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The Impact of Physical Environment on Employee Commitment in Call Centres: The Mediating Role of Employee Well-Being

David McGuire & Lauren McLaren

Abstract

Purpose: The purpose of the paper is to examine the effect of the physical environment on employee commitment. It explores how favourable working conditions can affect an employee's sense of well-being which in turn can generate higher levels of employee commitment.

Methodology: A questionnaire instrument based upon previously validated measures was completed by 65 front line call centre employees. Baron and Kenny (1986) four-step procedure for testing mediation effects was adopted.

Findings: The statistical analysis confirms that employee well-being mediates the relationship between physical environment and employee commitment

Practical Implications: The call centre industry need to make employees more autonomous by reducing the level of scripting, encouraging greater involvement and participation in work systems and setting targets and the organization of regular team events.

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The Impact of Physical Environment on Employee Commitment in Call Centres: The Mediating Role of Employee Well-Being

Introduction

Generating higher levels of employee commitment in call centres is a critical factor to their successful operation. Commitment is defined as an employee's identification with and adoption of an organisation's values, norms and traditions (C. Anderson & Martin, 1995) and as such is a product of an employee's sense of well-being and satisfaction with the organization. A high level of employee commitment in an organization can have beneficial consequences, resulting in lower absenteeism, higher performance and lower employee turnover (Mathieu & Zajac, 1990). Such research also identifies commitment as a consequence of personal variables, role clarity and supportive working environment. By understanding the antecedents of employee commitment and its importance to an organisation's growth, managers can more effectively organize and supervise employees.

An organization's physical environment and its design and layout can affect employee behaviour in the workplace. Brill (1992) estimates that improvements in the physical design of the workplace may result in a 5-10 percent increase in employee productivity. For their part, Stallworth and Kleiner (1996) argue that increasingly an organisation's physical layout is designed around employee needs in order to maximize productivity and satisfaction. They argue that innovative workplaces can be developed to encourage the sharing of information and networking without regard to job

boundaries and to allow networked and spontaneous communication across departmental groups.

This paper makes four contributions to research and practice. Firstly, the call centre context is discussed in relation to studies on environmental factors and employee well-being. Our second objective is to establish whether physical environment is related to employee commitment. To date, research on the relationship between physical environment and its effects on worker's needs, behaviour and satisfaction has been limited (Stallworth & Kleiner, 1996). For his part, Holman (2003) failed to find a single study linking physical environment and employee well-being. Likewise Brown (1996) argues that the relationship between workers and the characteristics of work settings is not well understood. Our third objective is to examine whether the physical environment is related to employee well-being. Previous research has indicated that awareness of the internal and external environment can affect an employee's mental health and satisfaction with their professional and personal lives (Chatterjee & Dutta Roy, 1991). Finally, the role of employee well-being as a mediator of the relationship between physical environment and employee commitment is examined.

Environment, Well-Being and Commitment in the Call Centre Industry

Call centres are the fastest growing employment sector in modern Britain, employing an estimated 3% of the working population, in around 6,900 workplaces across the country (Holman, 2002; C.A. Sprigg, Smith, & Jackson, 2003). While call centres can reduce the cost of existing functions, improve

customer service facilities and offer new avenues of income generation (D. Holman, 2003), the call centre industry has suffered from a poor reputation of low pay, monotonous work, high demands, low control, limited social support and few opportunities for participation and learning (Anderrson & Jansson, 2006; Houlihan, 2000). Wilson (2006) maintains that the job of a call centre agent is often presented as one which anyone is able to do.

The growth of the call centre industry has been facilitated by the advances in technology. Through sophisticated telephone and computer-based systems and neotayloristic routinized work practices, customer agents engage in hundreds of interactions on a daily basis. Holman (2003) contends that in relation to degrees of work control, call centres vary in the amounts of discretion afforded to customer service representatives. Wilson (2006) argues that the use of scripts and information technology have restructured the organization of work to reduce not only the skills of the agent, but also their need to think. Indeed, research indicates that excessive scripting is positively related to emotional exhaustion (Batt & Applebaum, 1995; Deery, Iverson, & Walsh, 2002; D. Holman, 2003)

The issue of performance monitoring is a contentious issue within call centres. Mulholland (2002) maintains that managerial control has been extended with the integration of telephones and computers, limiting agent discretion and control over their work. Holman (2003) argues that monitoring is intrinsically threatening to employees as the information collected may affect employee pay and/or coworker relationships. Despite attention in the literature to monitoring issues, Houlihan (2001) argues that monitoring is a

less important issue for call centre agents in contrast to monotony, frustration and a sense of injustice caused by shifting targets.

