



The Relationship of Physical Work Environment on Employee Productivity of Call Center Agents: Inputs to an Enhanced Productivity Programs and Strategies

Aira May T. Balancio-Canlas¹

¹National University Clark, Angeles City, Pampanga

Corresponding email: balancioaira2@gmail.edu.ph

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Abstract. This study assessed the relationship between the physical work environment and employee productivity of call center agents around the cities of City San Fernando and Clark in Pampanga. Physical work environment served as the independent variable of the study, and employee productivity as the dependent variable. Quantitative research was conducted, and descriptive and correlational studies was the research design of the study. The researchers administered a four-point Likert-scale survey questionnaire to 150 respondents. Purposive and convenience sampling techniques were used for sample selection, and data were analyzed using Pearson's r correlation. The findings revealed that the independent and dependent variables' sub-indicators—Noise and Efficiency, respectively, —had the least evident means. However, among the independent and dependent variables, the sub-indicators Workspace and Effectiveness had the most manifested means. The physical work environment and employee productivity were significantly correlated. Consequently, the null hypothesis was rejected because it was shown to be less than the acceptable margin. This study aims to evaluate how call center agents' physical work environments affect their productivity. The recommendations involved implementing programs and training efforts to optimize staff capabilities and increase output. The proposed approaches that have been presented additionally place emphasis on the advancement and enhancement of tools and equipment to bolster worker productivity and efficiency even further.

Keywords: *physical work environment, employee productivity, quantitative research*

INTRODUCTION

In the contemporary global economic landscape, businesses increasingly rely on call centers. For three of every five enterprises, call centers are acknowledged as crucial sales and marketing platforms. In addition, the United States currently holds approximately 12% of the global telephone system market share. The evolution of communication technology has given rise to a significant shortage of skilled personnel, posing challenges for businesses to fulfill client needs. Projections indicate that the worldwide demand for call center agents is expected to surpass 1.9 million personnel by



2025, according to the report of Emmersion (2023).

Establishing an efficient call center environment in North America requires the optimization of various operational elements. This encompasses everything, from the layout of the facility to the integration of computer systems and software. Every aspect that influences the internal ambiance of a call center, such as noise levels, adequate workspace, comfortable air temperature, proper lighting, and the provision of suitable equipment, can significantly impact employee productivity. Consequently, the physical work environment is a pivotal factor in enhancing overall employee productivity, as highlighted by Miner (2020).

In Asia, India emerged as a trailblazer in the offshore Business Process Outsourcing (BPO) industry. The inception of the first call centers in India dates back to the 1980s, capitalizing on government incentives and the availability of cost-effective English-speaking personnel. As a result, the voice-related call center sector in India has become a major employer, with an estimated 1.1 to 1.3 million call center workers, positioning India as second only to the Philippines in this regard. Despite the remarkable success in the outsourcing sector, it has not been without challenges. A significant issue has been the notably high attrition rate, as call center employees frequently resign in pursuit of opportunities to offer higher compensation, as observed by Martin (2023).

In the Philippines, call center employment has become increasingly prevalent, particularly in the expanding business processing outsourcing (BPO) sector. This trend has piqued the interest of Filipinos in pursuing careers in this field (Cajuday et al., 2019). Within the broader outsourcing domain, call centers are integral components that encompass business process outsourcing (BPO), shared services, seat-leasing enterprises, home-based outsourcing, virtual assistants, and freelancers. According to Estrellado's (2023) insights, call centers represent substantial enterprises catering to corporate clients, specializing in handling large-scale repetitive tasks such as customer support, sales, and account management.

