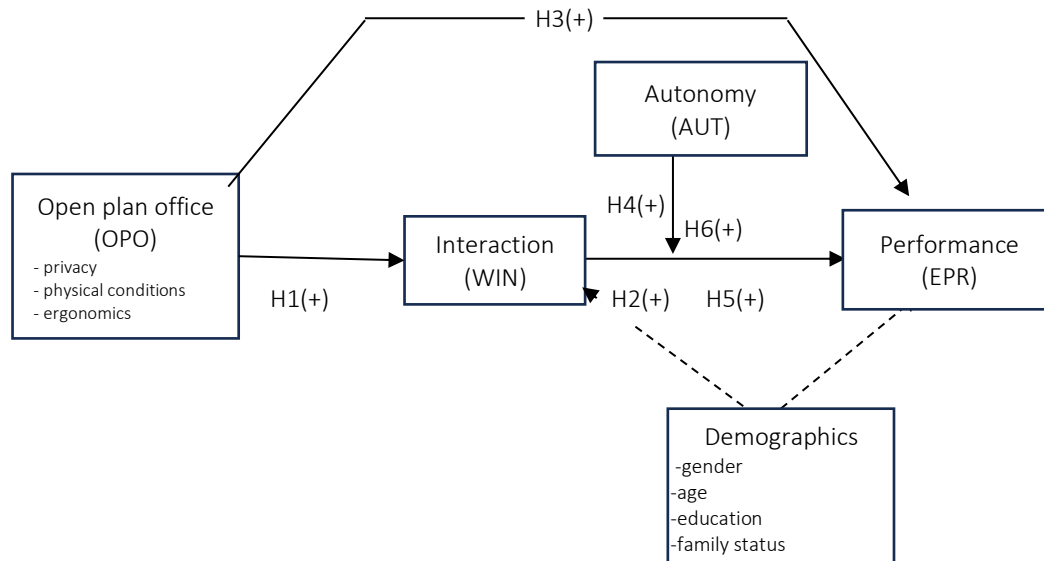
H5: Workplace interaction mediates the relationship between open-plan office design and employee performance.

H6: Job autonomy moderates the relationship between workplace interaction and employee performance.

Figure 1 shows the proposed model of the study. Open-plan office design serves as the independent variable, employee performance as the dependent variable, workplace interaction as the mediating mechanism, and job autonomy as both a direct predictor of employee performance and a

moderating factor in the relationship between workplace interaction and employee performance. Age, gender, education level, and family status are included as control variables to account for potential demographic effects on employee performance.

Figure 1. The Proposed Research Model



3. Research Methodology

3.1. Research Design, Population, and Samples

This study used a quantitative, cross-sectional research design to examine employees' experiences in open-plan office environments. The target population consisted of employees working in open-plan office environments in organizations located in the province of Quebec, Canada. As previously mentioned, open-plan office is workspace characterized by limited physical partitions, shared work areas, and increased opportunities for communication and collaboration between employees. Therefore, to be eligible for inclusion, respondents were those who regularly worked in an open-plan office environment.

Data were collected through an online survey conducted using Google Forms. The questionnaire consisted of two sections. The first section gathered demographic information, including age, gender, education level, and family status. The second section measured the study constructs: open-plan office design, workplace interaction, job autonomy, and employee performance. Due to the practical difficulty of obtaining a comprehensive sampling frame from employees working in open-plan office in different organizations, a convenience sampling approach was used. A total of 107 valid responses were obtained and retained for analysis.

Although the sample size is relatively small, partial least squares structural equation modeling (PLS-SEM) was chosen as the analytical method because it is suitable for exploratory and predictive research involving complex models and small sample sizes (Ringle et al., 2020; Hair et al., 2019). Furthermore, the sample exceeded the minimum requirements suggested by the PLS-SEM literature for estimating models with mediating and moderating effects. Nevertheless, the researchers attempted to interpret the findings with appropriate caution and to be careful about their generalizability to the context. Accordingly, future studies using larger and more diverse samples are encouraged to validate and extend the current findings.

Participation in this study was voluntary. Before completing the questionnaire, respondents were informed about the purpose of the research, the voluntary nature of participation, and the confidentiality of their responses. Informed consent was obtained electronically, and no personally identifiable information was collected. All responses were used exclusively for academic research purposes and were prepared in accordance with ethical research standards.

3.2. Measures

The measurement instruments used in this study were derived from both the qualitative phase of the research and validated scales from prior studies. Open-plan office design was measured using eight items developed from the qualitative phase of the study and informed by previous workplace design research (Lee & Brand, 2005). The items assessed employees' perceptions of key environmental characteristics, including visibility, privacy, workspace adequacy, ergonomic conditions, and overall physical comfort.

Workplace interaction was measured using five items adapted from Kim and de Dear (2013) and Bernstein and Turban (2018). These items captured the frequency and quality of communication, collaboration, and information exchange among employees within open-plan office environments. In addition, job autonomy, representing the Self-Determination Theory component incorporated in this study, was measured using five items adapted from Manganelli et al. (2018), Slemp et al. (2018), and Martela et al. (2018). The items assessed employees' perceived freedom, discretion, and control over how they organize and perform their work.

