ERGONOMICS PRACTICES OF HOTEL HOUSEKEEPING EMPLOYEES –A STUDY OF FIVE-STAR HOTELS IN NCR

Thesis Submitted For the Award of the Degree of

DOCTOR OF PHILOSOPHY

in

HOTEL MANAGEMENT

By

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Under the Supervision of

Name of the Supervisor

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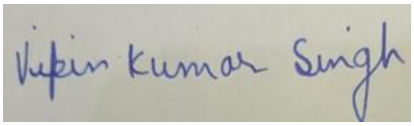
LOVELY PROFESSIONAL UNIVERSITY
PUNJAB

2022

DECLARATION

I hereby affirm that the thesis entitled, "Ergonomics Practices of Hotel Housekeeping Employees –A Study of five-star Hotels in NCR" has been prepared under the guidance of Dr. Amrik Singh, Associate Professor (School of Hotel & Tourism Management) at Lovely Professional University, Phagwara, Punjab is exclusively my work. There are no collaborators and it does not contain any work for which a degree/diploma has been awarded by any other university/institution or fellowship previously .



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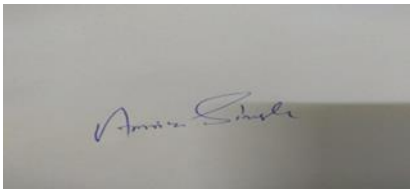
CERTIFICATE

This is to certify that the thesis entitled, "Ergonomics Practices of Hotel Housekeeping Employees –A Study of five-star Hotels in NCR", embodies the work carried out by Mr. Vipin Singh and under my direct supervision and guidance in Hotel Management. Lovely Professional University, Phagwara, Punjab. The current work is, to the best of my knowledge, the result of his investigation and analysis. No component of this work has ever been submitted to a university for any other degree. The thesis is deserving of study and meets the requirements for the Doctor of Philosophy in Hotel Management degree.

Date-17/06/2022



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ACKNOWLEDGEMENT

I'd like to thank **Dr. Amrik Singh**, a respected research guide, for his guidance during the duration of this study. His amazing guidance helped me make this research successful at every stage.

I'd want to express my deepest gratitude to **Dr. Govindasamy Viswanathan,** the **Vellore Institute of Technology's** founder and chancellor, for his constant guidance and encouragement.

I would also like to thank my expert members, **Dr. Sandeep Walia**, COS, School of Hotel & Tourism Management, **Lovely Professional University**, **Dr. Jata Shankar Tiwari, Dr. Sanjeev Sharma, Dr. Parvinder Kaur**, **Dr. Pooja Choudhary, Prof Nurmahmud Ali, Dr. Naveen Talniya, Dr. Arvind Tomar, Prof Manikant Roy, Dr. Ekta Bhatnagar, Dr.Vikrant Kaushal, Dr.Suvojit Ganguly** (For Giving me confidence on regular intervals), **Prof.B.Ravishankar, Dr. Sana Maidullah** for reviewing my research work at various stages and providing their expert suggestions, which helped me to improve my research from all perspectives.

I would also like to special thanks to **Dr. Vishal Soodan & Dr. Aruditya Singh Jasrotia** for their impeccable guidance and support. Their's indispensable guidance helped me resolve the confusion and overcome the difficulties that cropped up during my research. I have disturbed both of them a lot during my scholarly journey.

I would also like to extend my gratitude to Prof. Sanjay Modi, Pro-Vice-Chancellor, Lovely Professional University. I am also thankful to all the **academicians, scholars, Research With Fawad, Prof. Neeraj Kaushik**, **Geetika Mam**, and **authors to whom I have referred and quoted.** Last but not the least, I take this opportunity to thank the **Great Divinity** for blessing me and giving me the courage to think clearly and work in the right direction. I would like to thank my **Parent**, **Mrs. Reetu Singh(Wife), Ms. Varnika Singh (My Lovely Daughter),** and the **Manogaran Family** who have rendered their whole-hearted support at all times for the successful completion of my Ph.D.

Vipin Kumar Singh

PREFACE

The main purpose of this study is to find out which ergonomic practices influence housekeeping staff retention and efficiency in hotels, as well as what obstacles exist in implementing ergonomic practices in hotels. A framework was proposed to investigate the relationships in this case. " The study's backdrop and the state of the hotel sector in India and the national capital region are described in Chapter 1. The evaluation of literature, background on the topic, and need for the study are all presented in Chapter 2. The literature on the health and safety of housekeeping personnel, ergonomic practices, risk assessment and management, pandemic response control, and organizational performance, in particular. The need for the study is identified by the relationship between numerous variables connected to housekeeping ergonomic practices, employee retention, and employee efficiency. The methodology of the investigation is covered in Chapter 3. It gives an overview of the research design as well as a description of the research instrument development process. This chapter describes the sample characteristics, data processing procedures, and limitations of the current investigation. The process for measuring and validating various constructs is described in Chapter 4. The demographic profile of the respondents is presented in the first section of the chapter, while links between various constructs are studied in the second half. The impact of independent variables on dependent variables is also measured in this chapter, and the hypotheses posed are tested. Discussions of the outcomes from the application of statistical techniques and tools were developed in Chapters 5 and 6. The relationship between the independent and dependent variables was examined and discussed. It discusses the findings, their ramifications, and their conclusions. It also goes through the possibilities for future research.

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Abbreviations

M.S.D – Musculoskeletal disorders

W.H.O - World Health Organization

U.N.E.S.C.O- The United Nations Educational, Scientific and Cultural Organization

A.D.R- Average Daily Rate

Rev PAR- Revenue per available room

I.L.O- International Labour Organization

S.P.S.S- Statistical Package for the Social Sciences

N.O.I.D.A- New Okhla Industrial Development Authority

H.R.A.C.C.- Hotel and Restaurant Approval and Classification Committee (HRACC)

G.O.I- The Government of India,

N.C.R- National Capital Region

Fig.-Figure

E.U- European Union

C.D.C- The Centers for Disease Control and Prevention

R.A.C- Risk Assessment & Control

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ABSTRACT

The present study examined the relative importance of housekeeping ergonomics practices factors regarding employee retention, efficiency, and satisfaction levels with their present employer in NCR's hotels and the subsequent effect on the organizational performance of the respective hotels. Based on a review of literature, the most significant attributes examined in context with housekeeping ergonomics practices were selected. The study listed factors that affected housekeeping services & practices i.e.working conditions, employee health, and safety, risk assessment & control, and pandemic response plan. These attributes were examined and checked for validity & reliability through the application of the measurement model. Excel and SPSS tools were applied to examine the relationship that exists between housekeeping ergonomics practices and employee retention and employee efficiency. The relative importance of each factor in determining employee retention and satisfaction and its role in achieving organizational performance was evaluated and barriers to implementing ergonomics practices also have been discussed in the study. In order of importance, "Working conditions ", "Employee health and safety ", "Risk assessment & Control" and "Pandemic Response plan " were the most influential factors of housekeeping ergonomics practices that lead to employee retention and satisfaction. Likewise in order of importance, "Employee engagement", "leadership style", "Workplace engagement" and "Job enrichment" were the most influential factors to boost individual and organizational performance. Employee health and safety, efficiency, and satisfaction had also been found to have an incremental role in organization performance. The study examined the barriers to implementing ergonomics practices. Management barriers, employee barriers, and the Absence of ergonomics policies of the regulatory body (HRACC).

Furthermore, constraints and implications for theory and practice were suggested based on the findings.

CHAPTER 1: OVERVIEW

1.1 INTRODUCTION

A hotel is a large establishment that consists of numerous units that work together to make the guest's stays as pleasing as possible. The most important department in the hotel is housekeeping, although housekeeping is the hotel's strength and backbone, research has primarily focused on front-facing areas such as a front desk and restaurant services. It creates a feeling of home comfort for the hotel residents. Among the hotel's different divisions, housekeeping is one of the most important. It is also one of the hotel's largest departments. A luxury hotel is a huge structure with a variety of amenities such as large dining spaces, banquets, swimming pools, and clubs, as well as a large back area with laundry, staff cafeterias, bunkers, lockers, numerous stores, administrative departments, and food manufacturing units, among other things. The hotel staff faces a problem in maintaining the cleanliness, maintenance, upkeep, and design of these places. As a result, hotel housekeeping splits its labor into two categories: public spaces and back regions. Public areas are the areas where guests are freely allowed to go whereas back areas are the places inside the hotel where only employees have the permit to go. Further, establishing hospitality professional services is decisively important to a hotel's performance, reputation, guest satisfaction, loyalty, and finally profitability **(Pongsiri K 2012).** Managing the cleanliness, maintenance, upkeep, and decor of the huge five-star hotels is a challenge in itself **(Bhatnagar & Nim, 2019).** This chapter discusses the current scenario of the hospitality industry in India and the reasons behind studying the housekeeping employees of the hotel industry. This research aims at identifying the value of housekeeping's ergonomic practices and their influence on employees' retention and efficiency.

This chapter describes the following:

- Background of the Study
- Hotel Industry in India
- Hotel Industry in National Capital Region
- Current Scenario of the Hotel Industry
- Research Problem
- Significance of Proposed Research
- Organization of Thesis

1.2- **The Study's Background**

With the expansion of large towns, improved sea transportation, and the introduction of railways, the hotel industry as we know it started in the 19th century. During the reign of the Mughals, forts and their environs would often care for the needs of travelers in exchange for little more than a description of their journey's exploits or any update from neighboring cities and towns they went through. In India, monarchs, and emperors of the ancient and medieval times built resting houses called sarais and Dharamshala on high roads. Political and religious movements highlighted the need for greater and enhanced facilities to meet the diverse requirements of society's many classes. The imprint left by people belonging to many cultures and people that ruled India can also be attributed to the development of catering in India. The majority of the new sophisticated hotels were run by Western families. In 1799, the Bombay hotel first opened its doors. Kolkata got modern hotels thanks to the British. John Spence's first was a hotel. Spence's, Asia's 1st hotel, first inaugurated its opening to the world in 1830.ITDC now offers a full variety of tourism services, including lodging, dining, relaxing, and shopping, as well as hotel consulting, mandatory shopping, and an in-house travel agency. The Taj, the lake estate in Udaipur across Lake Pichola, and the Rambagh Palace in Jaipur, which was built at the

height of Royal glory, were all linked. In the year 1903, Mr. Mohan Singh Oberoi leased the Carlton Hotel in Shimla and renamed it Clarks Hotel in 1927. During the years 1975 and 1977, three Welcome Group Hotels were developed, all of which were non-franchised and based on the tagline "Be Indian, Buy Indian." These hotels, however, embraced the Sheraton method in 1978, hiring expatriates to update staff training and apply the Sheraton management style without signing a management contract. As an outcome, the Welcome Group was off to a great start.

In 2010, India accommodated the Commonwealth Games in Delhi. As a result, the hotel industry in India has expanded. In December 2014, The number of foreign tourists who visited India in 2014 was 7.46 million, up 7.1 percent from the previous year. The Indian Rupee remained reasonably constant against the US Dollar, hovering around 61/$ on average during the year and closing at 62/$ at the year's end. In 2019, 10.89 million overseas tourists visited India, up 3.1 percent from the previous year, according to the tourism ministry's notification to Parliament.

The structured subsistence of the hotel industry in India started growing during the colonial period, with the introduction of Europeans. Hotels were introduced by the Britishers and the British and Swiss were running most of the hotels in India. Before that, the concept of Dharamshalas was quite familiar in the country. Many heritage properties were taken over by India’s premier hotel groups such as East India Hotel company known as ‘Oberoi’s’ and Indian Hotels company known as ‘Taj’. These hotels established a luxurious standard of service and quality and established their business outside India as well.

1.3 HOTEL INDUSTRY IN INDIA

This industry is the fastest-growing industry in both our country and the world **(Prasanna, 2013).** Rendering to the 'WTTC,' the tourism industries have grown up at a rate of 3. percent each year, outpacing the global economy by 2.5 percent over the past nine years. This industry employs a large number of people. In the last five years, the

tourist industry has created one out of every four new employment **(World Travel and Tourism Council, 2019).** The hotel and hospitality industries are among the finest in terms of "FDI," or foreign investment. Figure 1.3 depicts a group of countries in a significant market with the potential to become new tourism households in the next ten years. To make our nation India a Global tourism hub, there are numerous constructive steps taken by the Indian Government. Also, the facility of 'e-tourist visa' has been made operative for citizens of 161 countries since April 2017. Initially 'e-TV i.e. e- Tourist Visa' was for 113 nations but now it is extended to 161 nations. Such initiatives lessen the gap in cultural diversities and promote tourist inflow. The hotel trade of our nation flourishes principally due to the augmentation in tourism and travel. With the growing trend in our economy at a rate of 7% per annum, it is widely expected that there may be a shortage of hotel rooms in an organized setup. Regarding the endeavors from foreign nations, in the upcoming five years period, as many as 40 international brands of hotels are said to enter**. (Hotel Sector Analysis Report, 2020**).

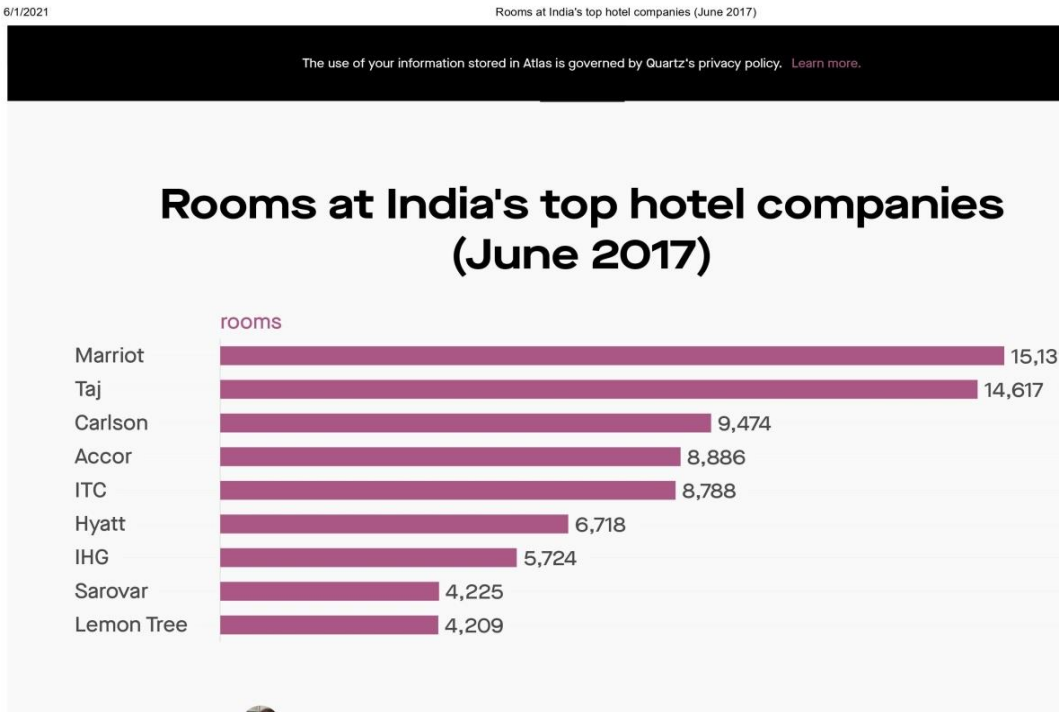


Figure 1.1- **Top hotel companies in India,2017**

Source :(https://theatlas.com/charts)

In the coming time, the demand-supply gap will be widened in India and there would be a need for more hotel rooms. The scarcity of rooms will be predominantly in the segment of budget and economic hotels. Most travelers seek comfortable, secure, and budgeted hotels. Many national, as well as international hotel brands, have already made major investments in the budget hotel segment and it is expected that more hotel companies will follow this trend. Also with the increase in digital bookings, a rise in demand is expected. India has become a favorite investment hub for the world's finest hotel chain. There are many international hospitality chains whose presence has already been felt recently in the span of a few years

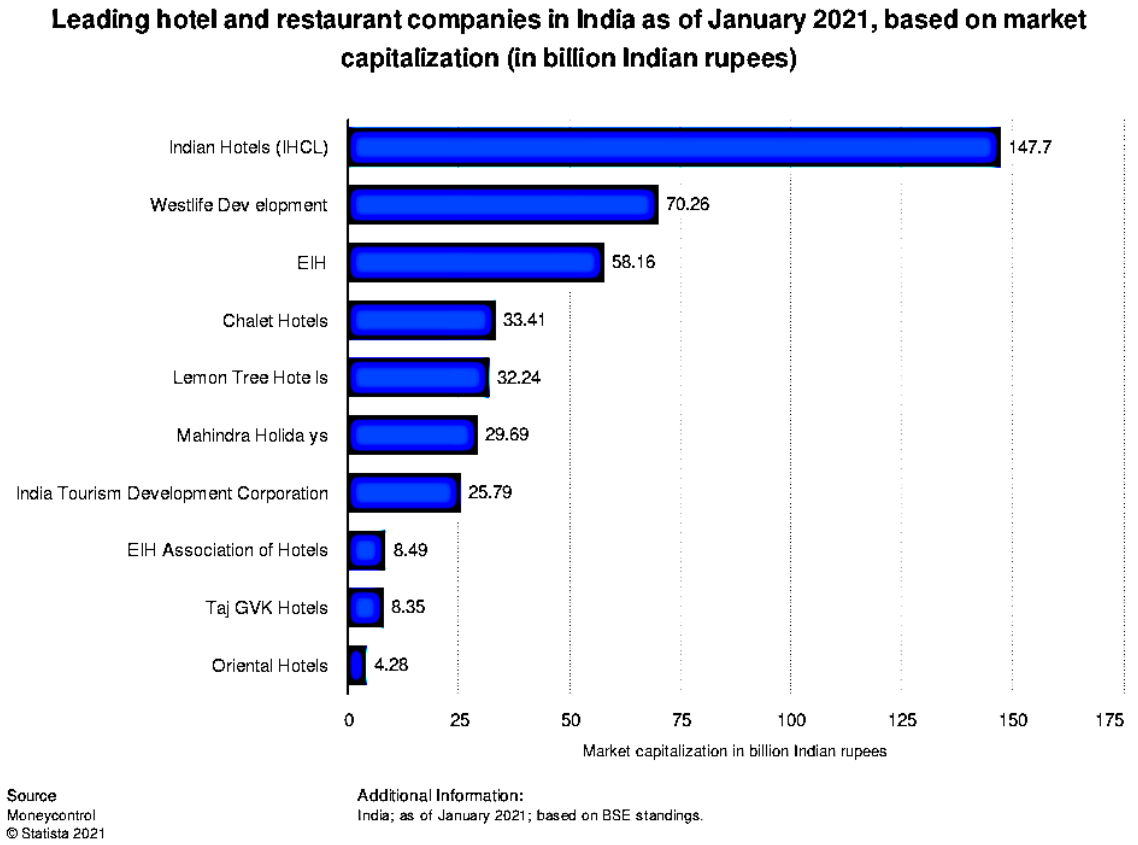


Figure.1.2- Market Capitalization (in billion Indian rupees)

Source: (www.moneycontrol.com)

As per the **India Glance statistics (2019),** the total number of approved hotels in India has increased to 1, 02, 490 rooms already.

1.4 According to star classification of Hotel,(HRACC's guidelines)

The hotel's criteria are indicated by the star. The star rating is determined by the Indian government's Department of Tourism. **The Hotel and Restaurant Approval Classification Committee (HRACC),** Which was formed by the GOI's Ministry of Tourism, is accountable for the star grading of hotels. HRACC examines the hotel after obtaining the request form, checks the criteria, and evaluates the hotel. The Ministry of Tourism specifies the amenities that must be supplied in hotels of various star categories. 5*Deluxe, 5*, 4*, 3*, 2*, and 1* are the six-star grades.

HRACC's members are as follows:

• Secretary, Ministry of Tourism, GOI

• Regional Director of Tourism, Ministry of Tourism, GOI

• One person from the" Federation of Hotels and Restaurants of India ", who is usually the respective zone's Secretary (of the four zones).

• One Travel Agents Association of India (TAAI) representative, usually the Secretary of the local region.

• Principal of the regional Hotel Management Institute • Director of Tourism for the concerned state

(If any of the six members are unavailable on the day of the visit, they may send their representatives.)

1.5 FUTURE OF THE HOTEL INDUSTRY IN INDIA

According to the forecast of 'WTO i.e. World Travel Organization' by the year 2025, the hospitality industry will assume a huge shape and will emerge as almost tripled in its size. With expectations of 4 million tourists visiting India, there is anticipation that the growth rate is projected at 8.8%. As per Indian tourism statistics, "the total number of Foreign Tourist

Arrivals in the year 2019 was 10.89 Million in India, increasing an annual growth rate of 5.2%." Figure 1.1 shows the foreign tourist arrivals, non-resident Indians, and international tourist arrivals in the years 2016, 2017, and 2019.