Physical Environment and Employee Commitment

The modern work physical environment is characterised by technology; computers and machines as well as general furniture and furnishings (Statt, 1994) which through incessant interaction, bombard our brains with sensory information (Kornhauser, 1965; Sutherland & Cooper, 1990). To achieve high levels of employee commitment, organizations must ensure that the physical environment is conducive to organizational needs facilitating interaction and privacy, formality and informality, functionality and cross-disciplinarity. Consequently, the physical environment is a tool that can be leveraged both to improve business results (Mohr, 1996) and employee well-being (Huang, Robertson, & Chang, 2004).

Ensuring adequate facilities are provided to employees is critical to generating greater employee commitment. The provision of inadequate equipment and adverse working conditions has been shown to affect employee commitment and intention to stay with the organization (Weiss, 1999; Wise, Darling-Hammond, & Berry, 1987) as well as levels of job satisfaction and the perception of fairness of pay (Bockerman & Ilmakunnas, 2006). From a safety perspective, Gyekye (2006) indicates that environmental conditions affect employee safety perceptions which impact upon employee commitment.

The notion that innovation and creativity can be shaped through alteration or design of work settings has important implications for businesses and organizational change consultants (Stallworth & Kleiner, 1996). Hedge (1982) argues that open workplaces provide greater levels of flexibility and encourage greater team interaction as they offer interpersonal access and ease of communication compared to private enclosed offices. Nenonen (2004) maintains that the physical environment can support a sense of space allowing for the creation of tacit knowledge and greater social interaction amongst individuals. A more innovative working environment is also associated with increased staff collaboration and higher productivity (Ilozor, Love, & Treloar, 2002) as well as more positive job attitudes and increased job satisfaction (Lee, 2006; Lee & Brand, 2005). Thus, we predict:

Hypothesis 1: Physical Environment will be positively related to
Employee Commitment

Antecedents of Employee Wellbeing

Employee well-being is increasingly recognised as an important issue in organisations, particularly as instances of stress related illness at work continue to rise (Cooper & Cartwright, 1996). Well-being depends greatly on the balance between the physical, emotional, intellectual and spiritual aspects of a human being (Seaward, 1994). Individual well-being does not exist in a vacuum, the presence or absence of variables in the environment influences how an individual will act or react to situations, either as a stress or coping

response. Research shows a clear association between an individual's working environment and their experience of good health both psychological and physical (Sutherland & Cooper, 1993). Creating a comfortable and supportive working environment can therefore enhance an individual's sense of well-being. Cunha and Cooper (2002) contend that the consequences of a stressful environment can include physical ill-health symptoms (such as cardiovascular and gastro-intestinal problems) mental ill-health symptoms (such as tension, anxiety and depression) and low job satisfaction.

Guest and Conway (2004, p. 63) define employee well-being in terms of six key areas: a manageable workload; some personal control over the job; support from colleagues and supervisors; positive relationships at work; a reasonably clear role and a sense of control or involvement in changes at the workplace. Both Spreitzer (1996) and Bandura (1986) maintain that individual perception of working environment is highly important as it impacts upon the ability of the individual to take control of their work and level of stress in the work place. The two principal factors underpinning employee well-being are perceived control and social support.

Ensuring an employee is not overburdened and is in control of their work is critical to employee well-being and to driving employee performance and organizational productivity. According to McGrath (1976, p. 1351): "the potential for stress exists when an environment situation is perceived as presenting demands which threatens to exceed the person's capabilities and resources for meeting it." Research has shown that perceived control leads to decreased stress levels and improved employee health (Heaney et al., 1993;

Israel, Schurman, & House, 1989). Consequently, employee empowerment and participation can increase an employees sense of control and improve employee health and well-being.