Finally, employee performance was measured using four items adapted from the Individual Work Performance Questionnaire (Koopmans et al., 2014) and established measures of in-role performance (Williams & Anderson, 1991). These items evaluated respondents' perceived effectiveness, quality of work, and contribution to organizational objectives. All constructs were assessed using seven-point Likert-type scales ranging from 1 (strongly disagree) to 7 (strongly agree), with higher scores indicating stronger agreement with the statements.

3.3. Data Analysis Procedures

Data analysis was conducted using SPSS 27 and SmartPLS 4.0 software. Descriptive statistics and correlation analyses were first performed using SPSS 27 to examine the characteristics of the

sample and the relationships among the study variables. The proposed research model was then tested using Partial Least Squares Structural Equation Modeling (PLS-SEM). It was selected because PLS-SEM is appropriate for prediction-oriented research, complex models incorporating mediation and moderation effects, and studies with small sample sizes (Ringle et al., 2020; Hair et al., 2019). Given the exploratory nature of the proposed framework, this approach was considered suitable for the objectives of the study.

Following established PLS-SEM procedures, the analysis was conducted in two stages. First, the measurement model was assessed by examining indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. Second, the structural model was evaluated through the assessment of path coefficients, coefficients of determination (R^2), effect sizes (f^2), and predictive relevance (Q^2). The significance of the hypothesized relationships was assessed using a bootstrapping procedure with 5,000 resamples. The mediating effect of workplace interaction was examined through the assessment of indirect effects. In addition, the moderating effect of job autonomy was tested by creating an interaction term between open-plan office design and job autonomy ($OPO \times \text{Autonomy}$) and evaluating its effect on employee performance. Finally, age, gender, education level, and family status were included as control variables in the analysis.

4. Results

4.1. Demographic Characteristics

Table 1 summarizes the demographic characteristics of the respondents. The sample was predominantly female (67.3%), with males representing 32.7%. Regarding age, most participants were between 21 and 60 years, with the largest groups in the 41–50 (32.7%) and 51–60 (26.2%) brackets, and smaller proportions in the 21–30, 31–40, and over 60 categories. In terms of education, the majority had completed university-level studies (67.3%), while 28.1% had a college education, and 4.7% had secondary education. Concerning family status, 41.1% of respondents were married with children, 23.4% married without children, 21.5% single without children, 6.5% single with children, and 7.5% reported other family arrangements.

Table 1. The Participants Demographics (N=107)

Characteristic		N	%
Gender	Female	72	67.3
	Male	35	32.7
Age	< 21	-	-
	21 to 30	11	10.3

	Characteristic	N	%
	31 to 40	24	22.4
	41 to 50	35	32.7
	51 to 60	28	26.2
	> 60	9	8.4
	Secondary	5	4.67
Education	College	30	28.1
	University	72	67.3
	Single without child	23	21.5
Family status	Single with child	7	6.54
	Married without child	25	23.4
	Married with child	44	41.1
	Others	8	7.47

Note: Gender was coded as a binary variable (1=male and 2=female). Age was measured in six categories. So, higher scores indicate older age. Education measured in five categories. Higher scores indicate higher education level. Family status was coded as a binary variable (1= Single without child, 2= Single with child, 3= Married without child, 4= Married with child).

4.2. Descriptive Statistics and Correlations

To provide an initial overview of the data, descriptive statistics and correlations were computed for the main constructs, including open-plan office design, workplace interaction, job autonomy, and employee performance. These analyses summarize the central tendencies, variability, and bivariate relationships, allowing for an initial assessment of patterns in the data.

Table 2 presents the means, standard deviations, and correlations among the study variables. Overall, respondents reported moderately high levels of open-plan office conditions (M = 5.21,

SD = 1.10), workplace interaction (M = 5.01, SD = 1.15), autonomy (M = 4.95, SD = 1.20), and employee performance (M = 5.11, SD = 1.05).

Table 2. Descriptive Statistics and Correlations of Main Constructs

Construct	Mean	SD	1	2	3	4
1. open plan office (OPO)	5.21	1.10	1			
2. workplace interaction	5.01	1.15	.663**	1		
3. job autonomy	4.95	1.20	.324**	.363**	1	
4. employee performance	5.11	1.05	.461**	.380**	.405**	1

Note: **Correlation is significant at the .01 level (2-tailed). *Correlation is significant at the .05 level (2-tailed).

As shown in the table, OPO design was positively and significantly correlated with workplace interaction ($r = .663$, $p < .01$), autonomy ($r = .324$, $p < .01$), and employee performance ($r = .461$, $p < .01$). Workplace interaction was also positively associated with autonomy ($r = .363$, $p < .01$) and employee performance ($r = .380$, $p < .01$). Furthermore, autonomy demonstrated a positive and significant correlation with employee performance ($r = .405$, $p < .01$). As a result, all correlations were positive and in the expected direction, providing preliminary support for the proposed relationships among the study variables. In addition, none of the correlations exceeded the recommended threshold of .80, suggesting that multicollinearity was not a significant concern at the bivariate level.

