

# A Study of Ergonomics' Effectiveness in Approved and Classified Indian Hotels

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## Abstract

**Background:** Due to growth of classified Indian hotels, there is a need to assess the importance of ergonomics in such hotels and check their awareness amongst the stakeholders of Indian hospitality industry. **Objective:** Describing and highlighting different practices and means of ergonomics. Ascertaining the importance of ergonomics in core, and non-core areas of classified Indian hotels and hotel management institutes based on the opinions and empirical data, highlighting its effects on employee efficiency and revenue generation of a hotel including the phase of "New Normal" after the Covid-19 pandemic. **Methodology:** Exploratory research design has been adopted where data has been collected via convenience sampling from Delhi NCR and Kolkata. Data has been collected from a sample of 100 individuals from employees and management of classified hotels and students and professors of hotel management institutes. Analysis was done with the use of MS Excel application. Perception has been recorded and studied. **Results:** As per the survey, majority, that is, 89% of the respondents agreed that ergonomics can increase the employee productivity and 91% acknowledged that ergonomics improve the revenue generation of hotels. **Conclusion:** Ergonomics is an irrefutable part of Indian classified hotels and steps need to be taken to improve the ergonomic standards.

**Keywords:** Ergonomics, revenue generation, productivity, new normal, hotels

## Introduction

Being one of the most popular destination countries, India has a thriving hotel industry (IBEF, 2024). Responding to the increasing demands, hotels of various luxurious as well as other brands are propping up to cater to and accommodate international and domestic guests. With increasing competition, it has been realised that apart from the aesthetics, the ergonomics of the architecture and the interiors of a hotel is becoming even more important (Sethi, 2020). The importance and benefits of ergonomics not only lies enclosed within the public areas or the front areas of the hotel. It is rather even more necessary in the operational areas (Mitra & Mukhopadhyay, 2022). Its crucial benefits have been acknowledged in the hotel industries of several countries. Management has not only started in actively

improvising on the configuration of the hotel but has also begun focusing on educating the bulk employees on the need of following new ergonomic standards.

Before discussing about the relevance of ergonomics in hotel industry, one first needs to comprehend the term ergonomics itself. As per the International Ergonomics Association, Ergonomics is considered as that scientific discipline which studies and understands the interactions among humans and different components of a system. The application involves theory, principles, data and methods of designing, optimizing well-being of the human resources and efficiency of the system (Middlesworth, 2021). Simply put, ergonomics is that subject which deals with the study

of spaces of various purposes like working, studying, eating, playing, etc. Ergonomics is concerned with the relationship between a human being and the rest of the elements which are present in a system of the working environment.

Ergonomics may sound modern and novel but on the contrary, it is a concept that has been developed and is under application since centuries. Since the beginning of the civilizations, human beings have had always strived for developing ways and tools which will convenience their ability to work. The advancements in such comforts are actually interlinked with the scientific, agrarian as well as industrial developments which further promoted the efficiency and competency of the manpower.

The concept of ergonomics was first founded by the Ancient Greeks but was in rather primitive stage. It is only in 17<sup>th</sup> century, Italian physician Bernardino Ramazzini related human pathology with workplace elements in his “De Morbis Artificum Diatriba”. The term “ergonomics” was finally coined by Polish scholar Wojciech Jastrzebowski in 1857. While Jozefa Joteyko addressed fatigue management in his publication under “The Science of labour & its organizations” (Sluchak, 2020).

Importance of ergonomics was popularized during the second world war by the American military which led to the establishment of International Ergonomics Association (IEA) in 1959. In 1996, IEA jointly with International Labour Organization launched “Ergonomics Checkpoints” for easier and efficient understanding. With rise of computer usage and IT industry in the 21<sup>st</sup> century, IEA in corporation with MNCs and other firms started integrating computers, software and even Artificial Intelligence with the principles of ergonomics. In 2013, the Bureau of Labour Statistics stressed on the maintenance of ergonomic standards in companies to avoid Musculo- skeletal disorders amongst the employees. Post-pandemic of the 2020s, there has been a rising trend observed in shifting towards work from home or hybrid setups involving both office spaces and homes (Edwards, 2022).