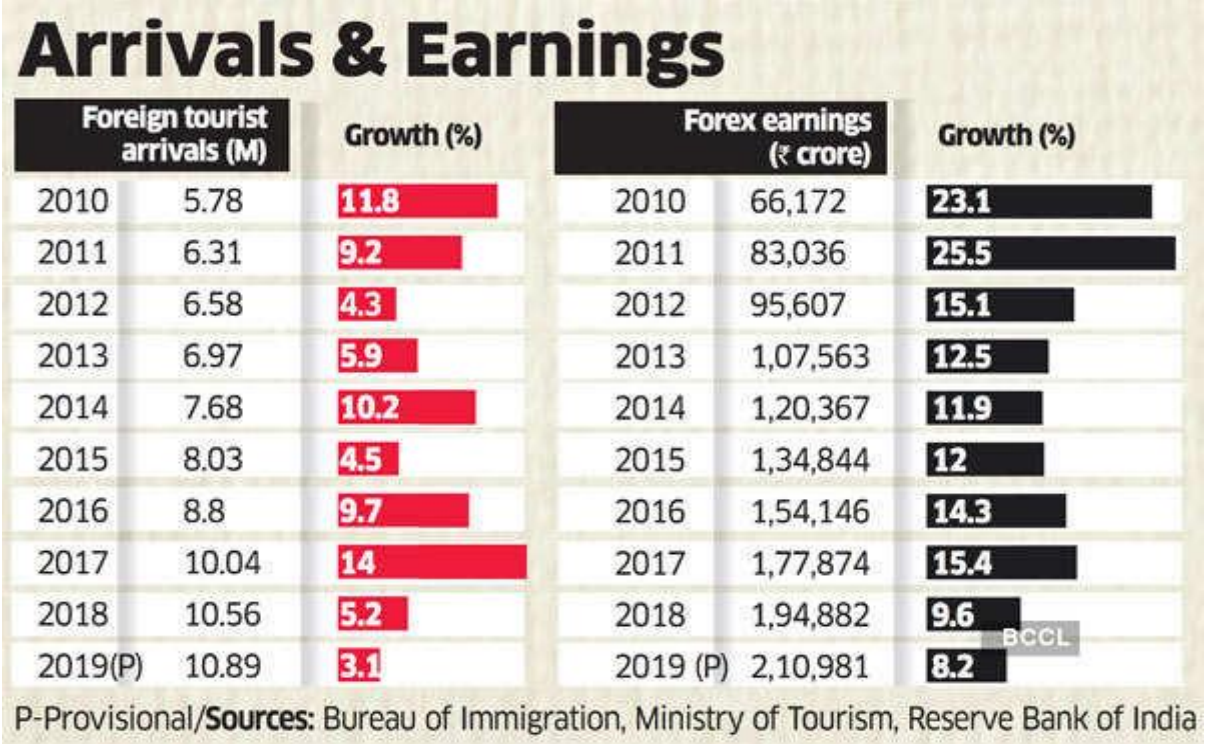


Figure 1.3: Inbound Tourism in India

Source : **(Ministry of Tourism, 2019)**

As projecting tremendous growth of the hospitality sector, it is forecasted that there will be a huge requirement for trained hospitality professionals in the coming years, thereby triggering impressive careers for hospitality students. India's continuous Economic changes are enhancing the conditions for the Hospitality and Tourism sectors to thrive. As a result of the numerous prospects available in this industry for foreign investors, international hotel chains are lining up in India, Worldwide tourist appearances are predicted to reach 30.5 billion by 2028, generating about US$ 59 billion in revenue. The Indian government has taken many initiatives to boost the industry's profitability and appeal. Tax Holidays, a single-window

mechanism for obtaining numerous authorizations and grants at the federal and state levels to decrease bureaucratic oversight. The hotel sector has constantly grown at a rate of 14 percent as a result of these activities. As a result, the Indian hotel business has a huge potential for expansion. Globalization, which is labeled as the "economic reforms of the entire planet through the removal of blocks to open trade, has become one of the causes of the rise of the hotel industry in India. It is a historical act of transporting at a rapid pace in various industries and regions **(Joshi,2005).** The liberalization of international trade, the rise of FDI, and the development of huge past commercial flows are generally acknowledged as imperative features of globalization. As a result, global marketplaces have become more competitive,**(Varshney and Bhattacharya, 2009).** Large organizations with names like International Company, Multinational Corporate entity, and Transnational Corporation dominate several industries. 65,000 multinational corporations (MNCs) with over 8 lakh subsidiaries account for a large portion of global industrial investment, production, employment, and job **(Cherunilam 2009).** Hotel Companies often decide the desire for increased globalization among multinational hotel companies **(Barker and Aydin, 1994).** Global hospitality companies are flocking to India in a variety of ways **(Beamish, 1987),** The predicted gains for the respective countries were analyzed, including growing the economy, rising inflation employment, learning & support growth, domestic industry expansion through strategic partnerships, and founding national peace and political steadiness. Access to capital, marketing information, rules, tax relief, stable economic circumstances, and a qualified human resource pool are among the company's requirements. However, in the Indian market, these hotel brands have a marketing philosophy and adopt slightly different marketing strategies. Worldwide hotel chains pitch for advanced equity in India, **(Verma, 2013)**. This opportunity is tapped by the overseas hotel chains which see India as a favorable destination for development and survival **(Varma, 2009).**

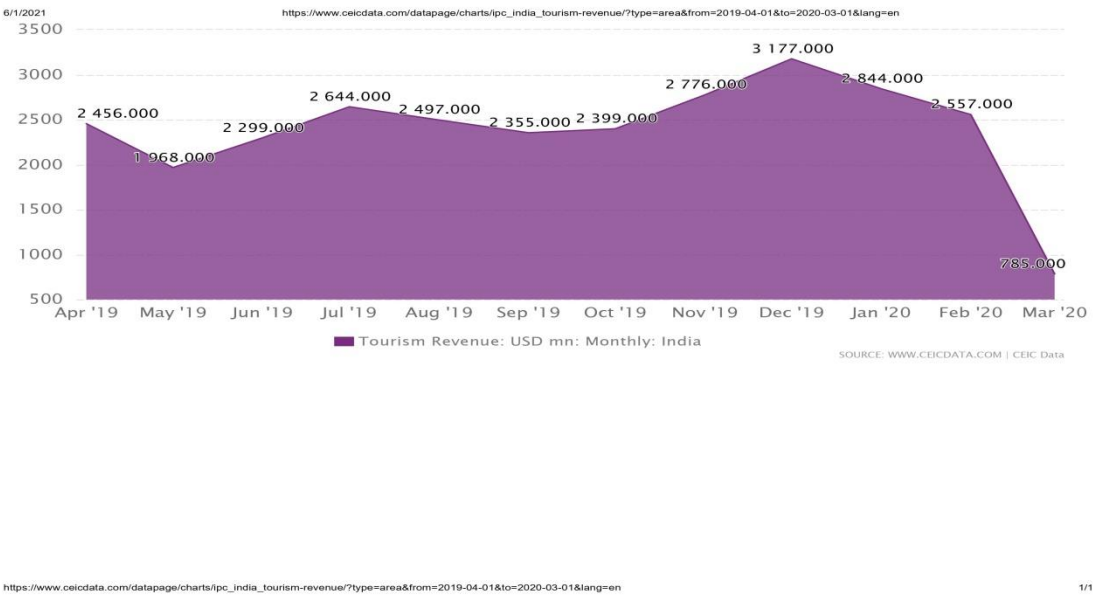


Figure-1.4- India's Tourism Revenue USD mn: Monthly: India

Source**:(www.cbcdata.com)**

1.6 Hotel Industry in National Capital Region

Delhi NCR has an oversupply of rooms (about 16,000 rooms) that has resulted in a decrease in occupancy and Average Room Revenue **(ARR)** between FY13 and FY14. Gurugram is a prominent business center in the National Capital Region. **(Report on India Ratings and Research, 2014) Hotels** in Delhi, NOIDA, and Greater NOIDA are included in the Delhi-NCR region. Delhi, India's administrative capital, is home to several government agencies and embassies from across the world. In addition, the city is considered one of the country's most important commercial centers. Over the recent decade, the federal government has tried to improve infrastructure. The city also serves as the country's aviation hub, with Indira Gandhi International Airport providing connections to places across the country and beyond the world. NOIDA and Greater NOIDA have been developing as industrial centers for just over a decade, and as a result, developing marketing has been paying attention to the area in recent years. The total room count for 2015/16 is 1,10,293, up from 1,00,390 in 2014/15, according to the FHRAI Indian Hotel Survey HVS Report- 2016The poll participant population has expanded by 5,170 rooms since 1995/96 when it grew from 120 hotels with about 18,000 known brands rooms to a historic 887 hotels having 1,13,622 rooms in 2015/16. The HVS survey also shows that the Economic Survey of India 2015-16 predicted a 7.6% GDP growth for the country last fiscal year. The Services industry proceeded to serve as the main pilot of the financial system, recording 9.2 percent growth during the past year.

Figure-1.5- National Capital Region‘s Map

Source :(www.mapsofindia.com)

1.7 Current Scenario of Hotel Industry-The hotel and tourist industry faces numerous challenges. The industry hopes that the government will provide a stimulus package to help them reclaim their former grandeur. After all, India's this sector employed 8.1 percent of the workforce and contributed 9.2 percent to GDP in 2018. It has weathered the universal downturn of 2007-9, the 2009-10 H1N1 pandemic, and even current worldwide economic downturns. According to authorized statistics from the Ministry of Tourism, India, it logged 14, 99,417 Foreign Tourist Arrivals (FTAs) in January 2020, up 7.5 percent from 13,94,347 in January 2019.

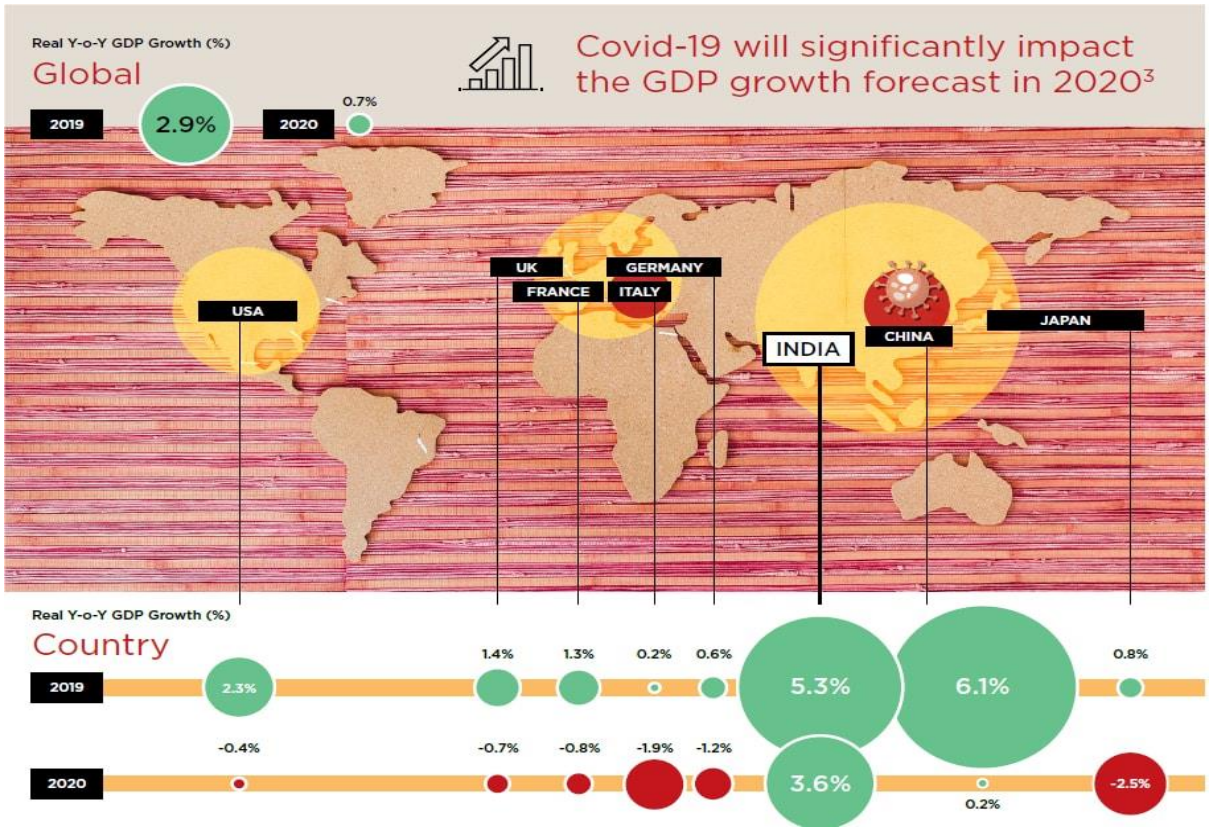


Figure-1.6-Covid 19 impact on the world‘s GDP

Source: (IMF, RaboResearch, MacrobondS)

1.8 Impact on Covid19 & India's hotel sector -

The hotel business has been hit particularly hard by the Covid-19 epidemic, with the claim at an all-time low. Worldwide tourism advisories Travel permit deferrals, and the execution of Section 144 (prevention against mass assemblies) ought to place India, similar to the rest of the world, on lockdown, with unprecedented implications.

• Foreign inbound tourism has come to a standstill, with little prospects of a speedy comeback.

• Foreign visitor arrivals (FTAs) into India (particularly leisure travelers) began to soften, while the spread to other countries proceeded apace.

• Demand from FTAs is unlikely to increase very soon.

Local Travel Will Be Vital to the Restoration Of Hotel Industry -

The Covid-19 The spreading of the virus in India has sparked widespread concern, with the ramifications projected to last well into the second quarter of 2020. Domestic flights will end on March 25, 2020, After a great year in 2019, the Indian hotel industry is expected to get an even brighter year in 2020. At the end of February 2020, the nation commenced to feel the current effects of the worldwide Covid-19 crisis, and the situation intensified in early March. According to our estimations, hotel occupancy in major cities has decreased 45 percent over the last year. The business has never experienced such a drastic drop in such a short time. Total occupancy in the premium hotel sector is probable to fall 16.7%–20.5 percentage points in 2020 compared to 2019. The revenue per available room (RevPAR) will drop from 36.2 percent to 31 percent.

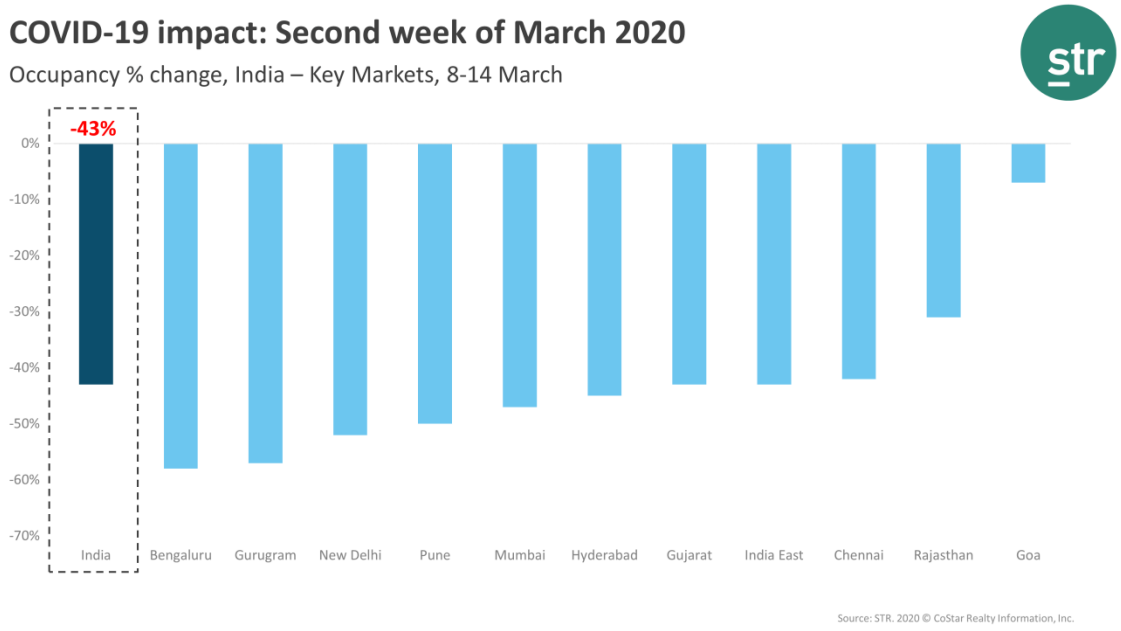


Figure-1.7 –Covid-19 impact on India's hotel occupancy percentage

Source: (www.str.com)

As a consequence of the unanticipated COVID-19 endemic, hoteliers must adjust to fluctuations in consumer demand and regain travelers' trust. Because the COVID-19 problem is expected to have far-reaching consequences for hotels everywhere in the world, scholars should work to enlarge theory and understanding in this vital business.

1.9- **Research Problem-**

Although numerous studies have been conducted in various other hotel departments that generate direct revenue, such as food and beverage services, front office management, human resource management, and employee training and learning, the department of housekeeping has been largely ignored, with only a few instructions in the literature. Hence, this study determines to explore the ergonomic practices of the hotel industry in the metropolitan area

'This complete approach to prospective ergonomics encompasses workspace and gear design, including the aesthetics of working conditions influenced by increased evidence processing and continuously changing organizations. An ergonomics is thus an interdisciplinary attitude involving researchers from a variety of professions who are unified by the same aim.". **(UNESCO, 1992).**

When an internal guest (employee) is satisfied and happy, it is apparent that the hotel will receive repeat business. The hotel will get the benefits of a happy staff. The relevance of housekeeping ergonomics practices at the hotel should be recognized, as this will aid hospitality professionals in designing, organizing, and implementing the housekeeping department's facilities and services effectively.

1.10- Introduction of Ergonomics -" Ergonomics focuses on improving health, efficiency, career progression, and safety while reducing fatigue and injury and a well-designed job should not hurt employees." **(OSHA,2020)**

Definition and Applications

The Greek words ergon (labor) and nomos (science) are combined to form the phrase ergonomics (also known as human factors) is a discipline that blends theory, concepts, data, and procedures to improve human well-being and total organization performance. The study and practice of ergonomics are not domain-specific, even though many specialists specialize in certain economic sectors, industries, or application domains. "Ergonomics is a user-centered, cross-integrating subject. Because the challenges discussed are often globally applicable, it employs a holistic, comprehensive approach to design and evaluate tasks, jobs, services, surroundings, and processes by methods, concepts, and data from a variety of fields. Musculoskeletal, psychological, social and technical, organizational, environmental, and other important elements, as well as interconnections between individuals, the environment, tools, products, equipment, and technology, are all considered" **Bridger, (2018).**

Ergonomics Principles

.Its guiding principles are based on the following key values:

- Employees as assets
- Expertise as a medium to assist employees,
- Quality of life,
- Respect for all, and
- Accountability to all stakeholders.

Figure 1.8- Common risk factors related to Hotel Housekeeping

Source : (https://lodgingmagazine.com)

1.9.1 Physical Strains and Hazards

Hotel cleaning staff are disproportionately subject to a significant number of job dangers, which can have poor health consequences. A housekeeper routinely deviations body

position every 3 seconds although cleaning one room during an 8-hour shift, resulting in 8000 different body postures. Housekeepers are subjected to significant aerobic strains, large static muscle loads, numerous uncomfortable postures, and overexertion due to time pressures connected with fast-paced labor. They are also more susceptible to repetitive motion injuries than other sorts of labor. Housekeepers have the greatest risk of musculoskeletal diseases of all hotel personnel, which is unsurprising **(Hanger. et al.,1989).**

1.9.2 Chemical Threats

"Hotel cleaning staff are often exposed to cleaning substances such as ammonia which exasperate the skin, eyes, nose, and throat. Long-term exposure to these volatile organic chemicals can result in eczema, respiratory problems, and cardiovascular failure"**(Stellman JM,1998)**

1.9.3 Psychosocial Hazards

Aside from biological risks, psychological anxiety, the menace of violence, and harassment can have a resilient conclusion on the psychological and physical health of hotel housekeepers. Nine of the World Health Organization's ten major work environment psychosocial problems are associated with work features of hotel housekeepers: (1) (2) stress level and pace: increased time pressure; (3) work schedule: rigid timetables, lengthy shifts; (4) job content: high lack of certainty; (5) environment an undesirable workplace environment. equipment(6) Organizational and functions: Low rates of backing for problem-solving and personal expansion, as well as lack of communication. (7) Social interaction: social or physical isolation, strained relations with managers, social isolation, racism, abuse, and provocation are all examples of workplace interpersonal connections. (8) career advancement: low pay, work insecurity, the low social worth of labor, and few opportunities for promotion as well as 9) Work-life match: balancing multiple priorities at home and work, such as high work-related physical strain. (10)Long-term acquaintance

with poor psychosocial workplace circumstances can result in physiological, behavioral, emotional, or cognitive responses, which can lead to cognitive problems such as depression, despair, and other psychological disorders. **(Leka S, Griffiths A,2003)**

1.11-. **Significance of proposed research**

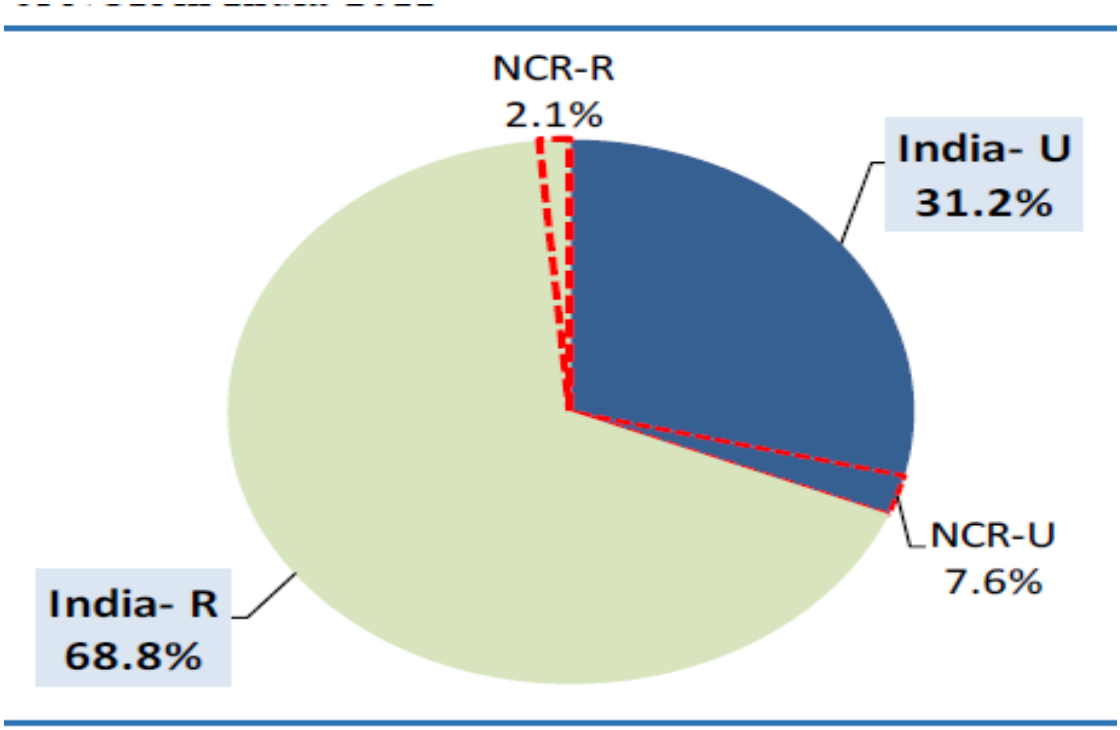
The hotel's housekeeping department takes care of keeping the hotel warm, clean, and comfortable to offer "a home away from home." The fundamental purpose of housekeeping is to offer guests pleasant, pleasant, and clean surroundings for them to feel that they are getting their money's worth. There is no other service that can match the level of comfort that housekeeping delivers to guests. A room can generate revenue over and over again because once it is sold, it can be resold after cleaning. However, if the accommodations remain unsold, there will be a noteworthy income loss. As a result, it becomes clear that rooms are more fragile than food. The housekeeping service goes to great lengths to make a positive impression on hotel guests. The strongest message sent to guests to confirm the hotel's image is cleanliness. The contribution of the housekeeping service to the overall picture of the hotel property is wonderful and enormous. **"It is a 24-hour and 365-day operation,"** as correctly stated. The hotel's housekeeping department is one of its most important departments. The housekeeping department's tasks are limitless, that is why it becomes the duty of hotel organizations to take care of hotel housekeeping and their well-being. The conclusions of the study will help academicians and hospitality experts in the National Capital Region and around the world gain new insights. Evaluating the direct and indirect effects of housekeeping ergonomics methods would revitalize the hotel's operations. It would aid in the department's standardization of all processes and procedures. It would also allow the hotel to concentrate on the areas that are more complicated and require attention. The study's findings will help society comprehend the importance of housekeeping, one of a hotel's most crucial departments. Travelers want a clean, germ-free, and pleasant environment, thus every member of the staff must be physically fit and willing to follow directions.