4.3. Measurement Model Assessment

Before testing the structural model, the measurement model was assessed to ensure that all constructs and their indicators demonstrated adequate reliability and validity. This step is essential in Partial Least Squares Structural Equation Modeling to confirm that the latent constructs are accurately measured and suitable for examining hypothesized relationships. Table 3 presents the detailed results of the measurement model, including indicator loadings, Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE).

According to Table 3 and Figure 2, all indicator loadings exceeded the minimum acceptable threshold of 0.40 recommended for exploratory and predictive PLS-SEM research (Hair et al., 2019).

Table 3. Measurement Model Assessment: Reliability and Validity

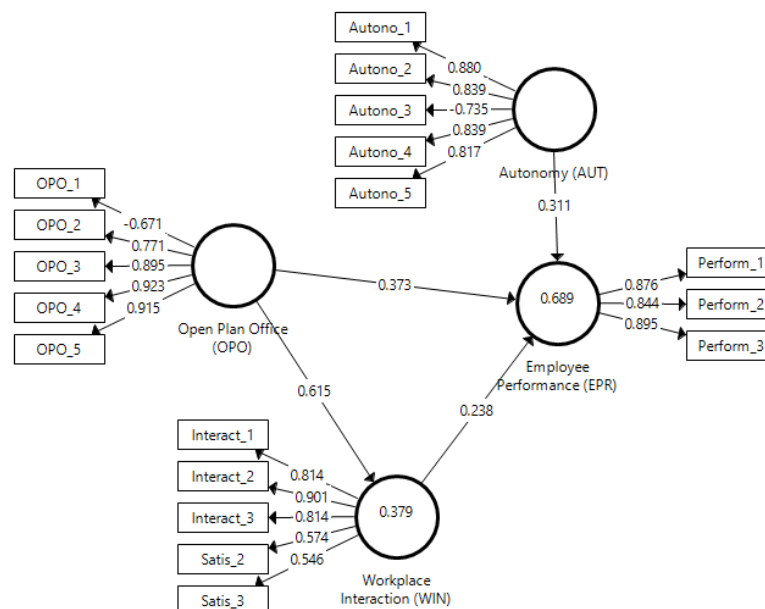
Construct	Codes	Item Text	Loading	Cronbach's α	CR	AVE
Open office plan	OPO1	I feel like people are watching what I do	-.671	.851	.812	.678
	OPO2	People interrupt me when I am on the phone or in a virtual meeting	.771			
	OPO3	I have enough space to work and move around	.895			
	OPO4	The seat and desk height are comfortable enough for me	.923			
	OPO5	Too much or little light and temperature that is high/ low prevents me from working well	.915			
Workplace interaction	WIN_1	The OPO space by using high-tech is useful for expanding my network of friendly acquaintances	.814	.843	.905	.760
	WIN_2	The OPO space is useful for expanding my network of professional relationships	.901			
	WIN_3	The OPO space is useful for sharing my knowledge with others	.814			
	WIN_4	The OPO space helps to improve my work and employment prospects	.574			
	WIN_5	The OPO space contributes to improving exchanges promoting new ideas, creativity or innovation in teamwork	.546			
Autonomy	AUT_1	When I am here, I feel a sense of freedom and choice in the activities I undertake	.880	.861	.845	.707
	AUT_2	Being in this workspace puts me in touch with meaning of my work	.839			
	AUT_3	When I am in this workplace, I feel that I can be completely myself	.735			
	AUT_4	I feel a great sense of autonomy when I work here	.839			
	AUT_5	This workplace significantly increases my confidence in my abilities to do my job well	.817			
Employee performance	EPR_1	I would rate the quality of my work in the workplace	.876	.799	.856	.553
	EPR_2	I would rate my productivity in the workplace	.844			
	EPR_3	Working in this space helps me to manage conflict and promote teamwork with my colleagues	.895			

Note: Loadings $\geq .40$ are considered acceptable for indicator reliability in exploratory PLS-SEM models; loadings $\geq .70$ indicate strong indicator reliability (Hair et al., 2019). Cronbach's α and CR $\geq .7$ indicate acceptable internal consistency. AVE $\geq .5$ indicates sufficient convergent validity.

Although two workplace interaction indicators (WIN_4 =.574 and WIN_5 =.546) exhibited loadings below the preferred threshold of .70, they were retained because the construct demonstrated satisfactory internal consistency reliability (CR =.905) and convergent validity (AVE =.760). Therefore, retaining these indicators did not compromise the psychometric quality of the measurement model.

It should also be noted that OPO1 exhibited a negative loading (-.671) because the item was reverse-worded and reverse-coded prior to analysis. The negative loading is therefore consistent with the direction of the construct and does not indicate a measurement problem. The Cronbach's alpha values ranged from .799 to .861, while composite reliability (CR) values ranged from .812 to .905, exceeding the recommended threshold of .70 and confirming satisfactory internal consistency reliability. Furthermore, the average variance extracted (AVE) values ranged from .553 to .760, all above the recommended benchmark of .50 (Fornell & Larcker, 1981), indicating adequate convergent validity. Thus, these results confirm that the measurement model demonstrates acceptable levels of reliability and convergent validity, supporting the suitability of the constructs for structural model assessment. Figure 2 presents the standardized indicator loadings and path estimates obtained from SmartPLS.