Nowadays, international competitions like ERGO CUP® and global accreditations are conducted to further promote the cause of ergonomics. ERGO CUP® encourages organizations from all fields of the world. It also involves Applied Ergonomics Conference. The stress is on the innovative ideas that the organizations have applied to have

a further more comfortable workplace for their respective employees (Matlis, 2021). In this way, more awareness and ergonomic improvement is implemented globally. In the ERGO CUP® 2023, Waterman won the Ergo Cup award for their product “Rotary Weld Fixture” which reduced the risk of MSDs by 95% (McWane, 2023). The month of October is celebrated as the Ergonomics month in the United States encouraging mass awareness and enabling the firms to follow ergonomics and reap its benefits (Ince, 2022).

#### **Knowing about Ergonomics and its Classification:**

Ergonomics can be categorized broadly into three main domains namely physical ergonomics, cognitive ergonomics and organizational ergonomics. Physical ergonomics deals with physical activities mainly and is most commonly observed. It involves routine shifts, working posture, MSDs, Box size used, etc. Cognitive ergonomics deals with the psychological aspects of the workspace which takes care of factors like mental workload, visibility, interaction, decision-making ability, communication, etc. Finally, organizational ergonomics deals with social and technical systems that affect the organizational culture. It deals with the aspects of company policies, job design, participation in roster management of the human resource (LightGuide, 2021).

#### **Ergonomics in Hotels (from Global Perspective):**

Ergonomics plays an indispensable role. When a hotel operates it involves several departments. The main function of a classified hotel is to provide accommodation and catering facilities of impeccable standards. However, the responsibility does not end there. Core departments like Front Office, Housekeeping, Food Production and Food & Beverage Services provide accommodation, foods and drinks to the guests. Apart from the four core departments, several non- core departments like Engineering, Systems, Reservations, Operators, Finance, Sales and Marketing, etc., also constitute the hotel and ensure its sustenance (Sethi, 2020).

As per a study conducted under the American Public Health Policy in San Francisco in 2002, it was observed that the hazards culminating from repetitive jobs and physical strain are the main issues of concern for the hotels. It was also observed that of all the typical departments of hotel industry, housekeeping reels the most under issues of ergonomic concerns followed by Food Production department (Mammen, 2022). More than 75% of the housekeeping employees of the San Francisco hotel industry complained of workplace-

oriented pain and other discomforts (Gross, 2019). This leads to reduction in the productivity of the employees.

In order to implement and ensure maintenance of ergonomic principles, the management of the hotel takes certain steps. Through Hazard Identification & Risk Assessment (HIRA) process, the risk factors are identified and carefully noted down. Such can be done either through guest as well as employee feedback platforms or by separately taking a thorough property tour (“Levels of ergonomic”, 2019). In developed nations like the United States of America, the management of any commercial establishment, is legally bound to provide ergonomically improved workplace to its employees. In the American Constitution, under the Occupational Safety and Health Act (OSHA) Section 5(A)(1), the employers are obliged to keep the workplace protected from any recognized serious hazards which include ergonomic hazards too (Hedge, 2013).

In India though, there is no clear provision in its Constitution to ensure the ergonomic standards of an organization till this date. Under its Factories Act of 1948, the employer has to ensure that the health, safety and welfare of the workers remain uncompromised (Majumder et. al, 2016). In 2020, its 25 labour laws had been combined into 3 distinct codes namely Social Security Code, Code on Industrial Relations and Code on Occupational Safety, Health and Working Conditions (OSH) (Cyrill, 2021) which was introduced into the Lok Sabha of India Parliament. To spread awareness and encourage implementation, OSH Expo is organized by Informa Markets annually. The event held at Mumbai is the largest one in South- East Asia which is related to Occupational Safety & Health (Exhibition Showcase, 2023) (Kumar et. al., 2017).