Support for employees in the workplace can have a positive effect on employee well-being. Employee who feel supported in the workplace have been found to have higher levels of employee commitment (Wayne, Shore, & Liden, 1997) and are more likely to have higher levels of performance (Eisenberger, Fasolo, & Davis-LaMastro, 1990). Heaney et al. (1993) argue that organizational support for employees can promote employee well-being in three ways: first, it can help an employee modify a stressful situation; second, it can help an employee develop a new perspective on a stressful situation and three, it can decrease the emotional upset associated with a problematic situation.

The physical layout and equipment present in the working environment can have strong effects on employee well-being. Stellman et al. (1987) explore the relationship between visual display terminal usage, physical work environment perceptions and employee well-being. They found that all-day visual display terminal users experienced higher levels of job and physical environment stressors than part-time users. They also report that the incidence of musculoskeletal strain and job dissatisfaction is highest amongst all-day terminal users. A closely related factor to environment, work design was also found to affect employee well-being in the workplace. Holman (2003) indicates that the work design employed in organizations can have a strong association of stress, anxiety and depression. Similarly, Sprigg and

Jackson (2006) contend that more prescriptive work systems can lead to higher levels of job-related strain and have a detrimental impact on employee health. Thus, we predict:

Hypothesis 2: Physical Environment will be positively related to
Employee Well-Being

The Mediating Role of Employee Well-Being

In this article, we argue that employee well-being mediates the relationship between physical environment and employee commitment. In other words, physical environment influences employee commitment through fostering a sense of employee well-being. Through satisfaction with the physical environment, employee well-being is enhanced. Research has shown that employees who are satisfied with their physical working environment have higher levels of job satisfaction, work performance and psychological well-being (Greenberger, Strasser, Cummings, & SDunham, 1989; Sargent & Deborah, 1998)

Satisfaction with the physical environment can be influenced in a number of different ways. First, ensuring that work stations are correctly fitted and have the proper equipment is essential. Statt (1994) argues that the adjustability/condition of work surfaces, chairs and of computer equipment which individuals use at work impacts upon psychological well-being. It also facilitates individual comfort and security at the work station. Indeed, environmental factors which are out of balance will distract an employee from

their work affecting factors such as manual dexterity and cognitive ability (Sutherland & Cooper, 1990). Second, encouraging greater involvement in workplace design will bring about greater employee identification with the workspace and work system. London and Larsen (1999) argue that employee job satisfaction and well-being is enhanced when supervisors provide a supportive environment where employees are encouraged to interact and speak out about workplace issues. Likewise, Spreckelmeyer (1993) maintains that worker satisfaction is increased when they are involved in designing renovations for an office-based organization. Third, personalization of the physical environment will promote employee well-being through creating a comfortable individual workspace. Allen and Greenberger (1980) argue that individuals increase their sense of environmental control through the personalization of their workspace. Likewise, Larsen et al. (1998) contend that attractive work environments increase employee well-being and the presence of indoor plants increases the comfort and attractiveness of work environments. Thus, we predict:

*Hypothesis 3: Employee Well-being mediates the relationship
between Physical Environment and Employee Commitment*

Methodology

Sample and Procedures

A field study was conducted to test both the direct effects of employee well-being on employee commitment and the moderating effects of environmental

factors on the relationship between employee well-being and employee commitment. The host organization for the study was a large call centre in Scotland employing 1,020 full time employees in 75 teams. The call centre is owned and managed by a prominent utility supplier as part of its customer service operation and is located at the company headquarters. The call center has an automatic call distributor (ACD) which assigns calls to operators within individual cells. Employees must be logged on to the phone for 96% of their working day, which includes agreed log outs for the following; lunch, two 15-minute breaks, daily team meetings and one to one's with their supervisor. The call centre was recently awarded the prestigious title of being one of the '12 Best Call Centre Environments' in the UK and Ireland.

A total of 65 out of a sample of 100 frontline customer service call centre employees voluntarily participated in the study. The survey was completed during working time at the employees desk and collection of the questionnaires was undertaken by the training & development manager. A cover letter was issued with each survey explaining the general purpose of the study and stating that participation was voluntary. All respondents were assured of the confidentiality of their responses and the anonymity of their identities.