Figure 2. Path Estimates



In addition, discriminant validity was assessed using both the Fornell–Larcker criterion and the Heterotrait–Monotrait (HTMT) ratio of correlations (Table 4). The Fornell–Larcker criterion evaluates whether a construct shares more variance with its own indicators than with other

constructs, while the HTMT ratio provides a more stringent assessment of construct distinctiveness.

Table 4. Discriminant Validity (Fornell-Larcker Criterion)

Construct	Fornell–Larcker criterion				(HTMT) ratio			
	OPO	WIN	AUT	EPR	OPO	WIN	AUT	EPR
1. open plan office (OPO)	.823				-			
2. workplace interaction	.774	.872			.709			
3. job autonomy	.790	.765	.841		.738	.764		
4. employee performance	.708	.687	.615	.743	.813	.783	.680	-

Note: Values of HTMT below 0.85 (Henseler et al., 2015) indicate that discriminant validity is satisfactorily established.

The Fornell–Larcker analysis shows that the square roots of the AVE values (presented on the diagonal) exceed the corresponding inter-construct correlations, indicating that each construct shares greater variance with its own indicators than with other latent variables. This finding supports adequate discriminant validity according to the traditional criterion. Furthermore, all HTMT values were below the recommended threshold of .85 (Henseler et al., 2015), providing further evidence that the constructs are empirically distinct. Collectively, these results confirm that open plan office design, workplace interaction, autonomy, and employee performance represent separate conceptual constructs and satisfy established standards of discriminant validity. Hence, the measurement model demonstrates satisfactory psychometric properties and is appropriate for subsequent structural model analysis.

4.4. Model Fit Statistics for the Structural Model

Before testing the hypothesized relationships, the overall model fit was evaluated to determine how well the proposed structural model represents the observed data. In this study, several key model fit indices were examined, including the Standardized Root Mean Square Residual (SRMR), the squared Euclidean distance (d_{ULS}), the geodesic discrepancy (d_G), the Chi-square statistic, and the Normed Fit Index (NFI). The results of these indices are summarized in Table 5. As the table indicates, the standardized root mean square residual (SRMR) for the estimated model is 0.080, which is at the recommended threshold for acceptable fit (≤ 0.08 ; Henseler et al., 2015), suggesting that the model adequately reproduces the observed correlations. The d_{ULS} (1.637) and d_G (.594) values for the estimated model are close to those of the saturated model (1.177 and

.547, respectively), indicating that the proposed model does not substantially deviate from the empirical correlation structure.

Table 5. Model Fit Statistics for the Structural Model

Dependent Variable	Saturated model	Estimated model
SRMR	.083	.080
d_ ULS	1.177	1.637
d_ G	0.547	0.594
Chi-Square	305.603	317.314
NFI	.787	.810

The Chi-square value (317.314) and Normed Fit Index (NFI =.810) further support the adequacy of the model. The NFI value exceeds the 0.80 guideline commonly reported in PLS-SEM studies (Hair et al., 2014), indicating an acceptable level of fit. Accordingly, these fit indices suggest that the proposed structural model is consistent with the observed data and does not exhibit signs of major model misspecification. Hence, the model is considered suitable for subsequent hypothesis testing and interpretation of structural relationships.

4.5. Path Analysis and Hypotheses Testing

After establishing the reliability and validity of the measurement model, the structural model was evaluated to test the hypothesized relationships among constructs. Path coefficients (β), significance levels, and effect sizes (f^2) were estimated using bootstrapping with 5,000 resamples in SmartPLS 4.0. The explanatory power of the endogenous variable, employee performance, was assessed using R^2 , while predictive relevance was evaluated using Q^2 . Table 6 and Figure 3 presents the results of the structural model, including direct effects, indirect effects, and the moderation effect of autonomy. According to Table 6 and Figure 3, the structural model results indicate that open-plan office design has a significant positive effect on workplace interaction (WIN) ($\beta = .636$, $t = 2.789$, $p = .005$), supporting H1. This finding suggests that open and shared workspace configurations facilitate greater employee interaction by increasing proximity and opportunities for informal communication. Workplace interaction (WIN) also has a significant positive effect on employee performance (EPR) ($\beta = 0.277$, $t = 3.476$, $p < .001$), supporting H2. This result indicates that higher levels of interaction among employees are associated with improved employee's performance outcomes, likely through enhanced coordination, knowledge sharing, and collaborative problem-solving.