With new hotels coming up in India, it is necessary to check the awareness and the understanding of hoteliers of the importance of ergonomics in employee efficiency. It is necessary to understand whether ergonomics is related to improving revenue generation of hotels or not (Sethi, 2020). It is necessary to understand the effects of ergonomics on Indian classified hotels during “New Normal” phase post Pandemic lockdown as an example to realize the above statement. The study will lead to mass awareness amongst hoteliers regarding ergonomics and will be able control attrition rate while increasing employee efficiency and revenue growth in the hotels (Singh et. al., 2022).

## Objectives

- To assess the opinion of employees, management of the hotels, students and faculty members of hotel management institutes upon effectiveness of ergonomics.
- To check and create awareness on the importance of ergonomics in employee efficiency and revenue generation.
- To understand the effects of ergonomics on classified hotels of India under the “New Normal” conditions after the pandemic in order to realize its importance for sustaining hotels in India.

## Methodology

**Research Design:** The research began with an explorative study through the communication conducted with the respondents.

**Locale:** Delhi NCR and Kolkata

**Sampling Design:** This study incorporated inputs from 100 randomly selected respondents which included 12 management trainees, 43 employees from hotel and food retail outlets, 15 members from the management, 3 faculty members from hotel management institutes, 22 hotel management students and 5 consumers. The purpose was to record their perceptions, opinions, judgments and their observed data regarding the importance of ergonomics in the hotel industry. The respondents were collected through convenience sampling which had a mix of aforementioned categories. The methodology has been used in the works of Mitra and Mukhopadhyay (2022) titled, “The impact of ergonomics on the productivity and performance of hotel housekeepers” on the impact of ergonomics on the productivity and performance of hotel housekeepers (Mitra et. al., 2022).

**Tools and Technique:** The research methodology constituted of a survey wherein a questionnaire was involved with the motive of directly interacting with the respondents. If required, the interaction also involved giving the respondents an idea about the ergonomics before initiating the survey. The questionnaire consisted 31 questions of which one was an open-ended question which allowed the researcher to collect the aspect of each respondent. As is evident, the share of quantitative primary data in this survey is more than that of qualitative data. Similar methodology of understanding importance of ergonomics via its effect during pandemic has

been observed in the works of Singh and Singh titled, “The impact of ergonomic practices on housekeeping employee retention and efficiency in hotels during COVID-19 in India” wherein they worked on the effects of ergonomic practices on employees of housekeeping department during COVID pandemic (Singh et. al., 2022).

**Data Analysis and Statistical Analysis:** The primary data has been collected from the survey conducted on respondents and has been analyzed tabulation and diagrammatic representation with the assistance of MS Excel Application.

## Results and Discussions

**Demography of Respondents:** As per table 1, 47% of respondents were associated with hotels with 34% being trainees and students under training, survey has been done on a sample of diverse mix.

**Table 1: Socio- Demographic Data of Respondents**

Organization	Percentage	Department name	Percentage
Hotel management institutes	31	Students	22
		Hotel management institute professors	3
Hotels	47	Management trainees	12
		Human resource management	12
		Front office	11
		Housekeeping	6
Food retail outlets	22	Food & beverage service	10
		Food production	4
		Management	15
		Consumers	5

**Table 2: Opinion of Respondents on Various Aspects about their Job and Role of Ergonomics in Hotel Workspace**

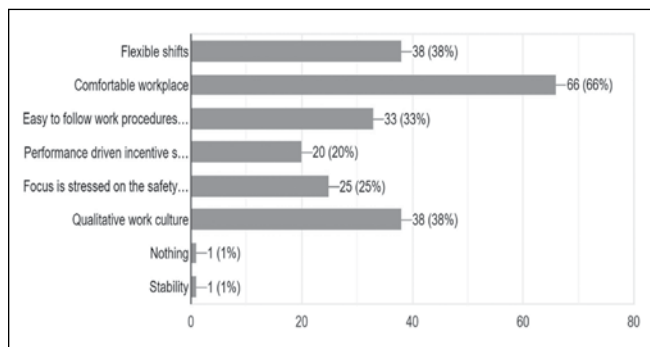
S. No.	Statement	SA	A	N	D	SD
		%	%	%	%	%
1	Job involving heavy machineries	5	21	29	34	11
2	Job involves high amount of physical mobility	16	17	33	24	10
3	Job involving computers	51	27	11	11	0