Many studies have been done on the many aspects of the housekeeping department, but few studies show the relationship between housekeeping ergonomics practices and employee retention, efficiency, or performance. With these considerations in mind, this topic has been developed to fill up the gaps in the literature.

HVS Suryey emphasized that Gen Y (those born in the 1980s and early 1990s) employees make up a significant share of the hotel's workforce currently. Because of the huge array of options available to them in today's hyper-connected global environment, this generation is thought to be more impatient, prone to losing focus and easily distracted. Employee retention and efficiency are thus major concerns; nevertheless, by developing and implementing strong ergonomics practices and retention programs, brands can better embrace the strengths of next-generation employees. Long work hours and a lack of work-life balance are two of the key reasons behind the new generation's disinterest in the hotel business.

1.12-**Scope of the Study** –

The National Capital Region (Delhi, Gurugram, Greater Noida, and Ghaziabad), which has a populace of further than 16.6 million citizens, will be the focus of this hospitality study. The National Capital Region (NCR), sometimes referred to as Urban Areas, serves as the country's political, financial, and academic center. The right blend of technology, design, and cultural growth may be located in the area. The per capita income of the NCR's several sub-regions varies greatly. The NCR now has the difference of being the "world's largest urban agglomeration," accounting for 7.6% of the country's urban population. **(2014, www.indianexpress.com)** The research carried out in the National Capital Region will provide new insights to academics and hoteliers in the region on how to improve housekeeping services and procedures to achieve high employee satisfaction and organizational performance.



Source- Census of India, 2011 (Provisional)*

Figure-1.9- Component of urban and rural population for NCR in India-2011

Source: **(Census of India,2011)**

1.13. **Organization of Thesis**

This thesis comprises six chapters as followed:

Chapter 1 Overview

The first chapter covers the study's background, the hotel business in India, the hospitality industry in the National Capital Region, the current state of the hotel industry, the research challenge, and the relevance of the proposed research. This introductory chapter essentially provides in-depth information on the issue. It familiarises you with the state of the Indian hotel sector and its growth prospects. It also emphasizes the importance of the hotel's cleaning service and focuses attention on the small details that must be attended to meet organizational objectives. It also highlights the persisting research gap in the hospitality research areas.

Chapter 2 Review of literature

The other chapter discusses past studies on the topic of the thesis. This chapter studies based on perceptions of ergonomics practices in the hotel industry, housekeeping ergonomics practices with employee satisfaction, organizational performance, relationship studies on housekeeper's efficiency & retention with employee health and safety factors, and barriers to the establishment of these practices related studies in the hotel industry were discussed widely. The literature review assessment is done through books, academic articles, and other sources relevant to the subject of research. A review of literature is an important aspect of any research. It gives a strong base to accomplish the research. It provides a framework to set objectives for the current study. Through prior studies, the researcher can find out the constructs for the present study. It not only provides a theoretical background to the study but also helps in finding out research gaps and research limitations from previous studies. It provides observations of previous theoretical and experiential research on the meaning and dimension of housekeeping, areas of ergonomics practices, retention and employee efficiency, and organizational performance. This chapter offers the details and background of the constructs involved in this study.

Chapter 3 Research Methodology

The third section explains the research methodology of this study. This chapter comprises objectives of the study, development of research hypothesis, research design, survey approach, population, Sample Frame, research questionnaire design, statistical approach, and finally data analysis techniques were discussed. This chapter shifts the emphasis from the theoretical domain to the operational domain with the explanation of different methods adopted for hypothesis testing in the present study. This chapter clarifies the process of population selection, research frame, variable selection, and construction of research questionnaire, testing of research questionnaire, research methodologies adopted for collection of data, actual data collection, and processing procedure. A quantitative approach was adopted with the self-constructed questionnaire for the collection of responses. This chapter also explains the statistical methods applied to this study, details of reliability and validity of the scale, the main analysis, characteristics of the sample, and methods of dealing with response bias. This chapter discusses the road map or the blueprint of the methods being followed in the preparation and conducting of the research.

Chapter 4 Data Analysis

The various statistical techniques and tools framed in chapter 3 were evaluated in this section and the consequences were demonstrated. Data study is one of the crucial components of the research. Based on the analysis of the information, the inferences, consequences, and discussions are dependent. This chapter labels the analytical techniques used in the study to find out inferences. It discusses the graphical representations of the demographic profile of the respondents. It provides a detailed analysis report on the content and constructs validity and reliability of the research. It also explains the main technique utilized for the analysis of the study. Various statistical methodologies & techniques were utilized in the analysis of the data which was based on the research methodology being planned.

Chapter 5 Discussion of Outcomes

The results of the study's data analysis are discussed in this chapter. The study's aims were articulated in the form of research hypotheses. It presents the findings of the study's hypotheses.

Chapter 6 Conclusion, Implication & Limitations

This chapter completes the study, through the conclusion of the results, managerial repercussions of the study, limitations, and suggestions of the study. It also states the assumptions of the study and lists down the future scope of the study as well. At last, a comprehensive statement of all the references consulted and studied was depicted.

CHAPTER -2: REVIEW OF LITERATURE

2.1. INTRODUCTION

Quality research cannot be accomplished without the support of rigorous studies, previous academic research articles, and other sources. Previous research projects, whether published or unpublished, are a great way to draw conclusions and plot a course for the entire study. An inclusive review of the literature is a prerequisite for the conception and execution of a project. Understanding preliminary studies, identifying research gaps, formulating hypotheses, including exploring published studies on similar topics to avoid duplication of work are all benefits of reviewing past literature. This chapter gives a summary of previous research on aspects that are relevant to the current topic. The goal of researching earlier literature was to have a better knowledge of current research on the topics included in this study. The following sections of this chapter have been used to organize the review of literature:

- Perception of Ergonomics Practices
- Ergonomics Practices & Hotel Housekeeping Practices
- Ergonomics Practices & Employee Retention
- Ergonomics Practices & Employee Efficiency
- Ergonomics Practices & Employee Wellbeing
- Covid 19 impact on Hotel Housekeeping
- Barriers to implementing Ergonomics Practices
- Summary

- **2.2. Perception of Hotel Housekeeping & Ergonomics Practices**

Definitions of Ergonomics Practices. The world is no longer readily divided into three categories: medical, safety, and hazard mitigation. Almost every branch of the manufacturing and service industries has worked hard in the last decade to improve efficiency and quality. Employment conditions have an impact on one significant economic indicator of productivity: the costs of absenteeism due to illness. As a result, by paying more attention to the development of working environments, it ought to be possible to increase productivity and quality while reducing absenteeism". **(International Labor Organization, 1983)**

The term "ergonomics" is derived from the Greek terms "nomos" and "ergo," which mean "rule" and "work," respectively. Ergonomics may create "rules" for a more forward-thinking, future-oriented design approach. Future ergonomics, in contrast to "possible remedial ergonomics," is based on applying ergonomic recommendations while also considering business profits. **(Laurig, 1992)**

"Ergonomics is the skill of appropriate tasks to employees rather than compelling employees to adapt tasks to them." **(Schneider, S. 1995).**

"Ergonomic issues at the workplace, as well as poor work organization, are contributory potential risks to occupational health and safety issues. Using control measures, on the other hand, is advantageous not just to workers. The advantages to companies are also substantial. Employees who are in good health can be roughly three times more productive than those who are not. Such advantages for employees and companies are both obvious and quantifiable. Employee turnover, poor quality, and other expenses of neglecting these basic principles could be incurred." **(Shengli Niu, 2010)**

"The basic demands for an individual's employee's cognitive, physical, and cultural wellbeing are addressed through ergonomics applications". **(Karwowski, W. 2005)**

“Ergonomics refers to the practice of couture Instead of familiarizing work and working environment to employees' physical needs, necessitating an insufficiently constructed workplace environment. Ergonomics is a vital aspect of occupational wellbeing practice that requires workers to adjust **“(Niu, S. 2010).**

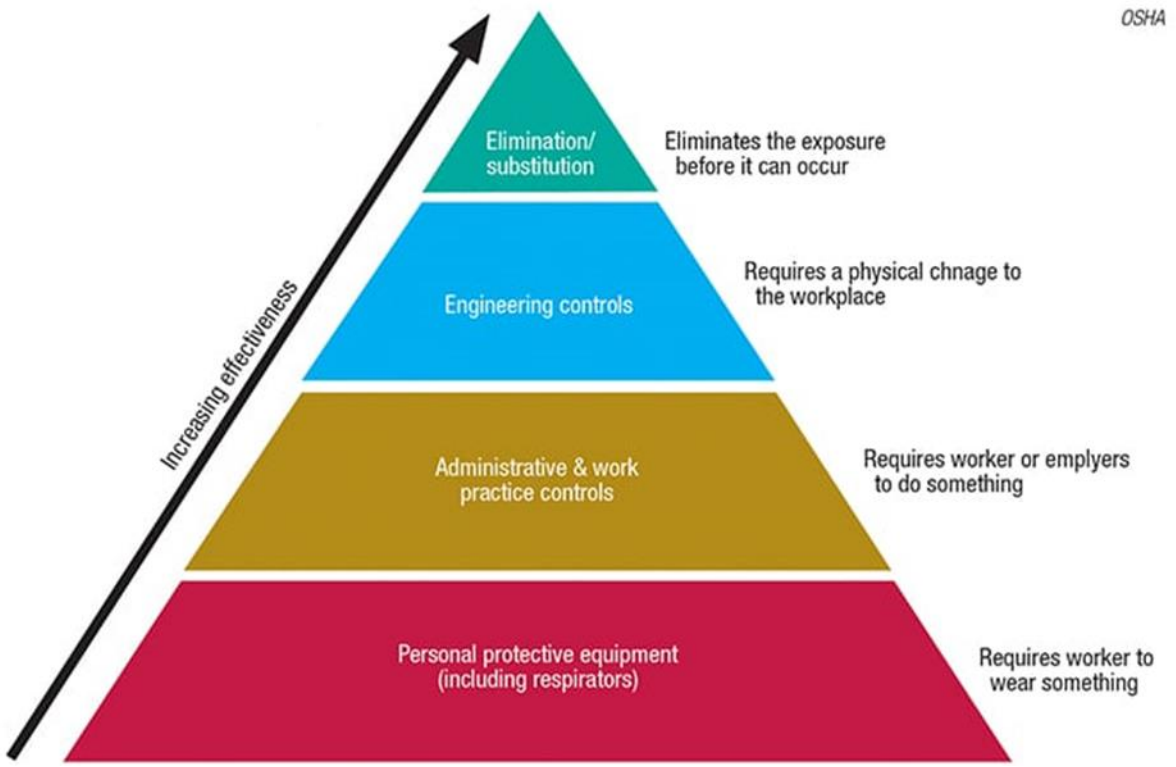


Figure-2.1- OSHA’s hierarchy of controls

Source- **Osha.com**

“Ergonomics is the study of how people work. Human factors, such as human beings, were involved, constraints in terms of human safety and well-being, as well as total human well-being performance in specific work environments” **(International Ergonomics Association, IEA 2000).**

“Ergonomics' main purpose is to create a good fit between employees and their tasks to maximize worker comfort, safety, and health, as well as productivity and efficiency. Previous ergonomic research has related workstation design to worker efficiency and safety." **(Mustafa et al.,2009),**

To remove dangers and align job demands with worker competencies, ergonomic principles are then included in the strategy of tasks and workspaces. The hazards assessment and verification aspect of the risk assessment process is described in the ergonomics process. **(Brophy, M., & Grant, C. 1996)**

2.3. • Ergonomics Practices & Hotel Housekeeping Practices

Housekeeping is a physically difficult job. For the comfort and convenience of guests, they clean and sanitize spaces. The majority of the time, there are a lot of concerns linked with hotel maintenance that go unreported. Dusting, vacuuming, pulling bed linens, and making beds are all responsibilities of the housekeeping staff. Cleaning restrooms and other areas, squeezing spray bottles, and disposing of waste. Housekeepers are particularly vulnerable, as their injury and sickness rates are higher on average for other service workers **(Buchanan, et al 2010)** Physically demanding job circumstances, such as those requiring bent or twisted positions, stagnant or dreary duties, and a hastened effort speed has been linked to musculoskeletal injuries and diseases in various studies. **(Kerstin Ekberg et al., 1995).**

A substantial amount of low workers labor in the hospitality industry, the majority among whom work in housekeeping (**Krause, Rugulies & Schreyer, 2005).** Cleaning services provided by hotel housekeepers are required by all accommodation establishments. Depending on the sort of accommodation facility in issue, this service differs **(Raghubalan & Raghubalan, 2009).** Housekeeping services are compulsory 24 hours a day, 365 days a year at five-star hotels **(Jones, 2007).** One of the most substantial service requirements demanded by guests in most hotels is the cleanliness of guestrooms. As a result, the housekeeper's function is vital to providing excellent facilities and maximizing hotel profits **(Faulkner & Patiar, 1997),** because they have little regulator over their work and there is a lack of productive engagement with leadership, housekeeping employees are excluded from the formulation of these standards **(Woods & Viehland, 2000).** According to studies, supervisors are not supportive of housekeepers **(Kensbock, Jennings, Bailey & Patiar,**

2013; Sonmez et al., 2013). Additional studies have revealed unbalanced pay for housekeepers' contributions. Their qualms might be justified, as multiple types of research have shown that coercive managerial behavior alleviates housekeepers' anxiety about job performance. If these issues had been addressed, hotel operations could have improved **(Kensbock, Jennings, Bailey, & Patiar, 2013; Krause, Rugulies, & Maslach, 2010).**

According to **Sturman (2006),** housekeepers utilize cleaning chemicals regularly, and their performance is measured in terms of how much cleaning chemicals they use. The amount of chemicals employed, on the other hand, varies depending on the room type, whether the guest is staying or leaving, the number of rooms cleaned, and other external factors. Workplace injuries aren't the only problem for hotel housekeepers, as the literature reviewed in this study discusses a slew of additional difficulties. Ethnicity **(Premji& Krause, 2010; Yap, 2011),** bilingual employee recruitment, multicultural training **(Manoharan, Gross, & Sardeshmukh, 2014),** and absence from the shift are just a few examples **(Yap, 2011; Mest, 2013)**

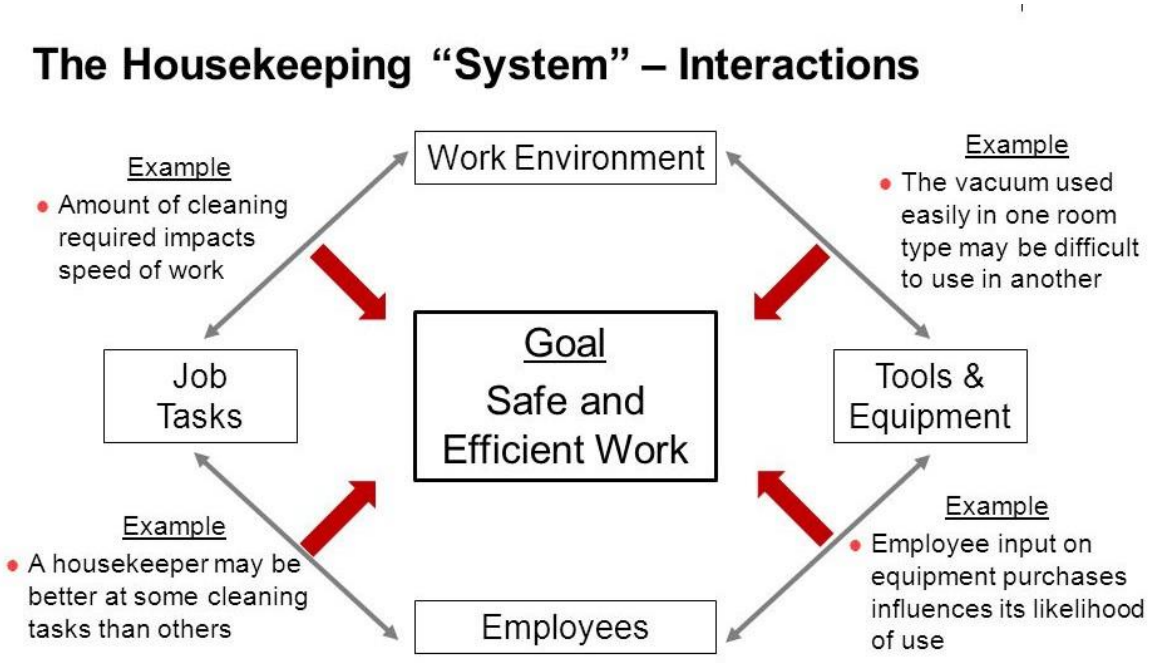


Figure-2.2-**Risk factors for hotel housekeeping**

The physical workload of hotel housekeepers cleaning dust, cleaning toilets, vacuuming, cleaning floorings, reinstalling Filling maid carts with linen as well as other supplies, emptying bins, cleaning and replacing linen, wiping, cleaning toilets, vacuuming, cleaning floors, and reinstalling facilities are all part of the service. **(Oxenbridge & Moensted 2011).** Work-related injury and illness cost the world economy 3.9 percent of GDP, or 2,680 billion euros a year, according to the International Labour Organization. **(EU-OSHA, 2017)**

The quantity to be maintained is determined by management, and it differs from place to place owing to labor contracts. **(Krause et al., 2005**). Housekeepers are prone to suffer a variety of ailments if their workload surpasses the daily limit of 15 rooms to clean **(Mest, 2013).** There is a strong correlation between shoulder discomfort and mental occupational qualities, **(Burgel, White, Gillean, and Krause 2010**). Work-related stress, time restrictions, and payment systems are all important predictors of musculoskeletal injury risk factors. **(Oxenbridge & Moensted, 2011).**

Hotel employees are more prone than other service workers to get injured on the job and to suffer more serious injuries **(Buchanan et al., 2010).** Employees' legal rights under employee pay regulations and OSHA requirements are not well understood., as well as language obstacles, distress of harassment, or an absence of knowledge of valid rights below employee pay laws and OSHA standards, all contribute to the non-reporting of injuries. **(Buchanan et al., 2010).** "Regardless of the costs associated with work-related musculoskeletal diseases, these injuries represent a huge cost-cutting opportunity because these mishaps are generally curable, and in many cases avoidable," **(Amell & Kumar, 2001).** Making beds, moving housekeeping carts, carrying and pulling down weights, cleaning toilets, vacuuming, dusting and cleaning, garbage pickup, and moving furniture are six jobs that might lead to injury. **(Landers & Maguire, 2004).** Musculoskeletal problems are common among hotel housekeepers **(Montross, 2013).** Prior research has been dedicated to well-being requirements, but little has been done on management's compliance with these standards. FurthermoreInsufficient research has been conducted on the occurrence of pain in hotel workers based on race. The societal atmosphere, ergonomics, and workplace safety threats are all influenced by ethnic background, gender, and the employer. **(Buchanan et al., 2010).** The hotel's rooms and public areas are cleaned by housekeepers. Hotel housekeepers are

responsible for meeting visitors' demands and providing amenities 24 hours a day, which involves a three-shift schedule and a huge staff. Because cleaning departments indirectly lead to hotel expenses and revenue, they become more efficient when their quality is consistent **(Hsu, Ho, Tsai, & Wang, 2011).** Cleaning is a low-skilled job that demands meticulous attention to detail, client connection, and a lot of physical effort to complete tasks. Any hotel's housekeeping department is its backbone. Cleaning chemicals for bathroom basins can exasperate the skin and cause breathing difficulties **(Sonmez, Hsieh & Apostolopoulous, 2013).** Other potential hazards of unpredictable biological waste include respiratory problems, cancer, and damage to the kidneys and reproductive organs from solvent-based **items (Stellman, 1998).** Biological dangers such as cleft glassware and medical leftover by visitors can spread infectious diseases like hepatitis **(Makulowich, 1996).** Psychosocial difficulties are occupational stress caused by substantial assignments mixed with time constraints. To make matters worse, hotel housekeepers are underpaid and undervalued by their superiors. **(Hsieh, Apostolopoulous & Sonmez, 2013).**

Housekeepers face several ergonomic challenges linked to gear and materials every day, but they must guarantee that accommodations and toilets appear spotless at the very least on the outside surface level **(Raghubalan & Raghubalan, 2009)** because researchers have not endeavored to shield such study projects, there is insufficient evidence on the index of discomfort among hotel housekeepers. According to one study, the most common occupational health condition is musculoskeletal problems of the neck/shoulders, arms, elbows, and wrists **(Schleifer et al., 2002).** A direct association between ergonomics and psychological stress is expected to be discovered. To put it another way, the existence of ergonomic techniques minimizes stress perception. Furthermore, through the intervening variables of person-environment fit and control, an indirect, negative link between ergonomics and psychological stress is expected. The term "person-environment fit" refers to a workplace that is tailored to the demands of the employee. As a result, the presence of ergonomic practices promotes a good perspective of one's fit in the environment Ergonomics has been a more crucial health and financial practice in the work in recent years. Despite the mental benefits, ergonomic programs are becoming more popular among businesses as they want to reduce medical costs, Workers'accident compensation claims, and reduced productivity as a result of physical harm and suffering of workers **(Mansfield & Armstrong 1997)**

According to **(Lazarus 1994)** Stress is preeminent observed as a human-environment interaction, with the occurrence of stress governed by an individual's perception of the situation. Workplace organization, working time arrangements, a variety of work schedules, working hours, and overtime can all be detrimental to workers' health. Changes in work schedules are connected to variations in well-being. **(De Raeve et al., 2007).** Because it focuses primarily on physical features of employment, such as force, repetition rate, and posture, ergonomics is commonly misconstrued. **(Brian Pearce, 2003).** Psychosocial issues are frequently overlooked and misinterpreted. Superficial modifications in management, societal climate, organizational dedication, and job stress all have an impact on employees' health. Addressing these apprehensions at work will enhance employees' well-being and have a long-term impact on company results. **(Lohela et al., 2009).**

- **2.4. Ergonomics Practices & Employee Retention**

The hotel sector faces challenges at the organization, operational, and technical levels, A substantial amount of low workers labor in the hospitality industry, the majority among whom work in housekeeping **(Krause, Rugulies & Schreyer, 2005).** Many organizations, including hotels, have neglected to address occupational health and safety (OHS) issues. Safety and wellbeing data, which can be used to recognize hazards, evaluate performances, enhance, and find safety designs or trends have been missing from the hotels, leading to an absence of facts on workplace safety. The lack of data and understanding regarding safety in the office, as well as deprived health and safety regulations, are significant works in the event arising of occupational-related accidents, infections, and infections. According to the International Labour Organization **(ILO, 2015),** they often do not have much employment security, employees who approach their employers with complaints about their precarious employment are more prone to suffer, and the company's high turnover rate prevents many employees who otherwise invest in upgrading their workplace conditions.