The ascent of the Business Process Outsourcing (BPO) industry has led to substantial transformations, particularly reshaping the work environment in the Philippines. One pivotal factor that encouraged Western corporations to delegate their call center services to the Philippines was the country's proficiency in English. Consequently, the Philippines has garnered the reputation of being a global hub for English-speaking call center agents in the call center and business process outsourcing (BPO) sector (CustomerServ, 2022). Presently, the Philippines boasts a workforce of over 1.3 million young, tech-savvy call center employees proficient in English language outsourcing services. Remarkably, the country has experienced significant growth over the past five years, solidifying its status as the world's largest market for call center outsourcing, as noted by Lee (2015).

Recognized as the global "call center capital," the Philippines continues to capture the attention of international corporations. The unique qualities, capabilities, and character of Filipinos make them highly valued by prospective clients. Despite the country's lower



cost of living compared with other countries, the level of productivity remains remarkably high. Additionally, the appeal of factors such as proficiency in English, cultural affinity with Western nations, cost-effective labor rates, strong work ethics, and friendliness all contribute to attracting diverse companies to invest in establishing new call centers in the Philippines (Acleta, 2023).

Despite ongoing progress, the business process outsourcing (BPO) sector and its service providers are facing persistent challenges. As outlined by Santos (2023), reporting employee productivity emerges as a substantial obstacle in the Philippine BPO industry, particularly for those working remotely or across diverse time zones. Conventional metrics that concentrate solely on output-to-time ratios prove inadequate in capturing the intricacies of service quality and task complexity. Santos advocates a more holistic approach that considers not only time utilization but also a comprehensive evaluation of overall workforce performance.

The workplace environment encompasses intricate connections between employees and their physical surroundings. This environment encompasses all surroundings within which an employee operates. According to Kodarlikar and Umale (2020), enhanced employee performance and productivity are the likely outcomes of an improved physical work environment. This type of working environment is characterized by employees collaborating to attain organizational objectives, involving various systems, procedures, structures, and equipment that interact with individuals and can influence their performance either positively or negatively, as described by Awan and Tahir (2017).

Being attentive to the physical work environment and taking care of employees is indicative of a well-functioning organization, particularly recognizing employees as one of an organization's most valuable assets (Bhatti, 2018). Given that employees dedicate significant portions of their lives to their workplace responsibilities, as noted by Satyendra (2021), their cognitive and emotional states, focus, behavior, actions, and talents can be significantly influenced by the physical work environment. According to researchers such as Leblebici (2012) and Samson (2014), a stress-free work environment promotes employee well-being, enabling employees to channel their energy fully into their tasks, potentially resulting in enhanced performance and productivity.

According to Satyendra (2019), unfavorable surroundings can give rise to hazards, rendering the workplace environment unsafe and diminishing employee productivity. Both Leblebici (2012) and Satyendra (2019) asserted that the physical attributes of the workplace environment can exert both positive and negative influences on various aspects, including employee productivity, performance, health and safety, comfort, focus, job satisfaction, and enthusiasm. Conversely, a suitable, supportive, and enjoyable workplace atmosphere has the potential to enhance employees' physical and mental capabilities as they go about their routine duties.

The identified gap underscores the necessity for management to actively engage not only in enhancing the physical workplace environment for employee comfort, but also in adapting management practices to align with employees' needs. This entails refining

aspects of employees' ethics, behavior, commitment, professionalism, motivation, and interpersonal relationships to bolster productivity. Furthermore, management strategies for boosting employee productivity typically focus on two key areas: individual motivation and development of the physical work environment. Additionally, the call center industry, which is one of the largest sectors globally, has been a significant focus of research on employee engagement. Stress and burnout in call centers have consistently attracted the attention of both local and international researchers because of their impact on employee performance and productivity, a trend that has persisted since the industry went global, as noted by Montalbo (2017).

The primary objective of this study was to assess the relationship between the physical work environment and employees' productivity of Call Center Agents. The researcher aimed to identify the most efficient productivity programs and strategies with the ultimate goal of improving the overall productivity. Furthermore, this study has potential benefits for call center companies and agents, offering insights to help formulate and enhance working conditions.