An analysis of the demographic characteristics of respondents showed that 50.8% of the sample members were female; 64.4% were aged between 20 and 29; 51.6% had 1-2 years service with a further 37.5% having between 3 and 5 years service. In terms of highest level of educational attainment, 40.6% of respondents indicated secondary school completion; 35.9% had

gained an undergraduate qualification, with 7.8% of respondents undertaking postgraduate education.

Measures

Physical Environment: The Physical Working Environment Measures consists of 15 items, developed by Sprigg et al, (2003) were also self-rated on a likert five-point scale ranging from 'Strongly Disagree' to 'Strongly Agree' (Oppenheim, 1992). Principal components analysis indicated the presence of two factors accounting for 53% of the variance. Factor one examined the work area and had an eigenvalue of 5.68 ($\alpha = 0.87$). To capture work area, respondents were asked to indicate the extent of agreement with the following statements (item factor loadings are in brackets): (1) I am satisfied with the amount of my allocated work space (0.64); (2) My work station is very clean (0.69); (3) My keyboard is in good condition (0.73); (4) My computer mouse is in good repair (0.79); (5) My work surface is suitable for me to do my work (0.73); (6) My chair is in good repair (0.45); (7) My chair is maintained to a good standard (0.42); (8) I have adequate storage space for the information I need to do my work (0.55); (9) I do not have adequate storage space for my personal items (0.59) (Reversed); (10) There is adequate space between me & my nearest colleague (0.66); (11) I am very satisfied with the overall layout of the call handling area (0.77).

Factor two related to the height of the work surface and had an eigenvalue of 2.26. ($\alpha = 0.78$). It enquired of respondents whether "my work surface is at the correct height (0.67), whether "I am satisfied with the height

and position of my computer screen" (0.73) and whether "my chair can be adjusted to the correct height" (0.68).

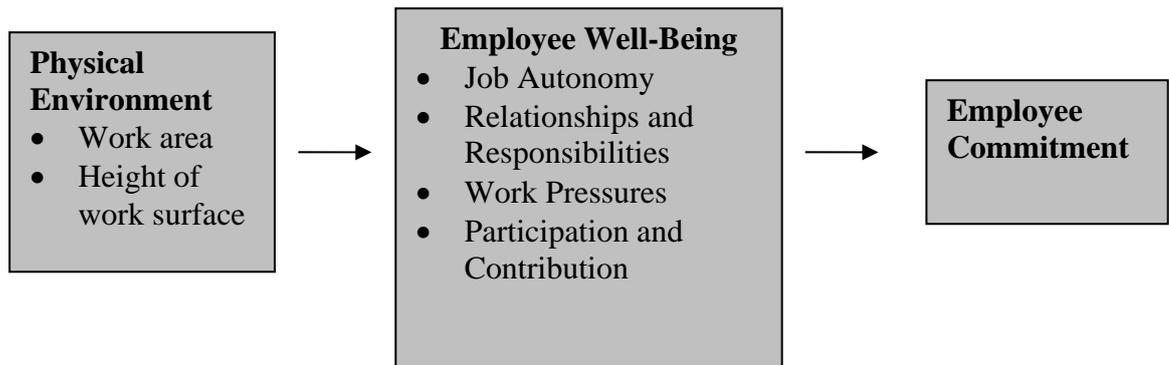
Employee Well-Being: The 'Work Related Stress & Employee Well-being' measures consist of 14 items. Responses to the items were made on a self-rating, five-point Likert scale ranging from 'Strongly Disagree' to 'Strongly Agree' (Oppenheim, 1992). The items in this section were taken from the six dimensions identified by Guest and Conway (2004) to be associated with work related stress and well-being. While six dimensions were originally conceptualized by Guest and Conway (2004), principal components analysis revealed four factors accounting for 71% of the variance. Factor one related to job autonomy and had an eigenvalue of 3.44 ($\alpha = 0.51$). In order to establish job autonomy, respondents were asked whether they "plan their own work" (0.89), the degree to which "I choose the tasks I work on" (0.84), the extent to which "I vary how I do my work" (0.73) the scope to "determine the pace at which I work" (0.53) and the freedom I have to do things one way, which I think should be done differently (Reversed) (-0.42).