Table 6. Path Coefficients, Significance, Effect Sizes, and Hypothesis Testing

Hypothesis	Path	β (path Coefficient)	t- value s	p- value s	f ²	95% CI (LL– UL)	Result
H1	OPO → WIN	.636	2.789	.005	.16	-	Supported
H2	WIN → EPR	.277	3.476	<.001	.09	-	Supported
H3	OPO → EPR	.361	9.217	<.001	.18	-	Supported
H4	AUT → EPR	.285	2.699	.007	.09	-	Supported
H5	OPO → WIN → EPR	.176	3.121	.002	.05	(.078,.2 92)	Supported (partial)
H6	WIN × AUT → EPR	.153	3.013	0.001	0.0 4	(.064,.2 41)	Supported

Note: R² (Employee Performance) = .48 → moderate explanatory power. Q² (Employee Performance) = 0.32 → the model has good predictive relevance. Indirect effect confidence intervals obtained via bootstrapping with 5,000 resamples. CI (LL–UL) = 95% Confidence Interval (Lower Limit – Upper Limit)

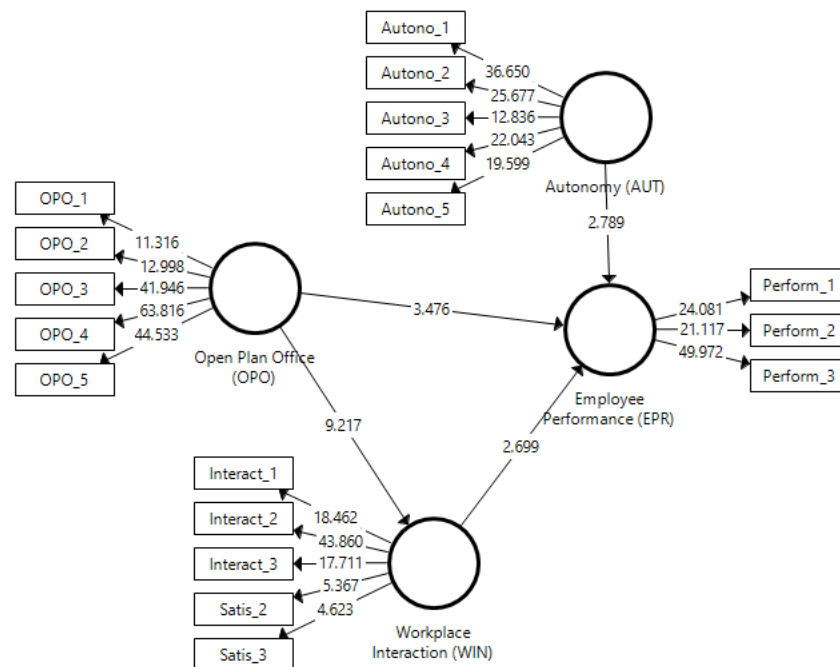
In addition, OPO design has a significant direct effect on employee performance ($\beta = .361$, $t = 9.217$, $p < .001$), supporting H3. This suggests that beyond social mechanisms, physical and environmental features of open-plan office also directly contribute to employee effectiveness, potentially through improved accessibility and workspace conditions. Job autonomy (AUT) also shows a significant positive effect on employee performance ($\beta = .285$, $t = 2.699$, $p = .007$), supporting H4. This indicates that employees who experience greater autonomy in their work tend to report higher performance, consistent with Self-Determination Theory.

The mediation analysis further reveals that workplace interaction significantly mediates the relationship between OPO design and employee performance ($\beta = .176$, $t = 3.121$, $p = .002$), supporting H5. This indicates partial mediation, meaning that OPO influences performance both directly and indirectly through interaction. Importantly, the interaction effect between workplace interaction and autonomy on employee performance (WIN × AUT → EPR) is also significant ($\beta = .153$, $t = 3.013$, $p = .001$), supporting H6. This finding indicates that autonomy strengthens the positive relationship between workplace interaction and employee performance, such that

employees with higher autonomy benefit more from workplace interactions in terms of performance outcomes.

Overall, the model explains a moderate proportion of variance in employee performance ($R^2 = .48$), indicating satisfactory explanatory power. The results also demonstrate good predictive relevance ($Q^2 = .32$), confirming the model's ability to predict employee performance effectively. In addition to statistical significance, the effect sizes (f^2) indicate that open-plan office design exerted the strongest effects on both workplace interaction ($f^2 = .16$) and employee performance ($f^2 = .18$), representing small-to-moderate practical effects. Workplace interaction ($f^2 = .09$), autonomy ($f^2 = .09$), and the interaction effect between workplace interaction and autonomy ($f^2 = .04$) demonstrated smaller but meaningful contributions to employee performance. Furthermore, the bootstrapped 95% confidence interval for the indirect effect of open-plan office design on employee performance through workplace interaction did not include zero (95% CI = [.078, .292]), providing additional support for the mediating role of workplace interaction.

Figure 3. Path Significant Results



To examine the potential influence of demographic factors, control variables including age, gender, education, and family status were incorporated into the model. As shown in Table 7, none of these control variables had a statistically significant effect on employee performance ($p > .05$), indicating that the main relationships among open-plan office design, workplace interaction, and job autonomy remain robust across different demographic groups.

Table 7. Effects of Demographic Control Variables on Employee Performance

Control Variable	β	t-value	p-value	f^2
Age	.045	.823	.410	.01
Gender	-.032	.654	.514	.00
Education	.058	1.102	.271	.01
Family Status	-.041	.912	.362	.01

In overall, these results provide robust empirical support for the hypothesized relationships and highlight the importance of considering both environmental and motivational factors in understanding employee performance. The next section discusses these findings in depth, linking them to existing theory and prior research, and exploring their practical implications for workplace design and management.

5. Discussion

The findings support the hypothesized relationships and demonstrate how open-plan office design, workplace interaction, and job autonomy influence employee performance.