Conceptual Framework of the Study

The conceptual framework of this study is illustrated in Figure 1. It has two significant components, an independent variable and a dependent variable. The independent variable component consisted of the factors used to assess the physical work environment in terms of equipment, noise, temperature, lighting and workspace. The second component of the dependent variables comprises the factors that assess employees' productivity in terms of efficiency, quality, effectiveness, and timeliness.

This study was directed toward considering the model described below. This model hypothesizes that physical work environment factors call center companies should excel to influence employees' productivity.

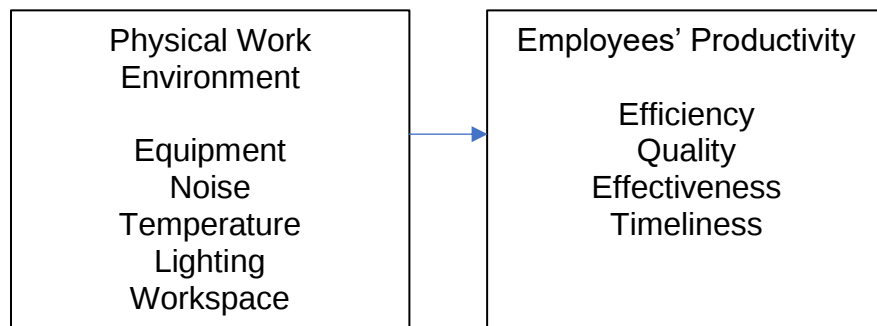


Figure 1. *Conceptual Framework of the Study*

Objectives of the Study

This study aimed to measure the relationship between physical work environment and employee productivity. It sought to understand how the physical work environment can



affect employees' productivity as a basis for enhanced productivity programs and strategies. Specifically, it sought answers to the following problems:

1. How may the physical work environment be described by the respondents in terms of:
 - 1.1. Equipment;
 - 1.2. Noise;
 - 1.3. Temperature;
 - 1.4. Lighting; and
 - 1.5. Workspace?
2. How may the employees' productivity be described by respondents in terms of:
 - 2.1. Efficiency;
 - 2.2. Quality;
 - 2.3. Effectiveness; and
 - 2.4. Timeliness?
3. Is there a significant relationship between the physical work environment and employees' productivity?
4. What productivity programs and strategies may be recommended to enhance the physical work environment that may improve employees' productivity?

Hypothesis

There is no significant relationship between the physical work environment and employees' productivity?

METHOD

Research Design

This study employed a quantitative, descriptive, correlational approach. A quantitative method was chosen because it establishes a connection between the gathered information and perceptions based on numerical computations. The quantitative descriptive research method was specifically used to evaluate both the physical work environment and employee productivity. The correlational aspect of the study focused on testing the significance of the relationship between physical work environment and employee productivity. Furthermore, a correlational method was applied to comprehend the relationship between the independent and dependent variables of the study.

Respondents

The study encompassed 150 call center agents from specific companies situated in the cities of San Fernando and Clark in Pampanga. A purposive sampling technique was employed for convenient collection of data. In purposive sampling, specific criteria were



established to narrow down the respondents: (a) a minimum of one year of experience in the field, (b) involvement in either voice or non-voice accounts, and (c) availability of respondents within the company influencing data collection.

Ethical Consideration

The researchers ensured that they did not disclose any information regarding the identity of the respondents. The utmost confidentiality was ensured to protect the respondents' identities and the information they provided. The researcher also ensured that no human rights were violated. All the literature that has been used and gathered in this study is acknowledged and appreciated in the reference section.

Instrument

For data collection, the researchers adapted the survey questionnaires and modified them to align with the study's specific requirements. The questionnaire was divided into two parts: Part I consisted of questions aimed at assessing the physical work environment while Part II focused on measuring employees' productivity. The questionnaire was comprised of 30 items, with most of the questions designed to be answered using a Likert Scale. The statements in Part I, assessing the physical work environment, were adapted from studies conducted by David et al. (2021). Part II, an assessment of employee productivity, drew inspiration from Buuri's (2015) work titled "Performance Measurement Practices and Employee Productivity in the Insurance Firms in Kenya".