Factor two examined relationships and responsibilities and had an eigenvalue of 2.86 ($\alpha = 0.62$). It includes three items including: I get the help and support I need from colleagues (0.74); Relationships I have with colleagues at work are generally good (0.87); I am clear what my duties and responsibilities are (0.60). Factor three looked at work pressures and had an eigenvalue of 1.53 ($\alpha = 0.55$). It includes three items: the demands of the job are realistic (0.59); I feel my work load is too heavy (Reversed) (0.68); There is a lot of change going on in the place where I work (0.72). Factor four

related to contribution and participation and had an eigenvalue of 1.33 ($\alpha=0.49$). Two items were included: I don't receive much help and support from my supervisor (0.45) and I can participate and contribute to changes that affect me at work (0.83).

Employee Commitment: Employee Commitment was measured on a five point Likert scale ranging from 'Strongly Disagree' to 'Strongly Agree' from an instrument developed by Rogg et al (2001). Six items of employee commitment were incorporated. Principal component analysis demonstrated that all items loaded on a single factor having an eigenvalue of 3.25 and accounting for 54% of the variance. The six items related to (item factor loadings are in brackets): Employees know they are valued (0.91); Employees say they are proud to work here (0.88); Employees would recommend this place as a good place to work (0.82); Employees would stay with the company even if offered a job elsewhere (0.72); Employees make personal sacrifices when required to help the company succeed (0.55) and Employees trust each other (0.43). The reliability (Cronbach Alpha) for the scale was 0.81.

The research model for the study may be presented as follows:



Results

Means, standard deviations and correlations among the variables are displayed in table one. There is a strong positive significant correlation between the dependent variable (employee commitment) and two constituent independent measures (work area and height of work surface). Three of the four measures of the mediating variable (Job Autonomy, Relationship and Responsibility and Participation and Contribution) are also positively and significantly correlated with employee commitment. Of particular significance is the high positive correlation between participation and contribution with employee commitment. This suggests that greater involvement of employees in the affairs of the business will lead to a higher level of identification, bonding and commitment with the organization itself.

Table 1: Means, Standard Deviations and Correlations among Study Variables

Variable	Mean	S.D.	1	2	3	4	5	6	7
1. Work Area	3.36	0.68							
2. Height of Work Surface	4.01	0.63	0.48**						
3. Job Autonomy	2.24	0.66	0.34*	0.32*					
4. Relationship & Responsibility	4.01	0.66	0.35*	0.43**	0.21				
5. Work Pressures	3.60	0.79	0.06	0.17	0.10	0.23			
6. Participation & Contribution	3.33	0.94	0.39*	0.22	0.06	0.33*	0.28		
7. Employee Commitment	2.52	0.75	0.51**	0.32*	0.39**	0.45**	0.26	0.63**	

The hypotheses are tested using ordinary least-squares regression analysis (Table 2). Hypothesis 1 states that physical commitment will be positively related to employee commitment. Model 1 supports this hypothesis indicating that physical environment is significantly related to employee commitment ($\beta = 0.53, p < 0.001$). Hypothesis 2 predicts that physical environment will be positively related to employee well-being. Model 2 supports hypothesis 2, indicating the existence of a significant positive relationship ($\beta = 0.58, p < 0.05$).

Table 2: Results of Regression Analysis

Variable	Model 1: Dependent Variable: Employee Commitment	Model 2: Dependent Variable: Employee Well-Being	Model 3: Dependent Variable: Employee Commitment	Model 4: Dependent Variable: Employee Commitment
Physical Environment	0.53***	0.58*		0.37
Employee Well-Being			0.74***	0.56*
R ²	0.28	0.33	0.55	0.70
Adjusted R ²	0.26	0.28	0.53	0.64
ANOVA F	14.12***	5.95*	25.30***	12.77***