Cleaning staff does not have the opportunity to form social interactions with their co-workers because the industry is facing rapid employee turnover. Since so many employees are hired on a limited contract, the situation at their workplaces is always changing, and many contract employees do not believe they're a part of the organization. According to **(Seifert,2006)** The insecure nature of the job, as well as the increased workload, has a disproportionate impact on working relationships and can cause social problems among employees., who seek self-protective tactics, sometimes at the expense of their co-workers. The high absence rate, for example, can cause stress among co-workers because the surviving co-workers must take up the jobs of the absent workers. According to **Woods et al., 2006,** 26% of respondents in their study rated training in the sector as "extremely inadequate," "extremely informal," and "too short." Participants in the focus groups agreed that training was necessary for some tasks, such as machine setup and operation. According to a study by **Bello et al. (2009)**, the symptoms like asthma increased due to the higher intensity of the task (due to time pressure, frequent staff shortages, etc.), the cleaner told colleagues. Can't ask to help or to help them get the job done on time. According to **(Messing, 1998),** It's probable that they won't be subjected to any health and safety training or information sessions hosted by the host organization. They are usually overlooked when purchasing or planning decisions are made because of their unique position within the organization. However, cleaners must be involved in any workplace health and safety promotion efforts and are advised on any decision that may have an impact on their health and safety.

(Haynes, 2008) intended to evaluate how office comfort affects occupant productivity. According to the findings, there is a link between an office's physical comfort and its occupants' productivity. According to the author's review of the literature, there is sufficient sign to support the claim that workplace comfort boosts efficiency. **(Wickens, 2004). Sanders, 1993** also applies ergonomic principles in the workplace to employees and organizations by reducing physical and mental stress, reducing the risk of occupational diseases and accidents, and increasing worker productivity. **Kopelman et al.1990** mentioned Workplace elements, all have an impact on employee satisfaction which lead to employee retention in an organization. It's important not to disregard the following factors: which prevails in an organization's working environment, relationships at work, and treatment of individuals at work

2.5. • Ergonomics Practices & Employee Efficiency

According to **Cole,2002** Employee-driven factors also include the advancement of the organization's strategy, According to **Roelofsen,2014,** disputes and absenteeism are reduced, and productivity is increased, when the working environment is improved. Many workplaces, on the other hand, may have subjects with safety, well-being, and ease, such as inadequate lighting and exposure to air, excessive noise, and alternative excess. Employees who are compelled to work under inhumane conditions are likely to be less productive. This could be the case because employees must cope with numerous challenges that risk their protection, such as excessive noise, operating hazardous, and working in hazardous surroundings **(Yankson, 2014). Sundstrom et al. 1994** mentioned before and after office renovations, 2391 workers from 58 different sites were used to study the influence of office noise, job fulfillment, and job performance ratings. The noise bothered somewhat more than half of the workers (54%) regularly, with the most common sources being people conversing and phones ringing. A noise disturbance was also linked to job frustration and dissatisfaction with the environment, for many firms, increasing employee productivity has long been a top priority. Its because higher employee productivity benefits the company, the person, and the personnel as a whole. Increased productivity, for instance, helps to promote revenue performance, huge profits, and social progress **(Sharma & Sharma, 2014).**

Baily et al., 2005; Hill et al., 2014; Wright, 2004 stated that increased efficiency tends to optimize managerial competitiveness finished rate reductions and improved high-class production. All of these benefits have increased employee productivity to new heights. As a result, tracing its origins is crucial for assuring the organization's long-term viability and success. **Alborno, N., Gaad, E. (2012)** says removing and eliminating barriers at work, considering the requirements of employed persons with incapacities, and providing chances for social involvement and inclusion are all key components in a worker's well-being and satisfaction. **De Be and Beijer,2014** also claimed that workplace type has a significant favorable impact on employee productivity. **Jayaweera,2015** mentions the affiliation between work environment features and job performance and effort inspiration was explored. Furthermore, the study looked into how to work drive affects the link between work environment components and occupation. Work atmosphere factors have been discovered to have a substantial impact on job performance, and **(Sharma and Sharma 2014**) claims that

improved productivity contributes to profit development, higher productivity, and social progress since it improves the connection between the working environment and job performance. Employees can only improve their pay, working conditions, and job prospects by increasing their output. Additionally, increasing efficiency tends to surge competitive advantage by depressing prices and cultivating quality. Presentism and absenteeism are both factors that affect workplace productivity. Presentism is described as a reduction in performance or efficiency while at work, whereas absence is defined as time spent away from work. They cause turmoil in the office, and as a result, productivity suffers. And if a large number of demotivated, unhappy employees remain with the company for an extended time, the company's capacity to survive in this era of fierce competition and novelty may be jeopardized. Employee performance is raised to its fullest capacity in an effective work environment, resulting in greater organizational production. Employee psychology, attitude, and behavior should all be considered when developing tasks and assignments to please, motivate, and immerse them in their work, as well as to keep them with the organization over time.

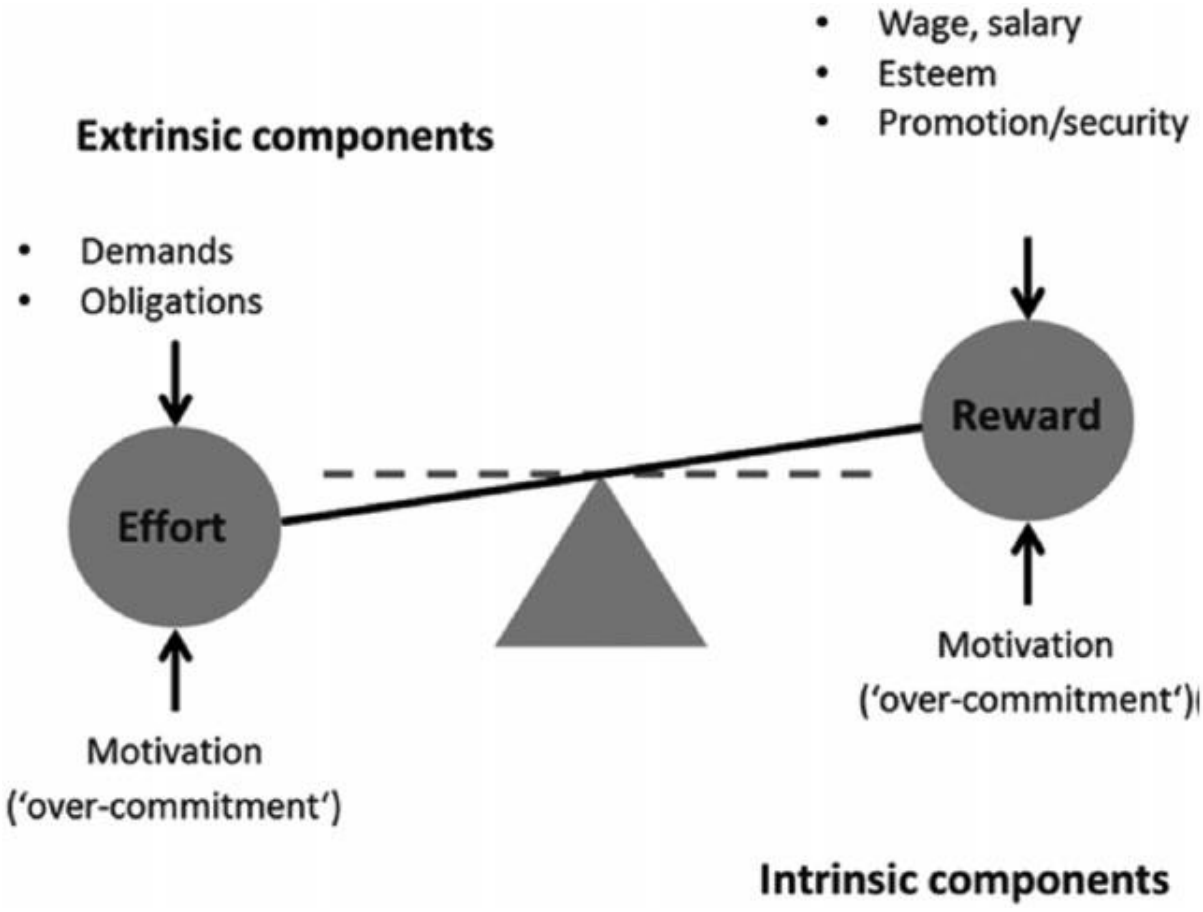


Figure-2.3. Model of effort-reward imbalance.

"Source - **Siegrist (2016, p. 11).**"

The Effort-Reward-Imbalance (ERI) model is a typical theory for psychosocial work environments with little impact on well-being and safety, emphasizing the discrepancy between high effort and low rewards. The Effort-Reward-Imbalance (ERI) model is a typical theory for psychosocial work environments with little impact on well-being and safety, emphasizing the discrepancy between high effort and low rewards. **(Siegrist, 1996; Siegrist et al., 2004).** As a result, the model focuses on social exchange and represents distributive justice in the workplace **(Siegrist et al., 2004).** Employees expect output in form of promotion or recognition for their work as input **(Siegrist, 1996).** Employees who are incapable to survive successfully with stress and disappointment, for example, may act in ways that violate corporate rules **(Baillien et al., 2009).** Condensed job efforts, unnecessary moaning, and extraction from social engagements are all examples of this. Co-workers and superiors who are attempting to rein in or castigate the norm may retaliate and victimize you as a result of your behavior. **(Neuman and Baron, 2003**). Also, as formerly noted, anxiety resulting from effort-reward imbalance can lead to mental health issues **(Bonde, 2008),** which has been accompanying an increased chance of being intimidated **(Nielsen et al., 2012**). If the job design is connected with the psychological needs and perceptions of the employees, professional involvement and performance rise. Employees that have an efficacious job design are more promised in their work, like completing accountabilities and using all of their rational, emotional, and physical energies to attain aims **(Kahn, 1992).** Employees who have a working design because they are resolute to put their hands, brains, and heart into it **(Ashforth & Humphrey, 1995).** To obtain extraordinary consequences, work should be well designed affording the objectives of the employee. Job development gives variety in jobs and can be functional for employee education, job revolution takes employees from one particular duty to another, and job enhancement provides accomplishment, gratitude, accountability, inspires work, and vertical loading of tasks. As a result of these methods, an effective amalgamation of activities, tasks, and aims for employees can be attained, allowing them to establish goals that are matched with company goals. A well-motivated and contented employee becomes devoted to the organization and feels him or herself a part of it, and corporate aims become his or her ambitions as a consequence of an optimum job design. Workers' stress levels decrease when the job is organized around their attitudes. They are ecstatic and exclaim, "This is my kind of job." Employees that are engaged and motivated are less likely to be absent from work and spend their time doing things that are significant to

them. They stay with the company for extended periods and become valuable assets in the long run. On the other hand, if the job does not align with the employee's psychological perceptions, it will be difficult for the organization to engage them in work. They become dissatisfied and demotivated. These employees tend to stay with companies for shorter periods and leave at a higher rate, resulting in a greater employee turnover cost. Employee turnover costs firms a lot of money if they don't engage and encourage their employees. If such personnel remain with the company, they will become less productive and have a higher rate of absenteeism**(Chang & Busser 2019).** To afford employees a harassment-free work atmosphere, it is critical to design anti-harassment rules in a company, integrate anti-harassment-related sequences into educational training, and strategy for a comprehensive harassment reporting process **(Fu-Sung Hsu et al .2019)** Employee job contentment and performance can be improved, as well as absenteeism and worker turnover rates, if the excellence of their work-life (QWL) is improved **(Sirgy et al., 2001; Wan & Chan, 2013**). To recruit and retain employees, the hotel business must afford a high quality of work-life (QWL) **(Kandasamy & Ancheri, 2009).** According to studies, it is vital to consider what factors contribute to QWL for accommodation personnel to advance employee job satisfaction and reduce the likelihood of turnover.

- **2.6. Ergonomics Practices & Employee Wellbeing**

Workplace well-being comprises all aspects of operational life, from physical atmosphere quality and well-being to employee approaches toward their jobs, working environment, workplace atmosphere, and work organization. There is a relationship between employee productivity and overall health and happiness, according to numerous research **(International Labour Organization, 2015**), some companies do very well as their priority is people, As it becomes obvious that many workplace difficulties are driven by a lack of dedication to their employees' needs, other companies are beginning to pay attention to employee well-being. Stress, conflict, drunkenness, and mental health problems can result from a lack of understanding of the importance of improving workers' well-being Entry-level employees will have a terrible physical and psychological state if they are bullied at work. Entry-level employees' views of well-being are significantly diminished as a result of workplace harassment and unfavorable working conditions As a result; hoteliers should make every effort to prevent bullying in the workplace. In recent years, work-related stress has become a worldwide epidemic. Harassment is reported by many employees in all sectors

(Volpe and Reiter, 2013). Studies show **(Bentley et al., 2012; Kitterlin et al., 2016)** that the main reasons for staff anxiety and psychological injury are evolving in the hospitality industry. Repressed employees are more likely to suffer from adverse expressions and professional concerns **(Hansen et al., 2018; Rai and Agarwal, 2018).** Additional adjectives including satisfaction, life quality, and life satisfaction have been used by scholars to describe wellbeing **(Gilbert & Abdullah, 2004).** Employees' mental awareness of their particular well-being is measured by work satisfaction (**Lee et al., 2016**). Because of its impact on job motivation, job-related wellbeing is a particularly important result **(Aerden et al., 2015).** Many research has focused on defining QWL and its aspects **(Kandasamy & Ancheri, 2009; Lewis et al., 2013; Martel & Dupuis, 2006; Sirgy et al., 2001; Wan & Chan, 2001; Wan & Chan, 2001).** Workplace design, content, and training, as well as career systems, opportunities, and a participatory team, workplace design, content, and training, decision-making involvement, and an ethical corporate culture Employees who are contented with their professions are more probable to be healthy and motivated**(Horton & O'Fallon, 2011).** Workplace aesthetic demands are more common than ergonomic needs, and they are negatively linked to working stress **(Schell, Theorell, & Saraste, 2011).** Despite the scarcity of empirical data on hotel employee satisfaction, a few new studies are beginning to fill in the gaps. The scientific agenda should be advanced Female hotel employees, for example, were found to benefit from scheduled leisure coping methods in a study. **(Tsaur & Tang, 2012**). For all choices, management accepts and uses a wellbeing, protection, and welfare "filter." Regardless of whether senior management makes the decision, when it comes time to make the decision, they will usually consider various additional factors, such as the cost in terms of money, time, and assets; the influence on their reputation in the public, and so on. Employees' health must become a standard criterion that is taken into account during the decision-making process. A business should consider addressing the satisfaction in four "avenues of effect," dependent on recognized needs, to build a workplace that protections, promotes, and supports workers' physical, mental, and social well-being. An establishment can affect the health of not just the employees. Physical work environment, psychological work environment, workplace resources for health, and business sector participation are the four pathways. These four elements are the foundation of a healthy workplace program. As a result, the four paths are not distinct and distinct things. Each intersects and overlaps with the others in practice **(Healthy Workplace Framework and Model; WHO, 2010).** Managers work together to keep information flowing smoothly. Improvement process to protect and develop the

atmosphere's health, safety, and well-being of employees, as well as the environment's long-term development of the workplace.

- **2.7. Covid 19 impact on Hotel Housekeeping**

Due to the Coronavirus impact, the nation is confronting a pandemic circumstance towards controlling general society to dodge the spread of the infection energetically. There isn't a single entity on the planet that has been spared from the effects of COVID-19. However, each company and sector has been impacted uniquely. Specifically, hoteliers have seen direct how the sheer menace of an epidemic will result in a significant decrease in visitors, extensive flight cancellations, supply chain disturbances, and extreme government restraints with COVID-19. These dangers are heightened by the latest trends of Hotels being used as quarantine sites for COVID-19 afflicted people. Though this strategy (of providing quarantine places) may be justifiable, companies should consider the well-being and safety of their personnel, particularly housekeepers, during the epidemic. Unexpected events, such as illness, natural catastrophes, and terrorist strikes, can put the hospitality sector at risk. The housekeeping sector of a hotel shows a significant role in protecting the environment hygienically, and they are frontline employees in the fight in contradiction of the Covid-19 pandemic. The important issue is how to appropriately dispose of the stained linen and debris collected from these rooms, as this might be hazardous. Hotel housekeepers will be additional anxious about their jobs when the quantity of guests decreases, as they may be advised not to statement effort due to declining demand. Employees who are unprotected from COVID-19 may not be qualified for paid sick leave and lose their jobs as a consequence of having to self-quarantine or upkeep for a sick family member. Numerous hotel cleaners are not enclosed by insurance. It is critical to instruct housekeeping employees on how to securely and efficiently apply disinfectants. Hotel employees' safety is a high priority for many because they are in regular interaction with guests. If they are diseased with the virus, they will have difficulty retrieving help and treatment. Protective personal equipment, additional cleaning supplies, and physical adjustments to societal space will protect against COVID 19. Even items like linens may essential to be substituted more often as a result of the more caustic cleaning. Recognizing what specific deviations to a hotel's housekeeping processes

are required for COVID-19 will contribute to calculating the improved expenses. Because COVID-19 is spread by touching virus-infected surfaces, hotel cleaning and hygiene have become increasingly decisive in recent years. **(World Health Organization, 2020).** The hygiene of a hotel's guestrooms (such as bedrooms and bathrooms) is a significant aspect of defining its status **(Gu and Ryan, 2008).** High surfaces should be sanitized and cleaned frequently to minimize the risk of exposure in social places. The cleaning process in public areas (such as toilets, corridors, and passageways,)should be accomplished as a protection precaution. Knobs, elevators, railings, switch, door handles, and dispenser are just a few examples of often affected objects that need extra care. Individual protective gear and cleaning materials are easily obtainable and used. Cleaning staff should have sufficient disinfectant and other equipment on hand to ensure that the goods are properly processed according to company instructions. Employees should use appropriate PPE to avoid exposure to chemicals. Cleaning staff should be taught the use of the resulting disinfectants and personal protective equipment, as needed: • Rubber gloves • An apron that is impermeable to liquids • Closed shoes • Safety glasses and medical or fabric masks **(WHO, 2020).** The significance of this issue cannot be highlighted, and regardless of the type or size of the business, waste administration criteria and proper sanitation practices are seen in all procedures of hospitality activities that are likely to administer the business's survival.Until a long-term remedy, such as the most likely one, is established, hotel administration should consider making masks mandatory; for vaccination against COVID-19. The need for government criteria is supplementarily supported by **(Wen et al. 2005**).Regular temperature monitoring and records management at the exit points of working environments and institutions could be one such common practice. This was especially evident in the reactions to the increase in labor. Due to their extensive experience, tourism and hospitality experts may have this attitude. Through their involvements, they must have witnessed the sector's highs and lows. Even though COVID-19 is a rare example for all sectors in that lower demand and revenues are understandable results, this may be associated with previous crises that had similar negative results. This time, a catastrophic virus has confined the entire planet, putting a stay on a wide range of activities, with the leisure region being the most significant casualty. Industry leaders, like educators, did not awful away from highlighting human resiliency, as established by their declarations.