Data Collection

The researchers used an adapted survey questionnaire from another study, and before it was distributed to the respondents, it was first validated by three personalities. The survey questionnaire is related to and substantiated in the statement of the problem, which will be useful in this study. Next, a pilot test was conducted to check the validity and reliability of the questionnaires. The next procedure was to disseminate the questionnaires to the respondents. Due to certain limitations, such as the schedule of the employees and reaching a large number of respondents, the researcher sought the aid of technology by conducting a survey using Google Forms. The researcher used printed survey questionnaires for respondents who were available at the time of questionnaire dissemination. Before answering the questions, the respondents were informed of the purpose of the study, what it meant for them to take part in it, and their right to withdraw at any time. Informed consent was obtained from all the respondents. The information and data gathered in the survey were tallied, analyzed, and interpreted properly.



RESULTS

Table 1. *Respondents' Assessment on Physical Work Environment*

Indicators	Mean	Verbal Interpretation
Equipment	3.45	Agree
Noise	2.74	Agree
Temperature	2.78	Agree
Lighting	3.20	Agree
Workspace	3.46	Agree
Weighted Mean	3.17	Agree

Table 1 summarizes the respondents' assessment of the physical work environment, with an overall mean of 3.17, lying under the verbal description of the Agree category. There are a total of five sub- indicators that compose the independent variable. The workspace had the highest mean (3.46), and the lowest mean (2.74) was received by the second sub-indicator, noise. The verbal descriptions of both sub-indicators fell under the Agree category.

Table 2. *Respondents' Assessment on Employees' Productivity*

Indicators	Mean	Verbal Interpretation
Efficiency	3.39	Agree
Quality	3.46	Agree
Effectiveness	3.68	Strongly Agree
Timeliness	3.42	Agree
Weighted Mean	3.49	Agree

Table 2 summarizes the respondents' level of assessment of Employee Productivity, with an overall mean of 3.49 falling under the verbal description of Agree. The dependent variable consisted of four sub-indicators. The sub-indicator three or "Effectiveness" had the highest mean of 3.68 with a Strongly Agree verbal description and a standard deviation of 0.53. Whilst, the lowest mean of 3.39 with a standard deviation of 0.77, and a verbal interpretation of Agree is received by the first sub-indicator "Efficiency."

Table 3. *Significant Relationship Between Physical Work Environment and Employee Productivity*

Variable	N	R-value
Physical Work Environment and Employee Productivity	150	0.2198

Table 3 illustrates the significant relationship between physical work environment and employee productivity, where it was discovered that there is a positive correlation of 0.2198, and the relationship between the two variables is low, with the result being significant at $p < .05$, and a p-value of 0.00688. This only indicates that the alternative hypothesis is accepted and the null hypothesis is rejected. Furthermore, there was a



significant relationship between independent and dependent variables.

DISCUSSION

The prevailing consensus among respondents indicates that the physical work environment notably influences employee productivity. Among the five sub-indicators of the physical work environment, the workspace dimension emerged as the most apparent, while noise was perceived as the least influential.

Most respondents acknowledged the substantial impact of employee productivity on overall performance. Among the four sub-indicators of employee productivity, effectiveness is identified as the most conspicuous, while efficiency is considered the least observable.

This study established a correlation between the physical work environment of call center companies and the productivity levels of their employees. Because it was found that the null hypothesis was less than the allowable margin, the null hypothesis was rejected.