S. No.	Statement	SA	A	N	D	SD
		%	%	%	%	%
4	Workplace accidents avoidable via proper ergonomics and maintenance	21	49.5	20	9.5	0
5	Ergonomics is important for employees' welfare and workplace efficiency	58	36	5	1	0
6	Improved ergonomics can reduce employee turnover	42	35	19	4	0
7	By following ergonomic principles, hotels can significantly improve its employee productivity	59	30	9	2	0
8	Importance of selection of masks for workplace	54	37	9	0	0
9	By following ergonomic principles, hotels can significantly increase its revenue generation	46	45	9	0	0

**Note:** SA- strongly agree, A- agree, N- neutral, D- disagree, SD- strongly disagree

As per table 2, more than 50% of the respondents acknowledged the importance of ergonomics behind the employee productivity and revenue generation of hotels. Majority of the respondents were aware and had a positive opinion regarding the importance of ergonomics in improving employee efficiency and revenue generation of hotels. Figure 1 shows that 66% regarded “Comfortable workplace” as the most appealing factor. Majority value workplace comfort, that is, ergonomics over others as a criterion in choosing a particular workplace. Figure 2 shows the main factors which hinder the comfort of the employees while working was wearing masks. The most agreed issue has been Breathability issues with a massive 76% agreement. In the new normal, ergonomics has been vital in the survival of hospitality industry. Mask, which is regarded as a protective equipment whose main job is to prevent infection can significantly affect the efficiency of the respondents.

**Figure 1: Workplace Appealing Factors**



**Figure 2: Issues Faced in Wearing Masks**

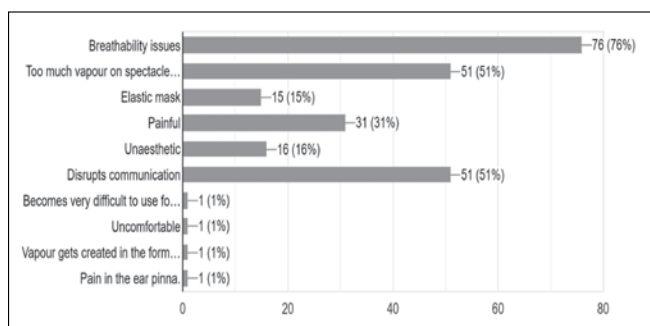


Table 3 shows the average hotel occupancy during the months of July & August in 2021 based on the empirical data and observations of hospitality employees. It shows that average occupancy is above 60% and around 70%. The main purpose of new normal protocol is to maintain hygiene and prevent infection. Such is done so that along with the guests & customers, the employees too can serve safely, comfortably and efficiently. A safe employee who is able to work comfortably plays a vital role in drawing in more sales and in maintaining higher occupancy in the hotels. Therefore, hotels and hospitality units that followed both safety rules and relevant ergonomic principles have seen substantial rise in sales even in the early stages of post- lockdown relaxation in the pandemic era.

**Figure 3: Average Hotel Occupancy Percentage in the Months of July & August 2021**

Percentage Occupancy	Percentage
80% or above	22.5
60% or above	46.1
40% or above	25.8
20 % or above	6
Below 20%	4

Ergonomics is necessary not only for productivity improvement but also for improvement in revenue generation. Therefore, it is an extremely important subject to be considered by the management. With better ergonomics, hospitality employees can work more comfortably and more efficiently. This can help them to stay more focussed at their jobs which in turn will drastically reduce workplace accidents. Therefore, not only employee satisfaction gets boosted but lesser funds will be diverted to undesirable causes like accidents or consequences of higher attrition rate (Groenewald, 2023). This way, the revenue generated can be focused more on core operations and on strategies to attract more clients. Similarly, hotels with ergonomic interiors will lead to a more comfortable stay of the guests which will improve its brand image and thus assist in spreading “word- of- mouth” popularity (Rajput, 2022). Ergonomics is therefore an integral part of hospitality industry wherein it can lead to lesser workplace accidents, low turnover rate and higher revenue growth. Its necessity has increased manifolds in the post pandemic era, wherein hotels are experiencing uncertain times and good brand image in terms of hygiene and comfort has become absolutely necessary (Rahman et al., 2017).