2.8. Barriers to implementing Ergonomics Practices

The W.H.O recommends that workplace musculoskeletal illnesses (MSDs) be addressed through long-term health advancement, education, and anticipation. The goal of these treatments is to change behaviors related to pain and health. Apart from improving working circumstances **(Burton, 2010).** The World Health Organization proposes a "healthy workplace " that covers a wider viewpoint on workplace health, Therefore, this paradigm is very vital for organizations that want to maintain employee health and productivity, especially concerning multifactorial proliferating MSDs.**(Whysall et al., 2006)** In addition, many techniques are being implemented to promote healthy activities in the workplace around the world. **(Burton, 2010).**

In current years, research has absorbed mostly on the organizational environment, which includes both internal and external background elements **(Damschroder et al., 2009).** Inner background refers to organizational and cultural fundamentals including extent, leadership, and organizational climate, whereas external context takes into explanation inter-organizational impact, the atmosphere, and policies. **(Damschroder et al., 2009).** Recruitment assessments show that a healthy organizational culture, effective associates between leaders and employers, and strong goals and priorities are key issues in forecasting susceptibility to innovation and information association skills within an organization. Manager's and employees' perspectives on innovation, and their willingness to familiarize, themselves can be important to substitute a more variable atmosphere. **(Verbeke et al., 1998).** The execution of a workplace health program can face challenges at various levels of the organization. For example, according to a current literature review, management commitment is dominant in the effective operation of a health program. **(Burgess-Limerick, 2018).**

Nanette Lashuay MA,(2006), Elisabeth Björk Brämberg et al (2017), Robin Burgess-Limerick,(2018), Martin Cherniack,(2018), Bauba S. Komaa.(2019), Whysall et al., (2006); Whysall	**Organizational Culture**

et al.,(2004)	
Maurice T Driessen,(2014), Fred Straub,(2018), Fassier et al., (2015); Masi and Cagno, (2015); Bauba S. Komaa.(2019), Katarina Wijk and Svend Erik Mathiassen,(2011), Viner, D. (1996), Ridley (1990)	**Management commitment**
International Institute for Labour Studies (ILO) Publications,(1988), International Labour Organization (2001)	**Implementation barriers**
Patrick G. Dempsey,(2007), Masi and Cagno, (2015); Whysallet al., (2004); (Rothmore et al., (2015), Whysall et al., (2004);	**Absence of knowledge and skills regarding practice**

Table -2.1 - **Constructs on barriers to implementing ergonomics practices by authors**

Workplace Conditions

It is critical to design anti-harassment rules in a company, assimilate anti-harassment-related courses into informative training, and strategy for a comprehensive harassment recording process **(Hsu, Liu, Tsaur, 2019).** To recruit and retain employees, the hotel business must provide a quality of work-life (QWL) **(Kandasamy & Ancheri, 2009).** This paradigm is thus crucial for any organization that wishes to maintain its people healthy and productive, particularly when it comes to MSDs, which are multi-factorial and spreading **(Whysall, Haslam, Haslam, 2006; Jones, T. J. 2007).** In modern years, research has focused mostly on the organizational environment, which includes both internal and external contextual elements**,** Inner context refers to structural and cultural elements including size, leadership, and organizational climate, whereas outside context takes into account inter-organizational impact, the environment, and politics (**Damschroder et al., 2009).**

Risk assessment and control

To remove dangers and align job difficulties with worker competencies, ergonomic principles are then comprised in the enterprise of tasks plus workspaces. The hazards assessment and verification aspect of the risk assessment process is described in the ergonomics process. **(Brophy, M. & Grant, C. 1996).** The physical workload of hotel housekeepers cleaning dust, cleaning toilets, vacuuming, cleaning floorings, and reinstalling facilities include loading maid trolleys with linens and other supplies, emptying containers, removing and replacing linen, dusting, cleaning toilets, vacuuming, cleaning floorings, and reinstalling facilities, these job responsibilities make them very much prone to injuries and unhealthy state; **(Oxenbridge & Moensted 2011).** It is an increasingly vital problem to address risk valuation in work-related contexts in which the physical workload and Musculoskeletal disorders (MSDs) progress through a relationship between the workplace, leisure time activities, and individual aspects **(Niu, S. 2010).**

Employee Health & Safety

According to **International Labour Organization (2015),** the Absence of information and cognizance around employee wellbeing and safety are key contributors to the incidence of work-related accidents, contaminations, and diseases. Rare investigations have been conducted on the occurrence of hotel workers' complaints. Over the last decade, the prevalence of asthma and asthma-like symptoms among cleaning workers has grown**.. (Bello, Quinn, Perry, Milton,2009). Interventions** aimed at preserving job ability and reducing musculoskeletal discomfort and sick leave among housekeepers should be introduced by organizations **(Jørgensen et al.2011).** Hotel employees are more likely to be stressed or exposed to aggressive behavior **(Marie Laberge and Elise Ledoux,2011).**

Pandemic Response Plan

The establishment should advance a comprehensive strategy for dealing with the COVID-19 pandemic, which must contain the subsequent features. The management side should assign enough assets to assure that the action plan is applied reliably and efficiently. The action plan

would also cover the source of tackle and procedures for the organization of alleged instances and their anticipated contacts, in conjunction with health establishments. COVID-19 should be adequately taught and updated regularly so that receptionists can provide guests with information on preventative measures, protocols, regulations, and other services that they may require, such as medical and pharmacy services. **(World Health Organization,2020).**

As per the **world travels and tourism council(2020),** Many hotels are planning different strategies to counter this pandemic i.e. hotel staff working hours are being reduced, while unpaid time is being increased as a pandemic response plan **(Wang and Ritchie, 2012). Leung and Lam(2004**), note that outsourced staff services are increased. According **to Kim, and Kreps, (2020)**, the guest's inclination toward health-oriented tourism may be increased. Worldwide, most hotels have taken very important decisions to combat the pandemic as a response plan.

S.No	Authors	WC	RAC	EHS	PRP	EE	ER	BIEP
1	Marie-Anne S. Rosemberg ,2020	✓						
2	Dimitrios P. Stergiou, Anna Farmaki,2020				✓	✓		
3	Carlos Ruiz-Frutos et al.,2020				✓			
4	Sevil Sönmeza et al.,2020	✓			✓			
5	Rory O'Neill,2020	✓	✓		✓	✓		
6	Yangyang Jiang,2020	✓			✓			
7	Jack T. Dennerlein et al.,2020				✓			
8	Amaechi Chijioke Juliet et al. 2019	✓	✓	✓				
9	Leber,2018	✓				✓	✓	✓
10	Nilesh C. Gawde,2018	✓						
11	Ankush Ambardar ,Kunal Raheja ,2017	✓		✓				
12	Rachel Mammen,2017	✓	✓					
13	Kevin Daniels et al.2017	✓	✓					
14	Robert Becker Pickson,2017	✓				✓		
15	Håkansson, Malin et al.2017	✓				✓		

16	Somnath Kolgiri et.al,2016	✓	✓					
17	Dennis R. Jones,2015			✓				
18	Yu-Chin Hewish et al.2014	✓						
19	Marie-Anne V. Sanon,2014	✓		✓				
20	Gladys shah,2014	✓	✓	✓				
21	Evelyn Wanjiru Kahare,2014	✓	✓	✓				
22	Mest.2013	✓				✓	✓	✓
23	Md Sirat Rozlina et.al 2012	✓	✓	✓				
24	Marie B Jorgensen et al.2011	✓	✓					
25	Burgel et al., 2010	✓	✓					
26	Jessica M. Tullar etal.2010			✓				
27	Tullar et al.2010	✓		✓				
28	Bronwyn Boon,2007	✓						
29	Fiona Weigall et al.,2005	✓	✓					
30	Niklas Krause et al.,2005	✓					✓	✓
31	Niklas Krause,2002	✓	✓	✓		✓	✓	✓
32	Joseph. P . Johnson,2001	✓						
33	LaBar, Gregg,1997	✓						
34	Mansfield & Armstrong. 1997	✓	✓	✓				
35	Wami, S. D., Dessie, A., & Chercos, D. H. (2019)	✓	✓	✓				
36	González et al.2022	✓	✓	✓				
37	Kim,2009	✓	✓	✓				
38	Coşkuner, S., & Hazer, O. (2009).	✓	✓	✓				
39	Tepavčević,2020	✓	✓	✓				
40	Hatzudis, K. (2014).	✓	✓	✓				
41	Tak, S. (2016).	✓	✓	✓				
42	Moharana, G., Vinay, D., & Chaudhary, N. (2011).	✓	✓	✓				
43	Kuo et al. 2015	✓	✓	✓				
44	Mendoza et al. 2019	✓	✓					
45	Jones, P., & Siag, A. (2009).					✓	✓	

46	Wood, D. F., Moreo, P. J., & Sammons, G. (2005					✓	✓	
47	Tavitiyaman,2021					✓	✓	
48	Wiadnyana et al.2020	✓				✓	✓	
49	Chirmulay,2006					✓	✓	
50	Hartline, M. D., & Jones, K. C. (1996).	✓				✓	✓	
51	Hao, F., Xiao, Q., & Chon, K. (2020)				✓			
52	Lai, I. K. W., & Wong, J. W. C. (2020).				✓			
53	Pavlatos, O., Kostakis, H., & Digkas, D. (2021).				✓			
54	Ntounis et al. 2022				✓			
55	Schwartz, J., & Yen, M. Y. (2017)				✓			
56	Gaur, L., Afaq, A., Singh, G., & Dwivedi, Y. K. (2021)				✓			
57	Hoang, T. G., Truong, N. T., & Nguyen, T. M. (2021).				✓			
58	Bonfanti, A., Vigolo, V., & Yfantidou, G. (2021).				✓			
59	Khawaja et al.2021				✓			
60	Fu, Y. K. (2020).				✓			
61	Lashuay, N., & Harrison, R. (2006).							✓
62	Brämberg et al,2017							✓
63	Koma et al.2019							✓
64	Steege, A. L., Boiano, J. M., & Sweeney, M. H. (2014).							✓
65	Wong, J. Y. Y., Gray, J., & Sadiqi, Z. (2015).							✓

Table 2.2 – Constructs Examined in Recent Literature

Note(s) WC = Working Conditions, RAC= Risk assessment and Control (Employee Health & Safety), PRP = Pandemic Response Plan, EE = Employee Efficiency, ER = Employee Retention

Research Gap

Buchanan (2010) mentions hotel personnel have a greater prevalence of work-related hurt and suffer more serious injuries. According to **Faulkner and Patiar (1997),** cleaning personnel has high levels of stress in their workplaces. As a result of this form of empowerment, housekeeping personnel is under constant pressure until their shift finishes. The current and future hotels involve and require an enormous number of skilled employees. Human resource managers in the hotel business are currently concerned with staff attraction and retention. According to **DiPietro et al. (2007),** "the employee turnover rate in the hospitality industry is sadly very high all over the world. Overhead human resource practices include QWL (Quality of work-life), promotion, training and development, performance appraisals, OSH rewards, motivation, and the need to be promoted in the hotel industry", so overall human resource practices need to be promoted in the hotel industry", **Elizabeth Boye Kuranchie-Mensah (2015).**On an international level, numerous studies have been done on the aspects of housekeeping employees, but hardly any research depicted the nature of the relationship between hotel housekeeping's ergonomics practices and employee retention, efficiency, or performance in India. According to an analysis based on a literature study, the majority of research has been conducted on departments that directly interact with guests, As a guest interacts and communicates with the personnel of these departments, they become the hotel's face. In the field of hotel housekeeping, there is a limited evaluation of literature. In addition, the popular research in the literature is intensive on revenue management and profitability in hotels. Because the housekeeping department does not generate direct revenue for the hotel, it is frequently overlooked in research. Some researchers have looked at the link between health and safety procedures and staff retention, and staff efficiency, but there is little research that looks at the link between ergonomics practices and housekeeping staff retention and efficiency. Another significant research gap that has been identified in the literature is that the majority of these investigations have been conducted on an international scale. It was proposed that lowering labor costs and increasing efficiency in housekeeping operations would help regulate the hotel's overall costs. Housekeeping operations are many, and comprehending and managing them would be beneficial**(Krieger et al., 2006)**, With these considerations in mind, this subject has been established to fill up the gaps in the literature.

CHAPTER 3 RESEARCH METHODOLOGY

3.1. INTRODUCTION

Methodology of the research is one of the significant parts to concentrate upon in a research study. **Bell & Bryman (2007)** defined a research plan as a method for analyzing planned relationships among variables using scientific processes and numerical analysis. It acts as the research's nerve center and gives meaning to the findings. The study's methodology describes the procedures and tools he or she utilized to gather, organize, analyze, and interpret the data. It contains information on constructions and variables. Choosing a certain research strategy is the same as deciding on a course of action. This chapter summarizes the research methodologies used and the gears used to attain the study's main goal. All of the techniques used to achieve the study's goals are based on scientific research methodological processes. All of the tools were tested and set up in a typical circumstance. The response sheets from the hotels were used to collect primary data. The following stage is to create a blueprint for how the entire study should go. The research's major objectives were created based on a survey of the literature. Qualitative methodology is seen as a substitute approach that resolves queries that possibly cannot be resolved through quantification, probability testing, random sampling, etc. **(Camic, et al., 2003)** Objectives of the study described the goals which will be answered after the analysis. The research hypothesis was created grounded on the review of the literature and the goals. A well-suited research technique was framed for properly analyzing the data and drawing judgments. Following that, the survey methodology was chosen, and the study area, population, and sample frame were addressed. The questionnaire, as a data collection tool, was discussed. Finally, the statistical approach and data collection techniques were discussed to reach inferences and find out suitable outputs. **(Camic, et al., 2003)** said Quantitative and qualitative methodologies can be used to provide fresh insights into data analysis. As a result, the research approach used has been detailed further down. This chapter is broadly classified into the subsequent sections:

- Research Problem
- Objectives of the Study.
- Development of Research Hypothesis.
- Research Design and Methodology
- Survey Approach
- Population and Sample Frame.
- Research Questionnaire Design.
- Content Validity
- Face Validity
- Summary.

3.2 . RESEARCH PROBLEM

To study the ergonomics practices followed by five-star hotels and their implications on employee retention and employee efficiency which ultimately impact organization performance

Research Questions

- What are ergonomics practices followed in five-star hotels?
- Is there any relationship between ergonomics practices and employee efficiency?
- Is there any impact of ergonomics practices on employee retention?
- What are barriers to implementing ergonomics practices?

3.3. OBJECTIVES OF THE STUDY

As per **Pinsonneault & Kraemer (1993),** the objectives and aim of the study should be mainly grounded on the positivist approach having quantitative methods of investigation. This current research work is based on the following objectives:

•To identify the existing ergonomics practices in five-star hotels of NCR

•To examine the relationship between ergonomics practices and employee efficiency in five-star hotels

•To study the impact of ergonomics practices towards staff retention in the hotel industry.

•To identify barriers in the execution of ergonomics practices in five-star hotels

3.4. THE DEVELOPMENT OF RESEARCH HYPOTHESES

In this section, at first, the factors affecting housekeeping services & practices were identified grounded on the review of the literature and the past hospitality experience of the researcher. Five factors have been formulated which are as follows:

- Workplace conditions
- Risk assessment & control
- Employee health and safety
- Pandemic response plan

Secondly, the hypotheses were developed to approximate the consequence of the above-identified variables on employee efficiency & employee retention. Employee retention was also seen as a dominant factor in the relationship of housekeeping ergonomics practices. So in the third step, hypotheses were framed to find out the impact of ergonomics practices on employee retention. Finally, the hypotheses were developed as follows:

Hypothesis –

Ho1 There are no existing ergonomics practices in five-star hotels

Ha1 There are existing ergonomics practices in five-star hotels

Ho2 There is no relationship between ergonomics practices and employee efficiency in five-star hotels

Ha 2 There is a relationship between ergonomics practices and employee efficiency in five-star hotels

Ho 3 There is no impact of ergonomics practices on staff retention in the hotel industry

Ha 3 There is an impact of ergonomics practices on staff retention in the hotel industry

Ho 4 There are no barriers to implementing ergonomics practices

Ha 4 There are barriers to implementing ergonomics practices

3.5. RESEARCH DESIGN AND METHODOLOGY

Research design is a complete process to formulate research problems, selecting data collection techniques, the process for analysis, and moral necessities **(Creswell, 2003**). There are many different methods for research methodologies in the arena of social sciences but the most well-suited approach is the survey research approach. A survey research approach provides an inexpensive, quick, accurate, and efficient means of evaluating data about the respondents **(Zikmund, et al., 2003).** The accomplishment of any research depends upon choosing the right research methodology and correct research design **(Hussey, 1997**).

The current research will study the emerging scenario of the hotel industry as well as the importance of the housekeeping department in employee retention & employee efficiency in the hotel. It requires an accurate description of the association of some variables. Hence the study will be conclusive in nature where the cross-sectional design will be used. Following the recommendations of **Wu(2003),** the study included a research process comprising of following stages::

•Literature Review

•Theoretical Background

•Construction of Model

•Variable Operationalization

•Sampling Design

•Data Collection

•Investigation of Data

•Data Analysis.

Each stage is described below concerning this study:

(1) **Literature Review**

The literature review included the prior studies that concentrated on studies done in the past related to the hotel industry specifically about hotel housekeeping ergonomics practices. Almost the prior studies done in the field of hotel housekeeping were studied. In addition to this, some specific literature and studies were also reviewed that focused on barriers to implementing ergonomics practices hotel industry.

(2) **Construction of Model**

The independent and dependent variable choice is a careful research process. This study identified the variables through a literature review, theoretical foundation, and the pilot study of the research questionnaire. Based on a review of literature and information available through books, a conceptual framework has been prepared to have better clarity on the dimensions to be studied. The following figure shows the framework designed

3. **Theoretical/ Research Framework**

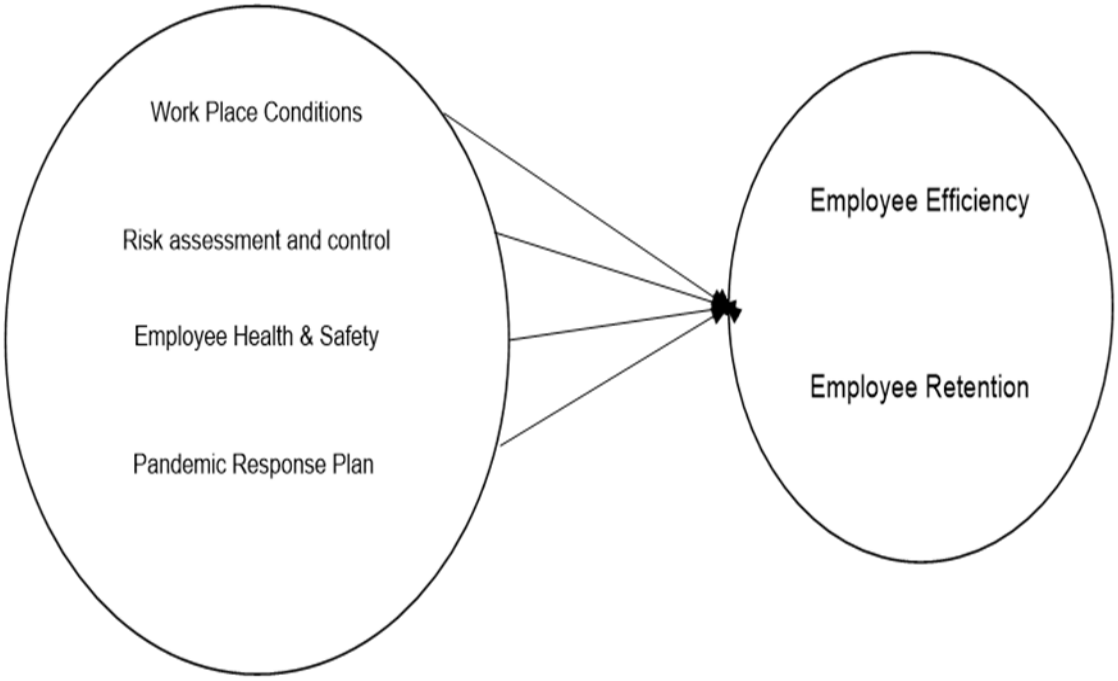


Figure 3.1 **Theoretical/ Research Framework**

(4) **Variable Operationalization**

This step aimed to find out the way of measurement of the identified variables. A systematic review of the literature provided the base for the operationalization of variables. The face

validity of the respective variable was measured. The independent variable for the current study was housekeeping services and practices and the dependent variable was customer satisfaction and organizational performance.

(5) **Data Collection**

This stage involved the data collection for the testing of the research hypothesis. Around 30 approved and functional hotels in the NCR region were approached for the study. “In India, the National Capital Region (NCR) refers to the conurbation or metropolitan area that includes the entire National Capital Territory of Delhi, as well as urban areas around it in the states of Haryana, Uttar Pradesh, and Rajasthan. It is the world's second-largest urban agglomeration, with a total size of around 33,578 km (12,965 sq mi). It's growing in importance as a hotel business center."The hotels selected for data collection were based on registered hotels under HRACC (Hotel & Restaurant Approval and Classification Committee), HRANI (Hotel Restaurant Association of North India), and hotels registered under the Ministry of Tourism website. Finally, a list of 25 hotels was prepared and these were shortlisted for survey and data collection. Following is the list of shortlisted hotels from where the survey was conducted:

	LIST OF THE CLASSIFIED HOTEL IN NCR			
Sr.No	**Name Of The Hotel**	**Classification**	**Place**	**Number Of Room**
1	Hotel Welcome Sheraton	Five Star	Delhi	220
2	Jaypee Vasant Continental	Five Star	Delhi	119
3	Shangri - La Hotel	Five Star	Delhi	324
4	Hotel Crowne Plaza Surya	Five Star	Delhi	244
5	The Metropolitan Hotel	Five Star	Delhi	178
6	The Grand	Five Star	Delhi	390
7	The Ashok	Five Star	Delhi	550
8	Hyatt Regency	Five Star	Delhi	508
9	Hotel Imperial	Five Star	Delhi	233
10	Itc-The Maurya	Five Star	Delhi	440
11	The Park	Five Star	Delhi	224
12	Le Meridian Hotel	Five Star	Delhi	358
13	The Lalit	Five Star	Delhi	457
14	The Taj Mahal Hotel	Five Star	Delhi	294
15	The Suryaa	Five Star	Delhi	244
16	Taj Palace Hotel	Five Star	Delhi	409

17	The Oberoi	Five Star	Delhi	283
18	The Bristol Hotel	Five Star	Gurgaon	84
19	The Leela Kempinski	Five Star	Gurgaon	412
20	Hotel Trident	Five Star	Gurgaon	136
21	Vivanta By-Taj Ambassador	Five Star	Delhi	88
22	Country Inn & Suites By Carlson	Five Star	Gurgaon	246
23	Crowne Plaza	Five Star	Noida	398
24	Radisson	Five Star	Noida	88
25	Radisson Blu Kaushambi	Five Star	Ghaziabad	188

Table 3.1: **List of hotels**

Source – Ministry of Tourism, 2020

(6) **Investigation of Data**

After the survey, data were investigated to check for any errors. Afterward, the coding and editing were done and then pretested to check whether the data is suitable for the test of this study. The data was put in the SPSS software for further analysis of the study.