Consistent with H1, open-plan office design was found to have a significant positive effect on workplace interaction ($\beta = .636$, $t = 2.789$, $p = .005$, $f^2 = .16$). This indicates that the structural and environmental features of open-plan office effectively facilitate communication among employees. The five aspects assessed in this study, perceived visibility, interruptions during meetings, adequacy of workspace, ergonomic comfort, and appropriate lighting and temperature, jointly influence how employees engage and collaborate. Although open-plan layouts may occasionally lead to distractions or privacy concerns, the findings suggest that adequate space, comfortable workstations, and balanced environmental conditions create an atmosphere that supports social connection and teamwork. These results align with prior research (e.g., Bernstein & Turban, 2018; Kim & de Dear, 2013) emphasizing that open layouts encourage spontaneous communication and informal knowledge exchange, which are essential for innovation and team cohesion. Employees appear to use the visual openness and shared spaces of OPO to coordinate tasks more efficiently and maintain a sense of collective engagement. The moderate effect size ($f^2 = .16$) further highlights the importance of physical design in shaping social behavior at work. Practically, organizations should prioritize open-office designs that balance visibility, comfort, and opportunities for interaction.

Consistent with H2, workplace interaction was found to have a significant positive effect on employee performance ($\beta = .277$, $t = 3.476$, $p < .001$, $f^2 = .09$). This result highlights how effective communication and social interaction among employees contribute meaningfully to performance

outcomes. Frequent and constructive interactions facilitate information exchange, collaborative problem-solving, and mutual support, thereby improving task efficiency and job quality. When employees can easily access colleagues for feedback, advice, or coordination, they are better equipped to meet performance expectations and adapt to organizational goals. This finding aligns with previous studies (Bakker & Demerouti, 2013; Koopmans et al., 2014) suggesting that social interaction is a core mechanism through which teamwork, creativity, and organizational learning are strengthened. Workplace interactions also foster knowledge transfer and interpersonal trust, which can further support individual and collective performance. In open and communicative environments, employees are more likely to share innovative ideas and resolve challenges collaboratively, enhancing overall productivity. The observed small-to-medium effect size ($f^2 = .09$) underscores the meaningful contribution of workplace interactions to employee outcomes. From a practical perspective, this suggests that organizations should actively promote interaction through well-designed spatial layouts, collaborative technologies, and a culture of open communication. By cultivating frequent yet purposeful interactions, firms can leverage social dynamics to boost both individual performance and team effectiveness.

Consistent with H3, the results indicate that open-plan office design has a significant positive direct effect on employee performance ($\beta = .361$, $t = 9.217$, $p < .001$, $f^2 = .18$). This shows that beyond its role in shaping interpersonal interactions, the physical design of the workspace itself contributes directly to how effectively employees perform their tasks. Open plan office environments provide visual accessibility, encourage ease of communication, and support team coordination, which collectively enhance productivity and engagement. Employees working in open spaces often report higher awareness of team activities and a greater sense of inclusion, which can translate into stronger motivation and performance. This finding is consistent with prior research (Vischer, 2007; Haynes, 2007) emphasizing that well-designed physical environments can act as enablers of organizational performance by influencing employees' behavior, focus, and psychological well-being. Although open offices are sometimes criticized for increased noise and reduced privacy, the findings suggest that these potential drawbacks can be mitigated when openness is accompanied by adequate personal space and appropriate environmental conditions. Under such balanced conditions, openness appears to support communication and focus simultaneously, creating a setting conducive to higher performance. The moderate-to-strong effect size ($f^2 = .18$) underscores the importance of physical workspace characteristics as a strategic organizational asset. Practically, this implies that organizations should view office design as a deliberate tool for improving performance, engagement, and overall employee well-being.

Supporting H4, job autonomy was found to have a significant positive direct effect on employee performance ($\beta = .285$, $t = 2.699$, $p = .007$, $f^2 = .09$). This finding indicates that employees who perceive greater autonomy tend to perform more effectively in open-plan office environments. Autonomy enables individuals to exercise discretion in how they organize tasks, manage work demands, and allocate effort toward achieving performance objectives. According to Self-

Determination Theory (Deci & Ryan, 2000), autonomy represents a fundamental psychological need that enhances intrinsic motivation, self-regulation, and engagement. Employees who experience greater freedom and control over their work are therefore more likely to remain motivated, adapt to workplace challenges, and sustain higher levels of performance. This result is consistent with prior research (Parker et al., 2017; Gagné & Deci, 2005; Deci & Ryan, 2000) demonstrating that autonomy contributes positively to employee effectiveness, well-being, and job outcomes. The observed effect size ($f^2 = .09$) suggests that autonomy represents a meaningful contributor to performance alongside workplace interaction and office design. Practically, organizations can support employee performance by providing greater discretion in task execution, work organization, and decision-making.