Hypothesis 3 states that employee well-being mediates the relationship between physical environment and employee commitment. To test for mediation effects, the four-step procedure described by Baron and Kenny (1986) was used, namely: (1) demonstrate a significant relationship between the independent and dependent variable (2) demonstrate a significant relationship between the independent variable and mediator (3) demonstrate a significant relationship between the mediator and dependent variable (4) controlling for the effects of the mediator, demonstrate that the original relationship between the independent and dependent variable is reduced to non-significance (full-mediation) or becomes reduced (partial mediation). Following this procedure, a significant relationship has already been observed between physical environment and employee commitment as indicated by model 1. The second step requires a significant relationship between physical environment and employee well-being and this is demonstrated by model 2. Model 3 shows that employee well-being is significantly related to employee commitment ($\beta = 0.74$, $p < 0.001$). Finally, support for the mediated

relationship would be observed if the initial significant relationship between physical environment and employee commitment disappear or decrease when employee well-being is added to the regression equation. Model 4 indicates that the relationship between physical environment and employee commitment is no longer significant ($\beta = 0.37, p > 0.05$). This supports hypothesis 3 and confirms that employee well-being fully mediates the relationship between physical environment and employee commitment.

Discussion

In this study, we examined whether employee well-being mediates the relationship between physical environment and employee commitment. We found strong evidence of a mediational effect evidencing the importance of both physical environment and employee well-being to employee commitment. The study raises important issues for both theory and practice.

The finding suggests that in order to further increase employee commitment, organizations in addition to addressing the physical working environment of employees need to consider employee well-being measures. Specifically, organizations need to look at workload models appropriate to their particular industries to ensure that employees are not unfairly overburdened with work. They need to consider work design and increase levels of participation and involvement as means of increasing perceived control as previous research has indicated that perceived control leads to decreased stress levels and improved employee health (Heaney et al., 1993; Israel, Schurman, & House, 1989). Fostering a supportive organizational

culture with good relationships among staff is also integral to greater employee well-being. These relationships can also assist employees in coping with ever-increasing levels of organizational change. Again research indicates that a supportive culture can reduce employee stress levels and increase employee commitment (Wayne, Shore, & Liden, 1997).

Several other important findings arise from the study. First, there exists a strong positive relationship between physical environment and employee commitment. This confirms the findings of previous research that favorable working conditions encourage greater interaction, collaboration and innovation (Ilozor, Love, & Treloar, 2002; Nenonen, 2004) and employees are more likely to experience higher job satisfaction and greater intention to stay with the organization (Weiss, 1999; Wise, Darling-Hammond, & Berry, 1987). Second, the strong relationship between physical environment and employee well-being confirms research by Sutherland and Cooper (1990) that poor working conditions may lead to poor mental health amongst employees. It suggests that organizations need to invest resources in ensuring that the work environment is pleasant and amenable to employees. By ensuring equipment is functioning correctly, and that there is adequate work space, employees will feel more secure and settled in their surroundings and will become more committed to the organization. It proves that a pleasant and amenable physical environment can be an effective tool in reducing stress and promoting employee wellness and occupational health.

The findings raise a number of specific implications for the call centre industry. As a sector with a reputation for making high demands with low

employee control and limited social support (E. Anderson & Jansson, 2006; Houlihan, 2000), the industry need to look at making employees more autonomous in how they do their work. Measures such as reducing the level of scripting, greater involvement and participation in work systems and setting targets and the organization of regular team events may promote greater employee connection with the organization and reduce employee stress levels. The importance of physical environment as a mediating factor affecting employee commitment underlines the need for call centres to become viewed as favourable working environments. The end of hot desking, the provision of adequate work space and allowing employees to personalize their work space would go some way to ensuring employees feel comfortable and secure within their working environment.

Several limitations were observed in the study. The reliance on self-report data raises issues of the consistency motif and common method variance. The consistency motif may be explained by theories about personality relied upon by the body politic which may influence their desire to provide consistent answers to questions (Martocchio & Harrison, 1993; Phillips & Lord, 1986). In relation to common method variance, Podsakoff and Organ (1986) argue that this occurs when two or more measures arise from the same source leading to fears of cross-contamination. However, as Begley (1998) points out, the derivation of multiple factors from a factor analysis diminishes the significance of common method variance.

In conclusion, the identification of employee well-being as a mediating factor of the relationship between physical environment and employee

commitment indicates the importance of tending to employee well-being in the workplace. It suggests that human resource departments have an active role to play in providing support to employees and introducing mechanisms to control workflow and alleviate stress. Given the paucity of research on the effects of physical environment, future research has a definite role in examining how environmental conditions impact upon individuals in the workplace.

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