(7) **Data Analysis**

The data were evaluated using SPSS and MS excel. The following statistical techniques were applied:

Sr.No	**Objectives**	**Hypothesis**	**Statistical Analysis**
1	To identify the existing ergonomics practices in five-star hotels of NCR	Ho1 There are no existing ergonomics practices in five-star hotels	Normalization, Reliability statistic and

		Ha1 There are existing ergonomics practices in five-star hotels	descriptive analysis
2	To examine the relationship between ergonomics practices and employee efficiency in five-star hotels	Ho2 There is no relationship between ergonomics practices and employee efficiency in five-star hotels Ha 2 There is a relationship between ergonomics practices and employee efficiency in five-star hotels	Nonparametric test Spearman's Ranked Ordered Correlation coefficient
3	To study the impact of ergonomics practices towards staff retention in the hotel industry.	Ho 3 There is no impact of ergonomics practices towards staff retention in the hotel industry Ha 3 There is an impact of ergonomics practices towards staff retention in the hotel industry	Regression Analysis
4	To identify barriers to the execution of ergonomics practices in five-star hotels	Ho 4 There are no barriers to implementing ergonomics practices Ha 4 There are barriers to	Normalization, Reliability, statistic and descriptive analysis

		implementing ergonomics practices	

Table -3.2 Association among research objectives, hypothesis, and statistical analysis applied

3.6. **SURVEY APPROACH**

This research study selected a survey method for the testing of the hypotheses. **Fowler (1993)** suggested that the survey methods are most suitable to test the hypotheses developed from theory. A survey research approach provides an inexpensive, quick, accurate, and efficient means of evaluating data about the respondents **(Zikmund, et al., 2003).** The survey was chosen to develop the general ability rather than contextual realism that has already been achieved by previous similar case studies. Most of the research focuses on collecting attitudinal, behavioral, and factual data. Survey technique using qualitative and quantitative techniques helps to get the same data **(Kerlinger, 1986).** He further added that the survey method helps to collect the larger information from more populations in economic ways. According to **Slater (1995**), the information collected by the survey method is almost correct as the research questionnaire is specially developed in the context to research questions.

However, some disadvantages are associated with the survey technique of data collection: First, the unwillingness of respondents results in non-response errors that can invalidate the findings of the research **(Kanuk, 1975).** Second is the ability of the respondent to recognize the aim of the research study and provide the correct information. **Linsky (1975)** advised choosing the respondents that have experience and knowledge of the subject of the research study. Third, the respondents may provide the preferred answers as per the wish of researchers and affect the accurateness of the study **(Dillman, 1972).** However, these limitations can be minimized by careful planning during the development of the survey research questionnaire and collecting data like; the use of simple and clear language, keeping the research questionnaire short, collecting data in a short period, avoiding suggestive

answers during the personal collection of data, etc. These points have been taken care of for this study also.

3.7. **POPULATION AND SAMPLE FRAME**

Banerjee A. (2010) defined a population as a complete cluster about which some data is essential to be discovered. The selection of population is generally based on research questions that help to define the concerned population in terms of location and restriction to age, sex, and particular occupation. **Banerjee A. (2010)** further stressed selecting the population with almost care so that those to be included and excluded are well defined**. Best (2009)** described a population as a group of people that have one or more characteristics in common and remain under the area of interest of the researcher. Generally, research is done for the benefit of the population. The prime purpose of the research is the development of knowledge or principles that have universal acceptance and application. But, to study the whole population with an idea to develop generalization would be impractical if not impossible. Grounded on the dynamic nature of the population, it is assumed that the characteristics of the population would change over time. According to **Smith-Sebasto (2000),** the population should be studied at the time of research and that time frame should be reported in the study. The Population for the current study was the hotels situated in the NCR region.

• Sampling Design

A section of the total population that is designated and chosen for the results which could apply to the remaining population as well is known as a sample **(Bell & Bryman, 2007).** Any element in the population has an equal probability to become a sample within the population in probability sampling **(Bell & Bryman, 2007).** According to **Sekaran (2000),** the probability method can be used to cover a large sample area as well. The target population

was the hotel housekeeping full-time employees (Guest Room Attendants)those who are engaged directly in operations of the NCR's region hotels being categorized under demographic segments based on age, sex, educational background, etc., and responses of all of them were incorporated on an equal basis as researchers are generally bound by money, time, and the workforce. Thus convenience sampling method has been selected while selecting hotels.

• **Sampling area**

The sampling area is the place where the researchers plan to conduct a survey and gathers the targeted sample unit for getting suitable responses **(Banerjee, 2010).** The sample area has to be carefully selected and approved. The sample area in the current study was the approved and reputable five-star deluxe hotels of the NCR region. The samples were collected from twenty-five hotels in Delhi, Gurugram(Haryana), Noida(Uttar Pradesh), and Ghaziabad(Uttar Pradesh). The 5-star hotel offers guests the ultimate in luxury through attentive service, a wide range of amenities, and sophisticated accommodation.

Sampling Unit:

According to **Banerjee (2010),** the sample unit is the social object or element whose characteristics or features are the focal point of the research. The full-time operational housekeeping employees of the NCR region's hotels are the sample unit in the current study. The emphasis of the study is to evaluate the insight of hotel housekeeping personnel about the housekeeping ergonomics practices of these hotels. The study incorporated the opinion of these employees about ergonomics practices' awareness, implementation and their barriers, and their role in the enhancement of efficiency and employee retention. The sample was collected from June 2021 to January 2022.

Sample Type- Sampling is one of the methods of choosing a respondent's subset of the population called sample. Sampling styles define the appropriateness of research. Thus, the sampling technique defines the universal applicability of the research conclusions. In other words, the process of picking a sample of the populace to study is called sampling. Sampling

techniques are of two types -- probability sampling technique and non-probability sampling technique. Probability sampling gives a wider scope of selection of all respondents. On the other side, non-probability restricts the selection of all respondents.

A- Selection of Hotels – The selection of hotels was done through a convenient sampling method. Out of 42 five-star hotels,25 hotels were taken as samples. The large sample size justifies the use of convenient sampling as results are not biased by the use of the sample.

B- Selection of Respondents –Judgmental sampling has been used for the selection of hotel housekeeping employees, preferably those who had six months of working experience in the hotel industry as the "Judgment sampling method may prove to be effective when only a limited number of people who can serve as primary data sources due to the nature of research design, aims and objectives**, (Reddy& Ramasamy, D. 2016)"**

Sample Size Calculation

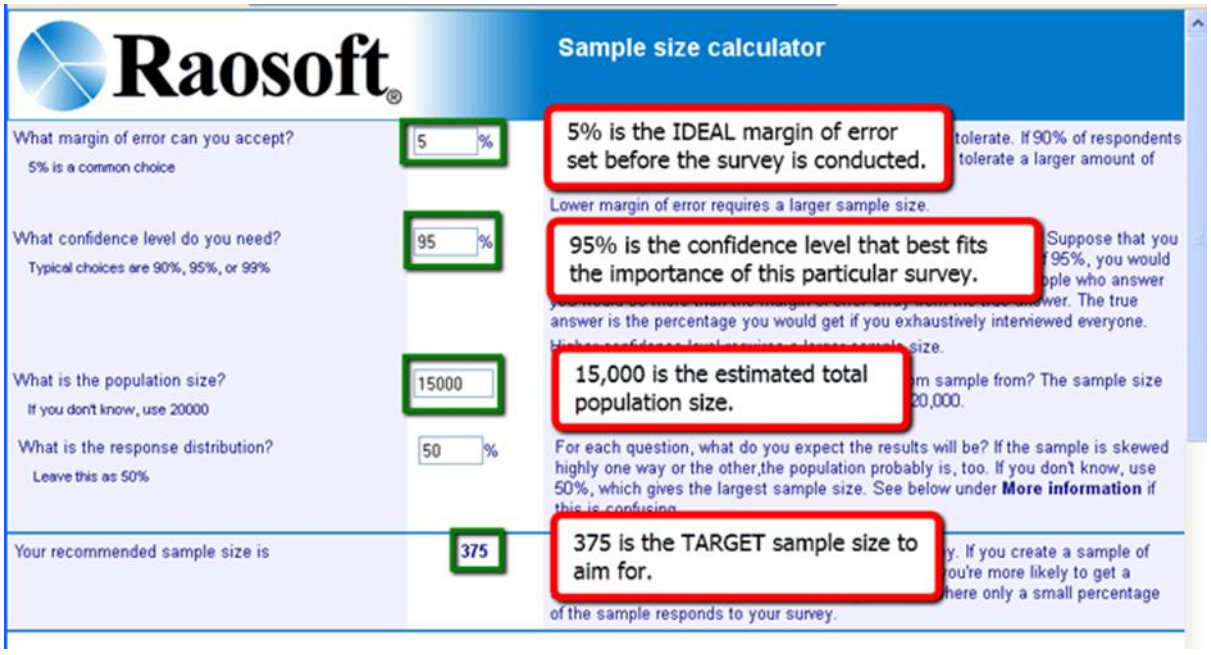


Figure 3.2 Sample Size Calculator

Source: http://www.raosoft.com

3.7. Research Questionnaire Design

The prime challenge of the survey method is to develop a good research questionnaire that can measure the observable factors with due reliability and validity. Constructing the right and appropriate instrument for data collection is one of the big tasks of the survey process **(Zikmud et.al.2003).** The research questionnaire can be finalized in two ways. Firstly researcher can construct the research questionnaire specifically for the study by research questions. In a second way, a research questionnaire is selected from previous similar studies, in most of the research studies, existing instruments are used and in the case where constructs are different from previous studies, a new instrument is constructed to measure the responses. As discussed the past studies about the housekeeping department were quite limited, a new instrument was developed grounded on the objectives of the study.

Gilbert A. Churchill (1979), and Wu (2003), defined the development of a research instrument in the following steps:

1. Selection of domain to build constructs.
2. Identify the variables to correctly measure the constructs.
3. Back translation (if applicable).
4. Pilot study with respondents.
5. Amendment and removal of non-suitable variables.
6. Construction of final research questionnaire.
7. Actual survey with research questionnaire.
8. Measuring reliability and dimension ability using factor analysis or Cronbach's alpha.

In this study, we used a quantitative structured survey questionnaire to collect primary data. The questionnaire is based on a survey by **Park (2009). B.H. Ustad, (2010); Radbauer (2011).** Most of the steps outlined above by **Gilbert A. Churchill (1979)** continued for the

survey questionnaire for this study. **Sale F & Ryan C, 1991** advocate The survey chose the 5-point scale instead of the 7-point scale, which allowed the reliability factor to be compared with other study results, so researchers used the 5-point Likert scale for several reasons, 5-point rating scales, according to **Bouranta, Chitiris, and Paravantis (2009),** are less confusing and boost the response rate.

3.7.1. Selection of Constructs

The development of constructs is based on the objectives of the study. It aims to determine the factors affecting housekeeping ergonomics practices, perception of housekeeping employees about employee retention, employee efficiency, and barriers to implementing ergonomics practices. In the present study, the questionnaire was divided into two sections, section A and section B.

Section A: This section is further divided into five sub-sections. In the first section, questions related to the demographic profile of the target respondents of the hotels. In the second section questions on housekeeping, and ergonomics practices were asked. In the third and fourth sections questions framed on employee efficiency and employee retention were formulated respectively. The questions framed on housekeeping ergonomics practices were formulated based on factors listed in past studies i.e. employee health and safety, working conditions, risk assessment and control, and pandemic response plan. In the fifth section, the questions framed on barriers to implementing ergonomics practices.

Section B: In this section, questions related to the demographic profile of the guest were framed. Such questions were framed to find out the profile of employees working in these hotels. The questionnaire measured the following constructs:

(1) Demographic profile of the respondents of the hotels.
(2) Housekeeping ergonomics practices

- Employee health and safety
- Working conditions
- Risk assessment and control

- Pandemic response plan

(3) Employee efficiency

(4) Employee retention

(5) Barriers to implementing ergonomics practices

Table 3.4 - A thorough review of the literature was done to find out the main domains for constructs and to finalize the variables for these constructs.

Item Code	Construct	Statements	Sources
WC1	Workplace Conditions	I find the work environment encouraging.	Ambardar, A., & Raheja, K. (2017);Marie-Anne S. Rosemberg ,2020
WC2	Workplace Conditions	Employees are encouraged to report concerns about working conditions	Ambardar, A., & Raheja, K. (2017);Marie-Anne S. Rosemberg ,2020,Rachel Mammen ,2017
WC3	Workplace Conditions	The Uniform is designed with employee safety in mind	Ambardar, A., & Raheja, K. (2017);Marie-Anne S. Rosemberg ,2020,Robert Becker Pickson,2017
WC4	Workplace Conditions	All equipment is securely stacked and stored	Ambardar, A., & Raheja, K. (2017);Marie-Anne S. Rosemberg ,2020,Håkansson, Malin et al.2017
WC5	Workplace Conditions	Cleanliness of working area is maintained at all time	Ambardar, A., & Raheja, K. (2017);Marie-Anne S. Rosemberg ,2020
WC6	Workplace Conditions	Wires are covered and drawn properly to avoid electric shocks.	Ambardar, A., & Raheja, K. (2017);Marie-Anne S. Rosemberg ,2020
WC7	Workplace Conditions	Proper ventilation and lighting are available.	Ambardar, A., & Raheja, K. (2017);Marie-Anne S. Rosemberg ,2020
RAC1	Risk assessment and control	Chemicals are tagged and stored properly	Rory O'Neill,2020, Ambardar, A., & Raheja, K. (2017), Amaechi

			Chijioke Juliet et al. 2019
RAC2	Risk assessment and control	Proper training is given to the employees regarding the safe use of cleaning agents	Rory O'Neill,2020, Ambardar, A., & Raheja, K. (2017), Amaechi Chijioke Juliet et al. 2019
RAC3	Risk assessment and control	Proper training is given to the employees about the safe use of cleaning equipment	Rory O'Neill,2020, Ambardar, A., & Raheja, K. (2017), Kevin Daniels et al.2017
RAC4	Risk assessment and control	Supervisors are responsible for identifying unsafe working conditions	Rory O'Neill,2020, Ambardar, A., & Raheja, K. (2017)
RAC5	Risk assessment and control	Material Safety Data Sheet (MSDS) is available for all cleaning agents	Rory O'Neill,2020, Ambardar, A., & Raheja, K. (2017)
RAC6	Risk assessment and control	The organization has a system of reporting injuries or matters of safety concern	Gladys shah,2014,Kevin Daniels et al.2017,Marie B Jorgensen et al.2011
RAC7	Risk assessment and control	Employees maintain perfect posture while doing the operation.	Gladys shah,2014,Kevin Daniels et al.2017,Marie B Jorgensen et al.2011
EHS1	Employee Health & Safety	I understand that the nature of the job is prone to occupational hazards	Amaechi Chijioke Juliet et al. 2019,Marie-Anne V. Sanon,2014
EHS2	Employee Health & Safety	I am suffering from occupational diseases i.e. asthma, joint pain, skin allergy, etc.	Evelyn Wanjiru Kahare,2014;Md Sirat Rozlina et.al 2012,Kawakami, T., & Kogi, K. (2005).
EHS3	Employee Health & Safety	An adequate workload is given to employees	Ambardar, A., & Raheja, K. (2017),Jessica M. Tullar etal.2010
EHS4	Employee Health & Safety	I understand the importance of ergonomic practices	Wami, S. D., Dessie, A., & Chercos, D. H. (2019),Coşkuner, S., & Hazer, O. (2009).
PRP1	Pandemic Response Plan	My organization has drafted policies to counter pandemic issues i.e. flexible leave policies	Dimitrios P. Stergiou, Anna Farmaki,2020;Sevil Sönmeza et al.,2020
PRP2	Pandemic Response Plan	The organization has arranged training sessions on infection control	Jack T. Dennerlein et al.,2020;Hoang, T. G., Truong, N. T., & Nguyen, T. M. (2021).
PRP3	Pandemic Response Plan	Personal protective equipment has been provided to employees	Khawaja et al.2021;Kaushal, V., & Srivastava, S. (2021)
PRP4	Pandemic Response Plan	The organization has created awareness regarding vaccination of Covid 19	Pavlatos, O., Kostakis, H., & Digkas, D. (2021).
PRP5	Pandemic Response Plan	Temperature assessment is being done on an hourly basis	Pavlatos, O., Kostakis, H., & Digkas, D. (2021).

PRP6	Pandemic Response Plan	Hand washing is mandatory on an hourly basis	Pavlatos, O., Kostakis, H., & Digkas, D. (2021).
EE1	Work Place engagement	I can finish daily tasks within the given deadline.	Dimitrios P. Stergiou, Anna Farmaki,2020
EE2	Work Place engagement	I motivate others to perform well.	Pickson, R. B., Bannerman, S., & Ahwireng, P. O. (2017)
EE3	Work Place engagement	I feel very comfortable discussing challenges with my supervisor	Smith, M. J., & Bayeh, A. D. (2003).
EE4	Job Enrichment	I find flexibility in work	Hackman, J. R., Oldham, G., Janson, R., & Purdy, K. (1975). , Leber,2018
EE5	Job Enrichment	I am often encouraged to implement innovative ideas	Hackman, J. R., Oldham, G., Janson, R., & Purdy, K. (1975). , Leber,2018
EE6	Job Enrichment	I get support from seniors	Hackman, J. R., Oldham, G., Janson, R., & Purdy, K. (1975). Somnath Kolgiri et.al,2016
EE7	Employee well being	I enjoy my work.	Ksenia Kirillova, Xiaoxiao Fu & Deniz Kucukusta (2018):
EE8	Employee well being	I can spend quality time with my family members	Fu-Sung Hsu, Yuan-an Liu, Sheng-Hshiung Tsaur, (2019)
EE9	Employee well being	Work-health balance is present in a job	Schell, E., Theorell, T., & Saraste, H. (2011); Sirgy et al. (2001).
ER1	Employee Retention	I find the work schedule quite flexible	Greenhaus, J. H., Collins, K. M., & Shaw, J. D. (2003).
ER2	Employee Retention	I have flexibility at work to deal with family matters	Greenhaus, J. H., Collins, K. M., & Shaw, J. D. (2003).
ER3	Employee Retention	The hotel‘s employee appraisal system is very good.	Greenhaus, J. H., Collins, K. M., & Shaw, J. D. (2003).
ER4	Job Satisfaction	I find support from co-workers	Frone, 2003; Greenhaus & Allen, 2010;Valcour, 2007
ER5	Job Satisfaction	My supervisor supports me at the workplace	Frone, 2003; Greenhaus & Allen, 2010;Valcour, 2007
ER6	Job Satisfaction	I would continue in this organization for a long tenure	Frone, 2003; Greenhaus & Allen, 2010;Valcour, 2007
ER7	Leadership style	My supervisors take appropriate action after reporting injury/hazards	Kossek et al. 2011
ER8	Leadership style	My supervisor leads by setting an example for all employees	Tromp, D. M., & Blomme, R. J. (2014).
BIEP1	Management/leadership barriers	Lack of information on work-related injuries and illnesses	Sorensen et al.2018
BIEP2	Management/leadership barriers	Shortage of skilled manpower in the	Sorensen et al.2018

		organization	
BIEP3	Management/leadership barriers	Employees do not like to report their injury/discomfort	Sorensen et al.2018
BIEP4	Management/leadership barriers	Safety and health issues are viewed as an expense rather than an investment by organizations.	Sorensen et al.2018
BIEP5	Management/leadership barriers	Employees tend to be overconfident with their past working experiences and underestimate the risk.	Sorensen et al.2018
BIEP6	Management/leadership barriers	Lack of employee motivation in organization	Sorensen et al.2018
BIEP7	Management/leadership barriers	Lack of time is a barrier to the implementation of health and safety practices	Sorensen et al.2018
BIEP8	Employee's Barriers	I fear losing my job if I report any injury /health issues	Sorensen et al.2018
BIEP9	Employee's Barriers	The hotel has no system/channel to report any injury /health issues	Sorensen et al.2018
BIEP10	Employee's Barriers	I do not have enough knowledge of ergonomics practices	Sorensen et al.2018
BIEP11	Employee's Barriers	I am not comfortable adopting a new standard operating procedure	Sorensen et al.2018
BIEP12	Absence of ergonomics policies of the regulatory body (HRACC)	Lack of ergonomics policies in HRACC guidelines	Self Authored
BIEP13	Absence of ergonomics policies of the regulatory body (HRACC)	Lack of active involvement of government with employers	Self Authored
BIEP14	Absence of ergonomics policies of the regulatory body (HRACC)	Workplace safety & health initiatives do not have a clear understanding.	Self Authored
BIEP15	Absence of ergonomics policies of the regulatory body (HRACC)	In the subject of occupational health and safety, failure to build a culture of protection	Self Authored

Content Validity Ratio (CVR): The study attempts to develop a scale and assess the validity of the designed instrument and further, check the content validity of the proposed tool. The same has been proposed by calculating the Content Validity Ratio **(Lawshe, 1975; Ayre and Scally, 2014).** Content Validity Ratio refers to a test, computed to identify whether an included item in the questionnaire is necessary to be a part of the questionnaire. For this, the expert views are solicited and they are requested to provide scoring for every statement in the questionnaire. They need to mention whether the included statement is essential, useful but not essential, or not necessary. The formula for obtaining the values is "CVR = (Ne – N / 2) / (N / 2)" in which Ne is the number of experts responding "essential" and N is the total number of experts participating. six experts, three from universities, are expert academicians, and three experts in the field of the hotel industry have more than 7 years of experience. To calculate CVR, the formula for computation is given below.