The results also support H5, which proposed that workplace interaction mediates the relationship between open-plan office design and employee performance. The indirect path from OPO to employee performance via workplace interaction was statistically significant ($\beta = .176$, $t = 3.121$, $p = .002$, $f^2 = .05$, 95% CI [.078–.292]), indicating partial mediation. This finding implies that OPO influences performance not only directly but also indirectly by enhancing opportunities for communication, collaboration, and social exchange among employees. This result is consistent with prior research (Kim & de Dear, 2013; Sailer et al., 2019) highlighting that open-plan layouts promote spontaneous interaction, knowledge sharing, and collective problem-solving, which can contribute to improved work outcomes. The mediation effect underscores that social connectivity serves as a behavioral channel through which spatial design translates into performance improvements. Through workplace interaction, employees can access informal support, clarify tasks, and exchange knowledge, thereby strengthening performance. However, the mediation is partial, suggesting that OPO design also exerts a direct influence on performance, through ergonomic and environmental comfort. This emphasizes that open offices are not inherently beneficial or detrimental; rather, their effectiveness depends on how well they balance physical openness, environmental control, and social facilitation. Thus, workplace design interventions should not focus solely on aesthetics or space efficiency but on cultivating interactive environments that strategically enhance both collaboration and individual productivity.

Supporting H6, the interaction effect between workplace interaction and job autonomy on employee performance was positive and statistically significant ($\beta = .153$, $t = 3.013$, $p = .001$, $f^2 = .04$). This finding indicates that job autonomy strengthens the positive relationship between workplace interaction and employee performance. Employees who enjoy higher levels of autonomy appear better able to capitalize on the benefits of workplace interaction, including knowledge sharing, collaboration, and access to social support. In contrast, lower levels of autonomy may limit employees' ability to translate these collaborative opportunities into improved performance. This result aligns with Self-Determination Theory, which suggests autonomy enhances individuals' capacity to utilize available workplace resources effectively (Deci & Ryan, 2000). The finding therefore identifies job autonomy as an important boundary condition that

influences the extent to which workplace interaction contributes to employee performance. Although the effect size is relatively small ($f^2 = .04$), the moderation effect remains theoretically meaningful because it identifies an important boundary condition influencing the effectiveness of workplace interaction.

Overall, the findings from H1 through H6 demonstrate that employee performance in open-plan office environments is shaped by the interplay of environmental, social, and motivational factors. Open-plan office design influences performance both directly and indirectly through workplace interaction, while job autonomy contributes directly to performance and strengthens the positive effect of workplace interaction. These findings provide an integrated perspective on how physical workspace characteristics, social processes, and employee autonomy jointly shape performance in open plan work environments.

Furthermore, the analysis considered the potential influence of demographic factors, including age, gender, education level, and family status. As shown in Table 7, none of these control variables had a statistically significant effect ($p > .05$), indicating that these demographic characteristics did not make a significant contribution to employee performance within the tested model. This suggests that demographic characteristics do not meaningfully alter the core relationships tested in the model and therefore do not act as key explanatory factors in this context.

6. Contributions, Implications, Limitations and Future Research Directions

6.1. Theoretical Contributions

This study makes several significant contributions to theory by integrating environmental, social, and motivational perspectives on workplace performance. First, it extends research on open-plan offices by empirically demonstrating that the effects of OPO design on employee performance are partially mediated by workplace interaction. While prior studies often examined environmental features or performance outcomes separately (e.g. Parker et al., 2017; Vischer, 2007; De Croon et al., 2005), this study provides evidence of the mechanism through which physical office design influences employee behavior and performance, thereby bridging environmental psychology and organizational behavior literature. Importantly, these relationships were robust across demographic groups, highlighting the generalizability of the findings.

In addition, the findings highlight the critical role of job autonomy as both a direct predictor of employee performance and a moderating factor that strengthens the positive effect of workplace interaction on performance. By incorporating autonomy, a core component of Self-Determination Theory (SDT), the study demonstrates that employees are better able to benefit from workplace interactions when they possess greater discretion and control over their work. These findings advance understanding of how motivational resources interact with social processes to shape workplace outcomes. Consequently, the study shows that environmental, social, and psychological factors jointly influence employee performance rather than operating independently.

The study also highlights that office design has several important parts. Physical, ergonomic, and social features all work together to affect employee performance. By measuring open-plan office design through factors such as visibility, interruptions, space, ergonomics, and comfort, the study gives a clearer way to understand how the workplace environment influences employee outcomes.

Based on the findings, this study introduces the Integrated Workplace Interaction and Autonomy Framework (IWIAF). The framework suggests that employee performance in open-plan office is shaped by the interaction between the work environment, social interaction, and psychological factors. In particular, open-plan office design creates conditions that support workplace interaction. These interactions then connect office design to performance outcomes. At the same time, autonomy acts as a psychological factor that directly improves performance and helps employees turn workplace interactions into better results. The lack of significant effects from demographic variables also suggests that this framework may apply to different types of employees. By combining ideas from environmental psychology, organizational behavior, and Self-Determination Theory, IWIAF provides a clear and testable way to understand employee performance in modern workplaces.

Finally, the framework underscores the direct, indirect, and conditional nature of workplace effects. The findings demonstrate that neither office design, workplace interaction, nor autonomy alone is sufficient to explain employee performance. Rather, performance emerges from the combined influence of physical workspace characteristics, social interaction processes, and psychological resources. By articulating IWIAF, this study provides a foundation for future research and enriches existing literature by demonstrating how environmental, social, and motivational factors collectively shape employee outcomes.