Similar result has been mentioned that the employers are aware about the importance of ergonomics in housekeeping (Mitra et. al., 2022). Such has also been observed in the works of Singh and Singh (2022) wherein they mentioned that working on ergonomics and updating standard operating procedures during pandemic has resulted in far reaching positive effects for employees’ welfare. However, their study is contrary in terms of significance of ergonomics behind employee retention and shows that the effect of ergonomics in employee retention is less, provided that they themselves are suffering from job insecurity and therefore continue working irrespective of the ergonomic standards of the hotels.

During survey, recommendations have undergone enlisting. While certain areas are actually observed which can undergo ergonomic improvements, the respondents too were requested to provide suggestions on improving the hotel or hospitality unit. A better communication can be established by the means of meeting and active feedback of the staff. Make sure every suggestion is thoroughly assessed and then react to it. Clear communication and creating space for healthy interaction, communication and compassion. It always advised to consider the employee’s working conditions to be checked on a regular basis; but on my personal note it should be

converted as a mandate for every organization to think about their employees and how they work. Starting from the work area, cafeteria, wash rooms and even in the changing rooms, ergonomics of a person should be considered first.

Ergonomics in an organization can be improved by making the employee's working hours limited and asking them as to whether they are enjoying their working place and also taking their opinion in any major decision that is being taken about the hotel. In housekeeping department, ergonomics should be a major focus. Public area cleaning and room cleaning involves lot of body motion from bending down to standing up all the day long. Individuals working in housekeeping department should be introduced with new advanced equipment for cleaning and other purpose, so that the work is done in an effective and efficient manner with maximum output. It has been observed that in front office, the staffs often work while standing for long hours. This can be reduced through provision of seating arrangements with height adjustments so that they adjust themselves according to the height of the reception desk.

There is a need of incorporating the modern principles of ergonomics into the standards of the hotels. SOPs should be made in such a manner that it allows optimum comfort to the employees while at work. There is a need to modernizing the standards in many hotels. Such will automatically improve the ergonomics. Regular sessions and demonstrations need to be organized such that the employees become habituated and comfortable with the improved standards. There must regular provision of breaks at fixed intervals to reduce job repetitiveness. Jobs can be made dynamic through alteration of duty rosters and cross- exposure in other departments.

Off- duty yoga sessions can be organized regularly to prevent Musculo- skeletal disorders (MSDs) from developing further. Those who work with computers or are engaged in sedentary jobs need to be encouraged to take small frequent desks. Also, steps need to be taken to check strain by rectifying sitting posture, along with repairing blinking screen, etc. There must proper ergonomic architectural designs incorporated into hotels like proper illumination, carpeted floors or with slip-resistant tiles, smooth- round tables at bar, etc.

A formal channel to pass on issues related to ergonomics should be organized, so that ignored scopes can be brought under limelight without much delay. Implementation of ergonomics can be done encouraging even the ground staffs

to follow. Such can be achieved by organizing regular training sessions as well as through appraisal. Certification process can also be enabled under a hospitality association which has India-wide or even world- wide recognition. This will encourage all the hotels as well as hospitality units to implement the necessary ergonomic designs and procedures.

## Conclusion

Role of ergonomics is infallible when it comes to healthy sustenance of hospitality industry in India. With new hotels coming up with high frequency, it is vital that the ergonomic principles are implemented and standards are maintained in the new properties to ensure higher productivity and better revenue generation. Since ergonomics is an integral part behind the success of any hospitality unit, hotels need to seek ways of improving the same. Finally, it can be said that ergonomics is always evolving with new necessities and trends. Therefore, in order to be successful, hotels and hospitality organizations need to upgrade themselves as per the current principles of ergonomics.

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