CVR = N e − (N / 2) Devised Formula: - N / 2

- The following explains the formula calculation in detail
- Ne is the number of experts responding "essential"
- N is the overall sum of panelists.
- The numeric value of Content Validity Ratio ranges from -1 to 1,
- If CVR is less than 0.75, the statement is not accepted.
- The total number of six experts was considered and the details of all th members are given as follows in Table No.4.1

A thorough discussion was done with all the experts. During the interaction, a few were items found not essential and should not be considered for further analysis as per Table No. 4.2. Their response received in detail is mentioned. The researcher needs to find out the reasons for not accepting items. For finalizing the construct, the scores of the CVR value are

calculated as per the **(Lawshe, 1975)** formula. An item score less than .75 has not been considered for further analysis. So, the total numbers of statements were 61 before the conduct of CVR and after the deletion of five statements as suggested by the expert panel, the number of retained statements on the scale was 56.

Panel Size	$N_{critical}$ (Minimum Number of Experts Required to Agree an Item Essential for Inclusion)	Proportion Agreeing Essential	$CVR_{critical}$
5	5	1	1.00
6	6	1	1.00
7	7	1	1.00
8	7	.875	.750
9	8	.889	.778
10	9	.900	.800
11	9	.818	.636
12	10	.833	.667
13	10	.769	.538
14	11	.786	.571
15	12	.800	.600
16	12	.750	.500
17	13	.765	.529
18	13	.722	.444
19	14	.737	.474
20	15	.750	.500

Figure 3.2 – CVR Value

Source: Lawshe, 1975

Items	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	CVR
Item 1	x	x	x	x	x	x	1
Item 2	x	x	x	x	x	x	1
Item 3	x	x	x	x	x	x	1
Item 4	x	x	x	x	x	x	1
Item 5	x	x	x	x	x	x	1
Item 6	x	x	x	x	x	x	1
Item 7	x	x	x	x	x	x	1
Item 8	x	x	x	x	x	x	1
Item 9	x	x	x	x	x	x	1
Item 10	x	x	x	x	x	x	1
Item 11	x	x	x	x	x	x	1
Item 12	x	x	x	x	x	x	1
Item 13	x	x	x	x	x	x	1
Item 14	x	x	x	x	x	x	1
Item 15	x	x	x	x	x	x	1
Item 16	x	x	x	x	x	x	1
Item 17	x	x	x	x	x	x	1
Item 18	x	x	x	x	x	x	1
Item 19	x	x	x	x	x	x	1
Item 20	x	x	x	x	x	x	1
Item 21	x	x	x	x	x	x	1
Item 22	x	x	x	x	x	x	1
Item 23	x	x	x	x	x	x	1
Item 24	x	x	x	x	x	x	1
Item 25	x	x	x	x	x	x	1
Item 26	x	x	x	x	x	x	1
Item 27	x	x	x	x	x	x	1
Item 28	x	x	x	x	x	x	1
Item 29	x	x	x	x	x	x	1
Item 30	x	x	x	x	x	x	1
Item 31	x	x	x	x	x	x	1

Item 32	x	x	x	x	x	x	1
Item 33	x	x	x	x	x	x	1
Item 34	x	x	x	x	x	x	1
Item 35	x	x	x	x	x	x	1
Item 36	x	x	x	x	x	x	1
Item 37	x	x	x	x	x	x	1
Item 38	x	x	x	x	x	x	1
Item 39	x	x	x	x	x	x	1
Item 40	x	x	x	x	x	x	1
Item 41	x	x	x	x	x	x	1
Item 42	x	x	x	x	x	x	1
Item 43	x	x	x	x	x	x	1
Item 44	x	x	x	x	x	x	1
Item 45	x	x	x	x	x	x	1
Item 46	x	x	x	x	x	x	1
Item 47	x	x	x	x	x	x	1
Item 48	x	x	x	x	x	x	1
Item 49	x	x	x	x	x	x	1
Item 50	x	x	x	x	x	x	1
Item 51	x	x	x	x	x	x	1
Item 52	x	x	x	x	x	x	1
Item 53	x	x	x	x	x	x	1
Item 54	x	x	x	x	x	x	1
Item 55	x	x	x	x	x	x	1
Item 56	x	x	x	x	x	x	1
CVR(Critical) for a panel size (N) of 6 is 1.							1

Table No. 3.5 Calculated CRV from Experts Received Response

Face Validity

Face validity refers to whether the questionnaire's questions/statements in the context of the research are acceptable or not. In the assertions of the questionnaire, a pilot analysis was also performed to figure out the inconsistencies. Few defects were noticed and recommended. Required improvements in the questionnaire were made based on the available input**.** Hotel professionals and academicians were invited to give their comments on the draft of the research questionnaire, based on the modifications suggested by the panel of experts, all necessary changes were carried out to the questions drawn out before the administration of the research tool. Most of the experts mentioned that the research questionnaire is easy to understand, but some recommended a few modifications to some questions. Therefore, some changes were made in the wording of some questions. The statement "I follow ergonomics practices " was changed to "I understand ergonomics practices". Some items were deleted as the respondents were found to be incapable of answering them. Thus, the face validity of the tool was established.

Sr.no.	Name	Designation	Company
1	Dr. Jata Shankar Tiwari	Dean	Uttrakhand Open university
2	Dr. Hardaman Bhinder	Assistant Professor	Punjabi University, Patiala
3	Dr. Vikrant Kaushal	Assistant Professor	IIM, Sirmaur
4	Ms. Kanika Arora	Exectuvie Housekeeper	Hyatt Hotel
5	Mr. Harpreet Singh	Learning & Development Manager	Taj Hotel
6	Ms.Kausalya Devi	Exectuvie Housekeeper	Taj Hotel

Table -3.6 Expert Details

Several other suggestions, criteria, and expert advice were also incorporated in the framing of the questionnaire. The final questionnaire for data collection was developed keeping in view the following criteria:

(a) The statements should use simple language to make questions easy to understand.

(b) The statements should express both positive and negative views of the respondent about dimensions.

(c) The statement should be capable to present clear information about the dimensions of the study.

(d) Statement should provide only one interpretation.

The process of content validity remained effective as it helped to find out the errors and ambiguity in the research questionnaire. Based on the result of this evaluation, the main aim of the research questionnaire was found satisfied regarding the collection of the required facts for the objectives of this research study.

The researcher's other basis, as well as method, is to augment the data collected from the records with actual observations on-site. The material was gathered through conversations with hotel employees, including the operational manager, floor supervisor, and all levels of operating personnel.

Executive & Assistant Housekeeper Manager: The talks with the operating manager to determine the level of significance they place on security and the attempts they make to incorporate it into their daily job.

Supervisor: Furthermore, supervisors will be questioned about how they monitor operating personnel's safe behavior, how they ensure that safety standards are followed, and what areas of their day-to-day work they incorporate safety into.

Housekeeping Lower Level Employees: Likewise, discussions were made with functioning employees to determine their data about protection parts, well-being rules, harmfulness data of hazardous substances, and the protections they should observe while at work

CHAPTER 4: DATA ANALYSIS

4.1 INTRODUCTION

In the last chapter, an appropriate research methodology was discussed to derive a suitable course of action to analyze and find out the inferences. An evaluation and analysis of the proposed research methodology are discussed in the present chapter. An analysis of the proposed research methods is conducted and discussed. Various techniques and statistical tools are applied as per the research methodology to find out the conclusion for assessing the objectives of the study.

This chapter is divided into the following sections:

- **Introduction**
- **Pilot Study**
- **Demographic Profile of the Respondents**
- **Missing Data Treatment**
- **Outlier Examination**
- **Normality**
- **Homoscedasticity**
- **Multicollinearity**
- **Main Survey Study**

Initially, the screening was done by conducting a pilot study of the data. After that further screening of the data was conducted by using treatment of outlier examination, missing data treatment, normality, multicollinearity, and homoscedasticity. After the screening of the data, the demographic profile of the respondents was discussed through graphical representation. After this, inferential analysis was conducted using the SPSS software by testing the reliability and validity of the instrument." SPSS is a powerful statistical program. As a built-in feature, several advanced statistical tests are provided**(Arkkelin, D. 2014).** Indicator reliability was conducted to confirm the consistency, and accuracy and wipe out the possibility of biases.

4.2. PILOT STUDY

The pilot study is an indispensable part of making a reliable instrument for achieving the appropriate results. Before collecting complete data, a pilot study is conducted with partial data to assess the instrument. . The pilot study for the current study was conducted in the month of August 2021. The trial study was performed to assess various elements in framing up the questionnaire e.g. questions wordings, familiarity with respondents, response rate, testing sequence of questions, etc. It also helps in validating content validity and reliability. Initially, a sample size of 80 was considered for conducting a pilot study. The survey was conducted among housekeeping employees of different hotels in the NCR Region. The respondents suggested corrections that were incorporated and confirmed the accuracy of face validity. The process of pilot testing had shown that on average, a respondent required around 10 to 15 minutes to fill the survey questionnaire. Cronbach's alpha was used for testing the reliability of the instrument, which ensured that measures were free from error and delivers appropriate results **(Cronbach, 1951).** Table 4.1 shows the results of the reliability test conducted for the pilot testing. The values for the reliability test were above the recommended threshold value of 0.7. However, some items were removed during the pilot testing as feedback shared by some respondents. Some variables like "Space is available to store supplies", and "First aid" were completely removed from the questionnaire as these basic practices are already followed by five-star hotels, as these are part of hotel classification's criteria in surveyed hotels.

Sr. No	Construct	Item (No.)	Reliability
1	Workplace Conditions	7	0.985
2	Risk assessment and control	7	0.972
3	Employee Health & Safety	4	0.944
4	Pandemic Response Plan	6	0.975
5	Employee Retention	8	0.727
6	Employee Efficiency	9	0.977
7	Barriers To Implementing Practices	15	0.972

Table no. 4.1- Construct's Cronbach(reliability)

4.3. MAIN SURVEY STUDY

4.3.1. Demographic Profile of the Respondents

According to **Phillips, (1981)** and **Sharfinan, (1993)** as cited by **Wu, (2003)** single key informant can create response bias by self-reported reviewing. These researchers further suggested including multiple respondents from the same organization to avoid, this type of response bias. **Huber (1985)** suggested some care in choosing the key respondent that may reduce the response biases as mentioned above. This study has tried to include multiple respondents from the selected hotels to minimize the response bias. The demographic details of the respondents were collected via a survey from the questionnaire. The personal details of the guest were shown through different graphs as follows:

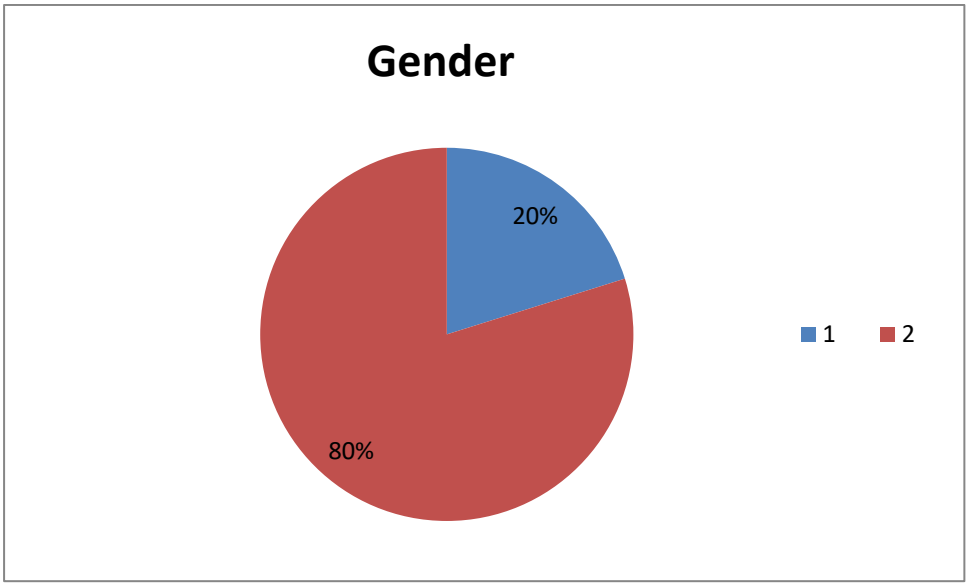
Table 4.2: Gender profile of the respondents

		Frequency	Percent
Valid	Female	72	20.17
	Male	282	79.83

	Total	355	100.0

Source: Primary Data from Questionnaire

Figure 4.1: Respondent's Profile: Gender



01-Female,02- Male

Gender Profile: Out of 355 respondents 282 (80%) are male and 72 (20%) are female. The reason for more male respondents visiting from one place to another place for different reasons may be the business purpose, corporate clients, youngsters or any other reason than the female could be visiting during the vacation, or family gets to gather or any other reasons.

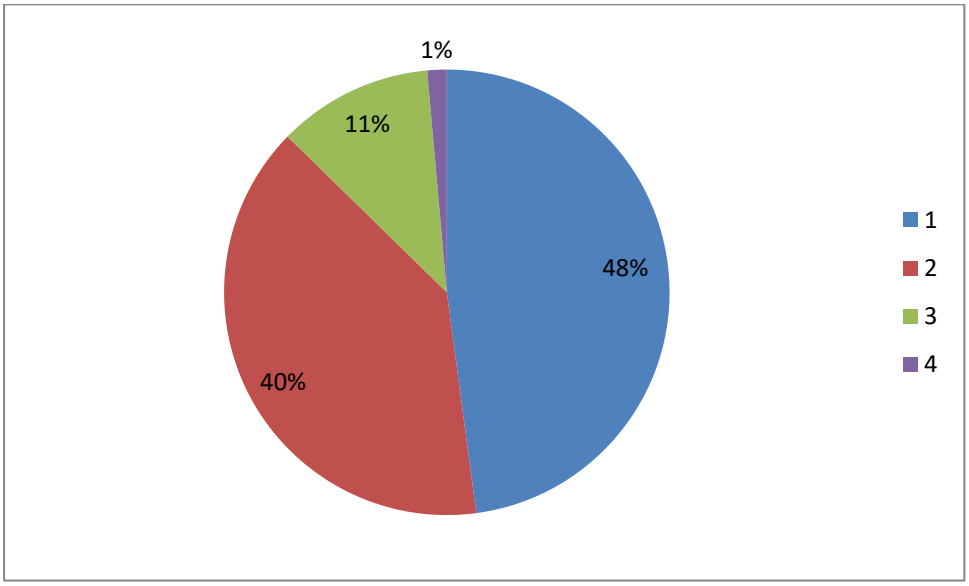
Table 4.2: Age group of the respondents

		Frequency	Percent
Valid			
	18-24	170	47.89

	25-34	140	39.44
	35-44	40	11.27
	45-54	5	1.41
	Total	355	100.0

Source: Primary Data from Questionnaire

Figure 4.2: Respondent's Age Group



01=18-24 ,02=25-34, 03=35-44, 04=45-54

Age Group: Out of 355 respondents, 170 (48%) percent were in the 1st group, 140 (40%) 2nd group, 40 (11%) 3rd group, and 5 (1.4%) 4th group. The age group in the first age group had the greatest number of responders.

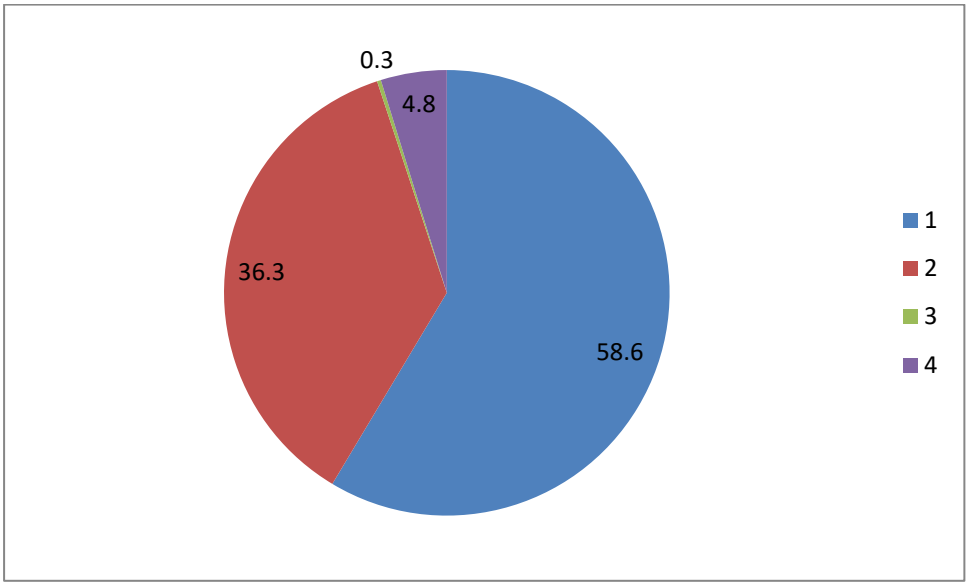
Table 4.3: Marital Status of the respondents

		Frequency	Percent
Valid	Married	208	58.6
	Single	129	36.3
	Divorced	1	0.3

	Not Ready to Disclose	17	4.8
	Total	355	100.0

Source: Primary Data from Questionnaire

Figure 4.3: **Respondents Profile: Marital Status**



01 = Married ,02= Single,03=Divorced ,04= Not ready to disclose

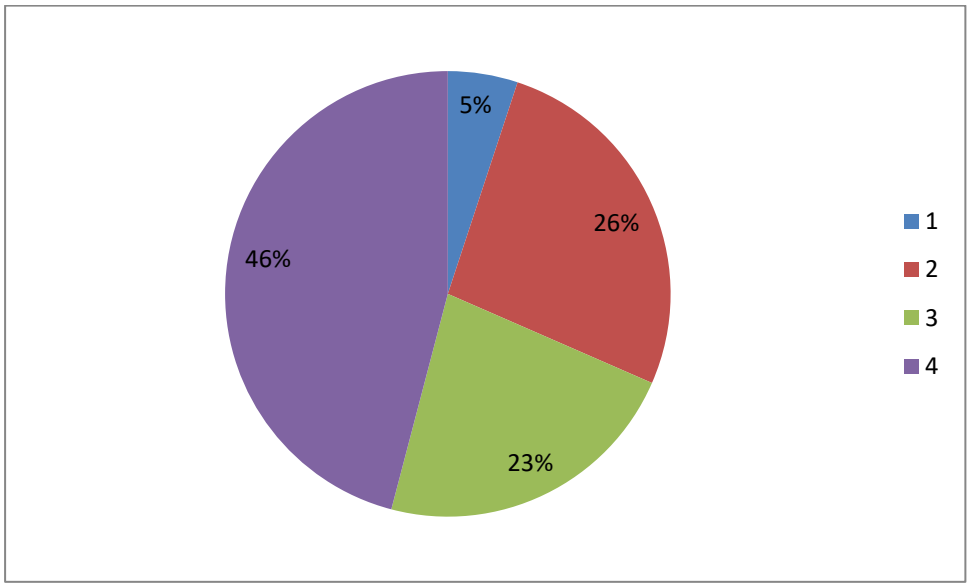
Marital Status: This section focus on the marital status of the respondents out of 355 respondents 129 (36.3%) are single, 208 (58.6%) are married,01 respondent was divorced and 17 (4.8%) were not ready to disclose their marital status.

Table 4.4: Educational Qualifications profile of the respondents

Educational Qualifications			
		Frequency	**Percent**
Valid	High School	35	9.9
	Diploma	148	41.7
	Bachelor's degree	151	42.5

	Masters	21	5.9
	Total	355	100

Figure 4.4: Respondent's Profile: Qualification



01= High School,02 = Diploma,03= Bachelor's degree, 04= Masters

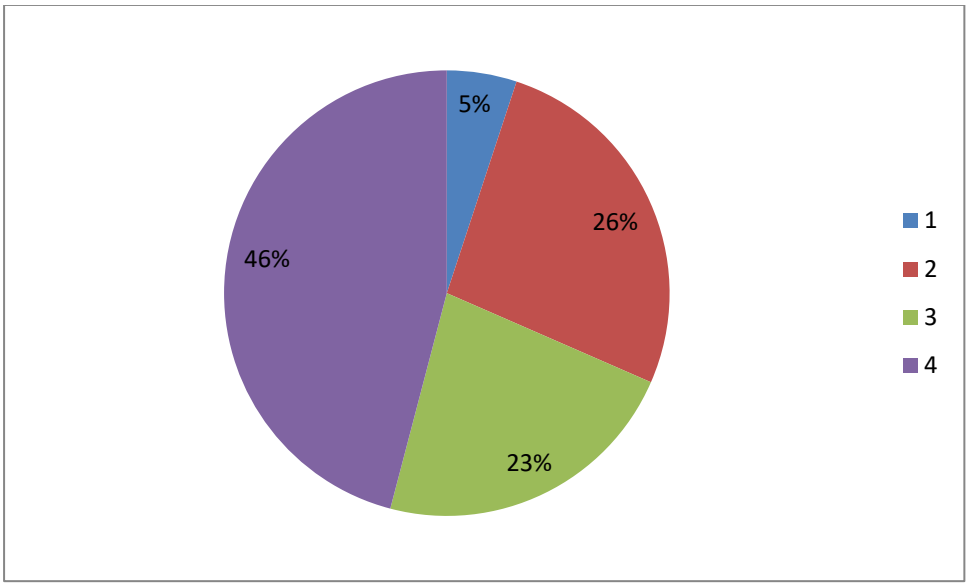
Educational Qualification: The table shows the percentage of educational qualification status out of 355 respondents, the highest number of respondents 151 (42.5%) are professional degree holders, 21 (5.9%) are master's degree holders, 49 (16.3%), master's degree followed by 21 (5.9%) are other qualification and 35 (9.9%) are high school

Table 4.5: Working Experience in Hotel

Working Experience in Hotel			
		Frequency	**Percent**
Valid	11-15 Years	18	5.1

	7-10 Years	94	26.5
	4-6 Years	80	22.5
	Below 03 years	163	45.9
	Total	355	100

Figure 4.5: Working Experience in Hotel



01= 11-15 Years,02 =7-10 Years,03= 4-6 Years, 04=Below 03 years

Working Experience in Hotel- Out of 355 respondents, mostly belongs to the 04th group(below 03 years' experience in the hotel industry),26.5% of respondents belong to the 02nd group then 22.5% census belong to the 03rd group,5.1% people belong to 01st group.