6.2. Practical Implications

The findings of this study provide practical suggestions for managers, workplace designers, and organizational leaders who want to improve employee performance in open-plan offices. First, the results show the importance of designing workplaces that balance openness with comfort. Although open-plan offices encourage interaction, it is also important to consider ergonomic furniture, sufficient personal space, and suitable lighting and temperature. Organizations should make sure that employees can move around easily, have comfortable seating, and work in well-lit and temperature-controlled environments, since these factors support both interaction and job performance. These suggestions apply to different employee groups, as the study found that age, gender, education level, and family status did not significantly change the effects of office design and workplace interaction. In addition, the study highlights the important role of workplace interaction in linking office design to performance outcomes. Managers should create opportunities for both formal and informal collaboration, such as shared spaces, breakout areas, or organized team activities. These social opportunities help employees share information, coordinate

tasks, and build stronger working relationships, which strengthens the benefits of open-plan office layouts.

Furthermore, the moderating effect of job autonomy indicates that employees' perception of control and choice over their work strengthens the positive relationship between workplace interaction and employee performance. Employees with higher autonomy are better able to leverage communication, collaboration, and knowledge-sharing opportunities to enhance their performance. Practically, this suggests that organizations should empower employees by providing flexibility in task execution, decision-making, and work pacing. Autonomy-supportive practices, such as flexible scheduling, self-directed project assignments, and opportunities for meaningful contribution, can maximize the productivity gains from open-plan offices.

Finally, the Integrated Workplace Interaction and Autonomy Framework (IWIAF) provides a practical guide for improving workplace performance. Organizations should not focus only on office design, workplace relationships, or employee autonomy separately. Instead, these elements should be considered together because they can support and strengthen each other. When combined, they can improve employee engagement, collaboration, and performance. Since the study found that these effects are similar across different demographic groups, managers can apply the framework to a wide range of employees with confidence. By using this framework, organizations can develop effective strategies that make better use of both workplace conditions and employee strengths to improve performance in modern work environments.

6.3. Limitations and Future Research

Despite its theoretical and practical contributions, this study has several limitations that should be acknowledged. First, the research relies on cross-sectional survey data, which restricts the ability to draw causal inferences. Although the PLS-SEM analysis supports the hypothesized relationships, the findings should be interpreted as associations rather than definitive causal effects. Accordingly, care was taken to avoid causal interpretations when discussing the results. Longitudinal, experimental, or mixed-method research designs would provide stronger evidence regarding the causal relationships among open-plan office design, workplace interaction, job autonomy, and employee performance. Also, the sample size ($n = 107$) and geographic scope may limit the generalizability of the findings. Although the sample was relatively modest given the complexity of the proposed model, PLS-SEM is widely recognized as an appropriate analytical approach for exploratory and predictive research involving relatively small samples. Moreover, the sample exceeded the minimum requirements for estimating the proposed model. Nevertheless, the study was conducted among employees working in open-plan office environments within the province of Quebec, Canada, and caution should therefore be exercised when generalizing the findings to other regions, industries, or organizational contexts. Future studies employing larger and more diverse samples would help validate and extend the current findings and further strengthen their generalizability.

Although this study focused on specific features of open-plan office, including visibility, interruptions, workspace adequacy, ergonomics, and environmental comfort, other factors may also affect workplace interaction and employee performance. For example, organizational culture, leadership style, management practices, technological support, and team characteristics may influence how employees experience and respond to office design. Future research could include these factors to provide a more complete understanding of workplace dynamics and employee performance. In addition, although the study examined job autonomy as a key component of Self-Determination Theory (SDT), other psychological needs proposed by the theory, particularly competence and relatedness, were not included in the model. Future research could investigate how these additional motivational resources interact with workplace design and social processes to influence employee outcomes. Finally, the study relied primarily on self-reported measures, which may increase the risk of response bias and common method variance. Although the statistical analyses supported the reliability and validity of the measures, future studies could strengthen measurement validity by incorporating multiple data sources, such as objective performance indicators, supervisor evaluations, peer assessments, or behavioral observations.

7. Conclusion

As organizations continue to redesign workplaces to support collaboration, flexibility, and performance, understanding the conditions under which open-plan office design can contribute to positive employee outcomes has become increasingly important. This study demonstrates that the relationship between workplace design and employee performance extends beyond physical workspace characteristics to include social interaction and employee autonomy.

By integrating insights from environmental psychology, organizational behavior, and Self-Determination Theory, this study demonstrates that workplace effectiveness is best understood as the result of interconnected environmental, social, and motivational processes. The proposed Integrated Workplace Interaction and Autonomy Framework (IWIAF) integrates these dimensions by positioning workplace interaction as a key mechanism linking open-plan office design to employee performance and job autonomy as both a direct contributor to performance and a condition that strengthens this relationship. The framework therefore provides a foundation for future research on employee performance in contemporary work environments.

Ultimately, the study suggests that successful workplaces are not defined solely by their physical design but by their ability to create environments that support meaningful interaction, employee autonomy, and productive work experiences. As organizations continue to adapt to changing ways of working, adopting a more integrated view of workplace design may help create environments that support both employee performance and organizational effectiveness.

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