Conclusion

Based on the results of the study, "Noise" emerged as the sub-indicator with the lowest manifested mean among the five elements of physical work environment. Consequently, the researcher suggests that call center companies should consider redesigning their workplace layouts. This could involve the creation of designated quiet areas to mitigate noise pollution. Grouping workstations based on departments or functions may be an effective strategy, and relocating noisy equipment to a separate area is also recommended. The incorporation of dividers and acoustic panels has been proposed to absorb and deflect sound, thus fostering a more comfortable and productive work environment. These panels can be strategically placed on tables, walls, or ceilings. Additionally, the researchers advocate the development of a cleaning schedule that minimally interferes with employees' working hours. Scheduling cleaning activities shortly after agent shifts or breaks are suggested. These measures aim to enhance employee productivity and consequently benefit the organization.

According to the findings within the variable of employee productivity, the data reveals that "Efficiency" stands out as the weakest parameter among the four identified. Consequently, the researcher proposes that companies address this issue by providing employees with workforce management tools. These tools can assist call centers in optimizing staffing schedules, predicting call volumes, and managing agent performance to enhance the overall efficiency. By ensuring that the right number of employees is available to handle customer inquiries, companies can minimize waiting times and elevate service levels. To achieve this, companies are encouraged to familiarize themselves with Call Center Software (CCaaS) platforms, which serve as centralized hubs for managing customer interactions, tracking call data, and optimizing



agent performance. In addition, companies may leverage other tools and software based on their specific needs and industries. This may include screen-sharing tools for remote collaboration, knowledge base software for quick access to accurate information, customer satisfaction survey tools for feedback collection, and chatbots for handling basic inquiries and directing complex issues to agents. The researcher further recommends effective task delegation as part of the strategy. Companies can efficiently allocate responsibilities to employees based on their abilities, experiences, and positions within the organization. This approach ensures that tasks are completed efficiently and accurately. Through the implementation of these strategies, companies can contribute to enhancing employee efficiency, leading to increased productivity, improved customer service, and ultimately, higher profits.

Both the independent and dependent variables in the study exhibit statistical significance, underscoring the researcher's recommendation for companies to invest in the enhancement and modernization of their physical work environments. An optimal physical work environment not only benefits employees but also contributes to heightened employee productivity, providing companies with a competitive advantage. This symbiotic relationship results in favorable outcomes for both the individual employee and the organization as a whole. Given that noise is the least noticeable among the sub-indicators of the physical work environment, and efficiency is the least observable among the sub-indicators of employee productivity, the researchers propose that companies adopt noise-canceling headphones. This measure aims to ensure that employees can respond to more calls without interruptions, thereby fostering increased efficiency in their work. This strategic approach aligns with the overarching goal of creating a work environment conducive to improved productivity.

Additionally, call center companies should prioritize ongoing training for their agents, placing emphasis on keeping them informed about new services, products, and processes. Equipping agents with this knowledge ensures that they stay current and can provide accurate and timely customer service. Moreover, companies may enhance their initial onboarding training to provide newly hired employees with a robust foundation that encompasses both organizational knowledge and role-specific skills. To offer practical insights into the various call types that employees may encounter, scenario-based training can be integrated into onboarding programs. This approach allows new hires to gain a clear understanding of their role, align themselves with their career trajectory, and mitigate role ambiguity through competency-based training. The researchers recommended the implementation of a Performance Management Program for call center agents to assess and enhance their performance. This initiative has the potential to improve customer service and heighten agent productivity. By fostering continuous learning and clear performance evaluation, companies can contribute to the professional development and effectiveness of their call center agents.

The researcher proposes that future investigations delve deeper into additional facets of the physical work environment that may influence employee productivity in the future. These factors may encompass aspects related to colleagues, safety measures, building design and age, cleanliness standards, and spatial considerations. To conduct a more



comprehensive study, the researchers also suggested expanding the sample size of the respondents. Increasing the number of participants for the questionnaire distribution can yield more robust data, facilitating a more in-depth exploration of the research problem. This approach aims to enhance the understanding of the multifaceted dynamics between the physical work environment and employee productivity.

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