4.3.2. **Missing Data Treatment**

It is important to verify the feedback of the respondents after the demographic profile of the respondents has been explained. Missing data is a big problem in the survey process. This problem generally arises when the respondents do not answer a few questions within the questionnaire during the collection of data for the survey. **Fidell & Tabachnick (2003**) said missing data is a challenge in the data analysis procedure. Also, **Bajpai (2011)** suggested that it is difficult to get complete data during a data collection survey. Missing data creates a lot of statistical problems in data analysis. **Cordeiro, Machás, & Neves (2010)** suggested that statistical power is reduced if the sample size is reduced due to missing data. Thus it is noted that if the explanation of missing data is not adjusted properly then the diminution of the sample produces insufficient data for the overall analysis, and the results obtained from it could lead to flawed interpretations. To solve the problems of missing data **Jr & Black William C (2006)** suggested certain steps follow for the same:

- Find out the kind of missing data
- Look at the level of missing data
- Find out the randomness of missing data
- Finally, carry out the treatment

Efron & Tibshirani (1994) suggested the bootstrap methods for missing data, their association to the theory of multiple imputations, and efficient ways of executing them. Furthermore, **Van Buuren (2018)** also said that missing data pose challenges to real-life data analysis. While conducting the survey, the scholar did not find any item in the data survey process which is not answered by the respondents. All the items were answered by the respondents. Therefore, there were no missing data occurrences and hence no treatment has been applied.

4.3.3. **Outliers Examination**

According to **Aggarwal (2015),** an outlier is an observation during data collection that diverge too much from the other observations to arouse suspicion that it could have been generated by a different mechanism. **Jr & Black William C (2006)** said that an outlier is observations during data collection which are very different from other observations. Most analyst agrees that outliers lead to non-normality of data and imprecise results **(Tabachnick & Fidell, 2007).** There are four main reasons behind outliers **(Tabachnick & Fidell, 2007):**

1) Incorrect data entry could be the reason.

2) Inappropriate specification of codes for missing values

3) Putting entry of those observations which is not part of the population.

4) There are more extreme values of the variables included in the population than a normal distribution. The distribution for the variable in the population which is included has more extreme values than the normal distribution.

As per **Kline (2005),** the outliers are of two types:

Univariate outliers: It is an extreme value on a single variable.

Multivariate outliers: It is a combination of extreme values in two or more variables.

As per **Jr & Black William C (2006),** "An outlier is defined as a value that is more than 3.0 standard deviations away from the mean in a small sample size (i.e. 80 or fewer), whereas a larger sample standard score can be up to 4, and a value that is more than 3.0 standard deviations away from the mean in a larger sample." In this study, items were concatenated to represent a single variable to find univariate outliers. Using SPSS software, the data values of every observation were changed to standardized scores also known as z-scores (**Tabachnick & Fidell, 2007).** Table 4.9 represents the univariate outliers in the data set.

Statistical Analysis performed: I estimated the frequency distribution using the recorded data, which was compiled, placed into spreadsheet software (Microsoft Excel 2010), and exported to the IBM SPSS Version 22.0 Data Editor page. Outliers and missing data were investigated. Pearson's correlation analysis and multiple regression analysis were applied. For all tests, confidence interval and p-value were set at 95% and ≤ 0.05 respectively.

Missing Data Examination: During data collection, none of the items remained unanswered by any of the participants. All the items were answered by the respondents. Therefore, there were no missing data occurrences and hence no treatment has been applied.

Outlier Examination:

The data values of every observation were changed to standardize scores also known as z-scores **Table 4.8** shows the Minimum and Maximum Z scores of variables. None of the Z score scores exceeds the standardized value of 3.29 which suggests no univariate outliers in the data.

Table 4.8: Minimum and Maximum Z scores of variables

	Minimum	Maximum
Zscore: Workplace Conditions	-1.79235	2.02529
Zscore: Risk assessment and control	-1.73268	2.41612
Zscore: Employee Health and Safety	-1.96206	1.87711
Zscore: Pandemic Response Plan	-1.95336	2.01160
Zscore: Workplace engagement	-1.98981	1.78597
Zscore: Job Enrichment	-2.11402	1.76518
Zscore: Employee well being	-2.02062	1.86512
Zscore: Employee Efficiency	-2.11583	2.05789
Zscore: Work life balance	-2.44215	1.72824
Zscore: Job satisfaction	-1.68110	1.84025

Zscore: Employee Retention	-1.98814	2.13395

A graphical method is applied for detecting multivariate outliers using a box plot. The graph in **figure 1** indicates that 3 cases had been found as mild outliers with an interquartile range of more than 1.5. No extreme outliers are detected in the data.

Figure 4.6: Box-Plot for Outlier Examination

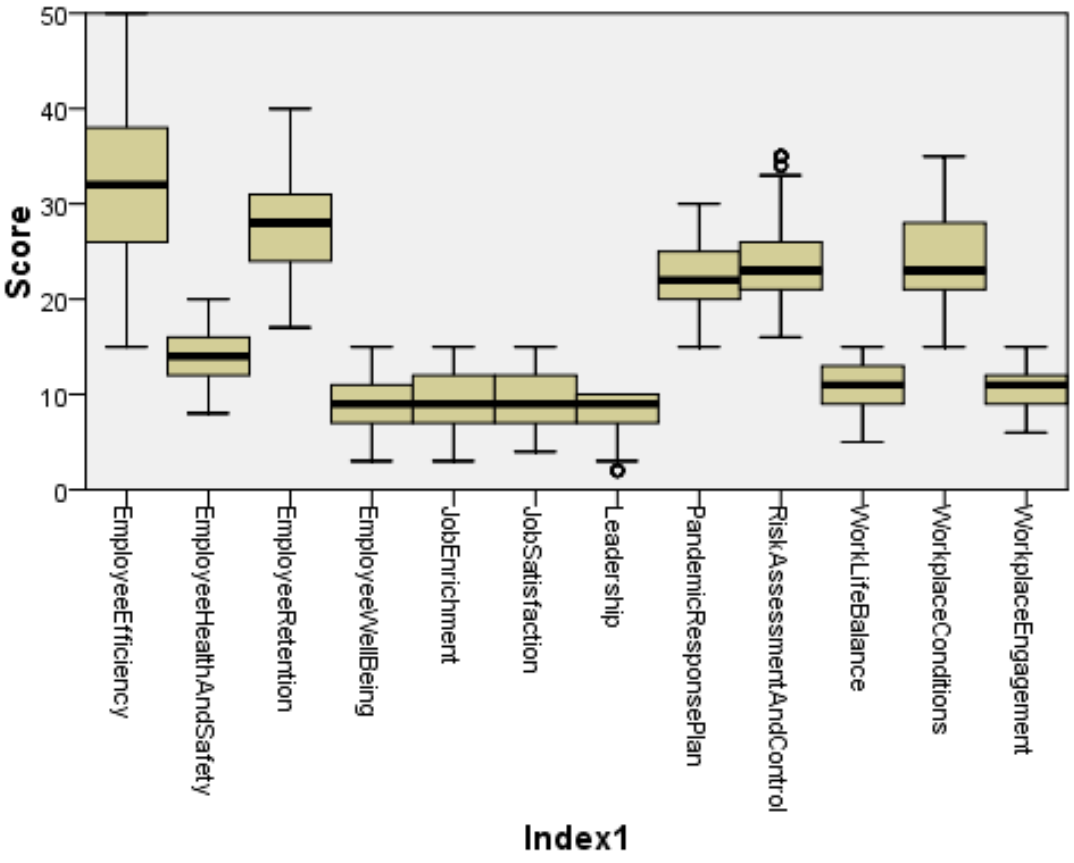


Table 4.9 shows Multivariate Outlier Detection. Mahalanobis D_2 value was calculated using a linear regression method. Case no 53, 74, 73, 75, 241, 24,166, and 171 have shown the

value of D_2/df as more than 3, so all of them have been considered multivariate outliers. As per **Jr & Black William C (2006)** suggested that unless an outlier is deviating from the inferences, it can be kept in the analysis. Although **Tabachnick & Fidell (2007**) said that the outlier could be retained if they were found to be problematic until they are not going to distort the results. Considering these it was decided to retain the outliers found in table B.

Table 4.9: Multivariate Outlier Detection

Case Number	Mahalanobis D2	D2/df
53	22.95995	5.74
74	14.88050	3.72
73	14.43207	3.61
75	13.17823	3.29
241	12.80354	3.20
24	12.47282	3.12
166	12.36129	3.09
171	12.09682	3.02

Objective -1 - To identify the existing ergonomics practices in five-star hotels of NCR

Table 4.10: Assessment of existing ergonomic practices in five-star hotels of NCR

Ergonomic Practices	Responses n (%)				
Workplace conditions	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
I find the work environment encouraging.	26(7.3)	49(13.8)	103(29.1)	135(38.1)	41(11.6)
Employees are encouraged to report concerns about working conditions	78(22.0)	08(2.3)	18(5.1)	144(40.7)	106(29.9)
The Uniform is designed with employee safety in mind	120(33.9)	42(12.1)	106(30.2)	19.6(5.4)	65(18.4)
All equipment is securely stacked and stored	15(4.2)	9(2.5)	26(7.3)	147(41.5)	157(44.4)
Cleanliness of working area is maintained at all time	35(9.9)	2(0.6)	5(1.4)	239(67.5)	73(20.6)
Wires are covered and drawn properly to avoid electric shocks.	13(3.7)	70(19.8)	132(37.3)	77(21.8)	62(17.5)
Proper ventilation and lighting are available.	33(9.3)	10(2.8)	39(11.0)	179(50.6)	93(26.3)
Risk assessment and control					
Chemicals are tagged and stored properly	78(22.0)	53(15.0)	37(10.5)	104(29.4)	82(23.2)
Proper training is given to the employees regarding the safe use of cleaning agents	10(2.8)	19(5.4)	39(11.0)	163(46.0)	123(34.7)
Proper training is given to the employees about the safe use of cleaning equipment	78(22.0)	80(22.6)	43(12.1)	86(24.3)	67(18.3)
Supervisors are responsible for identifying unsafe working conditions	14 (4)	19 (5.4)	62 (17.5)	129 (36.4)	130 (36.7)
Material Safety Data Sheet (MSDS) is available for all cleaning agents	75 (21.2)	67 (18.9)	64 (18.1)	79 (22.3)	69 (19.5)
The organization has a system of reporting injuries or matters of safety concern	0	109 (30.8)	76 (21.5)	118 (33.3)	51 (14.4)
Employees maintain perfect posture while doing the operation.	54 (15.3)	37 (10.5)	93 (26.3)	141 (39.8)	29 (8.2)
Employee Health and Safety					
I understand that the nature of the job is prone to occupational hazards	0	89 (25.1)	71 (20.1)	136 (38.4)	58 (16.4)
I am suffering from occupational diseases i.e. asthma, joint pain, skin allergy, etc.	0	96 (27.1)	52 (14.7)	153 (43.2)	53 (15)
Adequate workload is given to employees	0	35 (9.9)	89 (25.1)	173 (48.9)	57 (16.1)
I understand importance of ergonomic practices	0	82 (23.2)	71 (20.1)	143 (40.4)	58 (16.4)
Pandemic Response Plan					
My organization has drafted policies to counter pandemic issues i.e. flexible leave policies	0	88 (24.9)	59 (16.7)	153 (43.2)	54 (15.3)
Organization has arranged training session on infection control	0	34 (9.6)	68 (19.2)	136 (38.4)	116 (32.8)
Personal protective equipment has been provided to employees	0	62 (17.5)	57 (16.1)	142 (40.1)	93 (26.3)

Organization has created awareness regarding vaccination of Covid 19	0	65 (18.4)	35 (9.9)	192 (54.2)	62 (17.5)
Temperature assessment is being done on hourly basis	0	61 (17.2)	74 (20.9)	141 (39.8)	78 (22)
Hand wash is mandatory on hourly basis	0	53 (15)	30 (8.5)	195 (55.1)	76 (21.5)

Table 4.11 Interpretation for mean values used in the study

Mean value	**Interpretation**
Above 4	Always
3.5 to 4	Very often
3 to 3.5	Often
2.5 to 3	Sometimes
Below 2.5	Never

Sr.No	**Items**	**Mean**	**Std. Deviation**	**Scale**
1	WC1	3.26	1.134	Often
2	WC2	3.64	1.42	Very often
3	WC3	2.45	1.463	Never
4	WC4	4.23	0.916	Always
5	WC5	3.97	0.934	Very often
6	WC6	3.03	1.236	Often
7	WC7	3.82	1.138	Very often
8	RAC1	3.27	1.513	Often

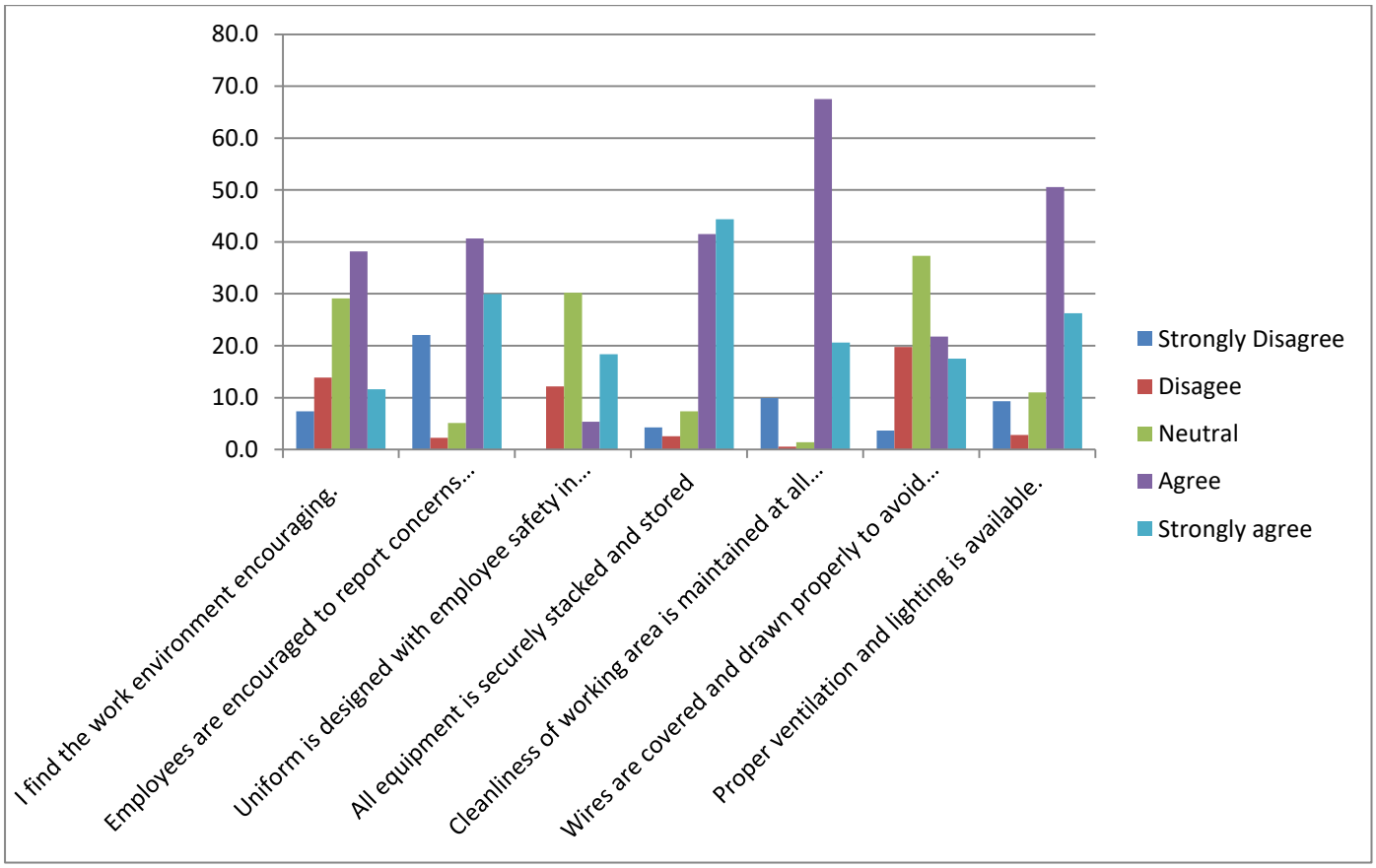
9	RAC2	4.16	0.89	Always
10	RAC3	3.08	1.49	Often
11	RAC4	3.97	1.05	Very often
12	RAC5	3	1.43	Often
13	RAC6	3.31	1.059	Often
14	RAC7	3.15	1.192	Often
15	EHS1	3.46	1.04	Often
16	EHS2	3.46	1.046	Often
17	EHS3	3.71	0.853	Very often
18	EHS4	3.5	1.022	Often
19	PRP4	3.49	1.027	Often
20	PRP2	3.94	0.95	Very often
21	PRP3	3.75	1.032	Very often
22	PRP4	3.71	0.963	Very often
23	PRP5	3.67	1.005	Very often
24	PRP6	3.83	0.934	Very often

Table 4.10 shows the frequency of responses to questions on existing ergonomic practices in five-star hotels of NCR among study participants. Among all participants, the majority of them (49.7%) agree with the encouraging work environment. Also, the majority of them

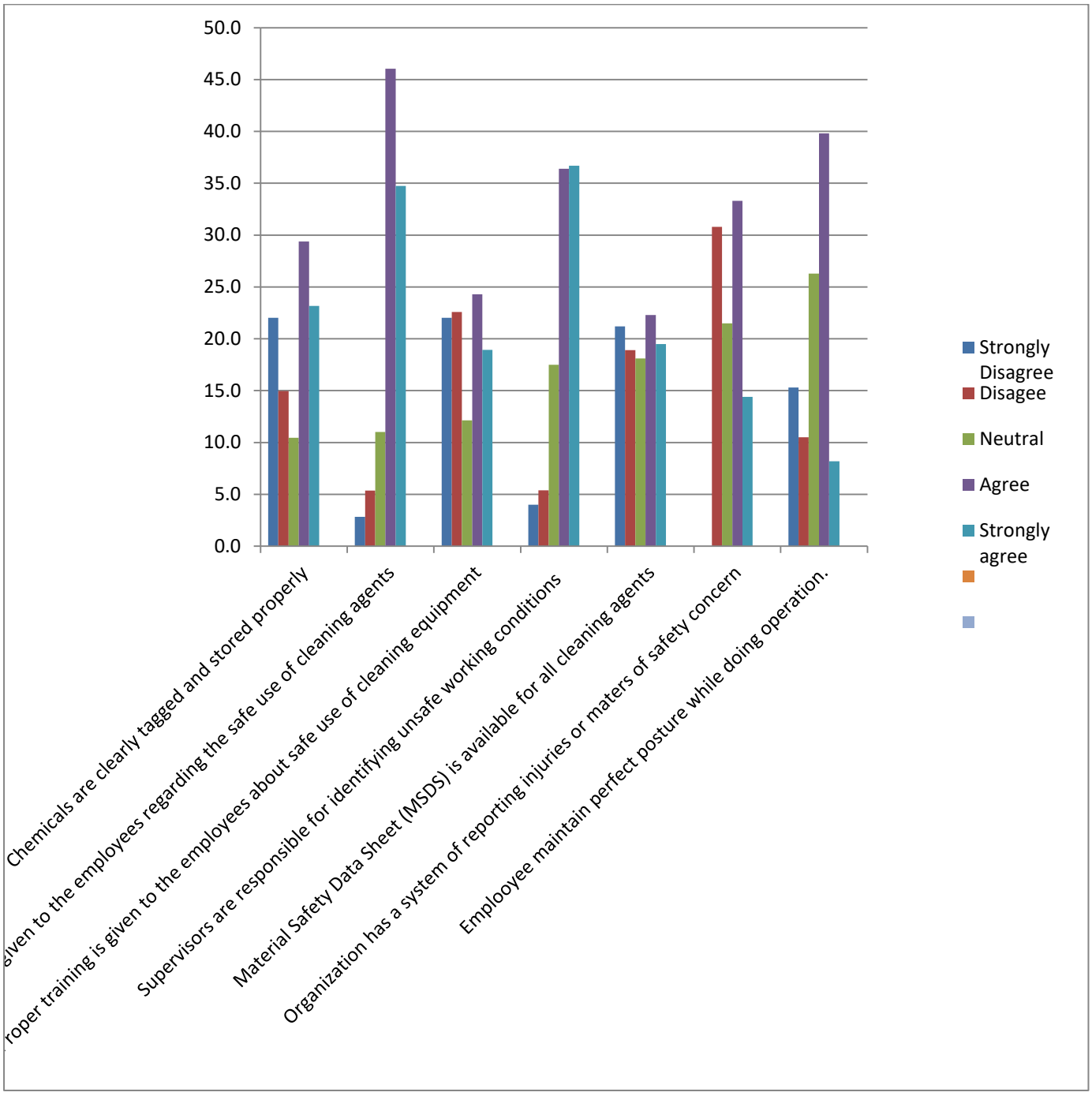
agreed (40.7%) and strongly agreed (29.9%) that Employees are encouraged to report concerns about working conditions. A majority (46%) of them disagreed with the fact that Uniform is designed with employee safety in mind. However, the majority of the population showed agreement to secure stacking and storage of all equipment, proper cleanliness, ventilation, and lighting of the area at all times **(Graph 1.1).** A majority (39.3%) of them disagreed with proper covering and arrangement of wires to avoid electric shocks. Most of the respondents(76.9%) have agreed that proper ventilation and lighting are available When risk was assessed, the majority of them agreed that Chemicals are clearly tagged and stored properly (52.6%) and Proper training is given to the employees regarding the safe use of cleaning agents (80.7%). Maximum participants strongly agreed (73.1%) that Supervisors are responsible for identifying unsafe working conditions. When asked about Material Safety Data Sheet (MSDS) availability for cleaning agents, almost equal responses were obtained. The majority of them agreed that Organization has a system of reporting injuries or matters of safety concern (33.3%) and that employees maintain perfect posture while doing the operation (39.8%) **(Graph 1.2)**. When Employee Health and Safety were assessed, the majority of them agreed to the fact that I understand that the nature of the job is prone to occupational hazards (38.4%), I am suffering from occupational diseases i.e. asthma, joint pain, skin allergy, etc. (43.2%), Adequate workload is given to employees (48.9%) and I understand the importance of ergonomic practices (40.4%) **(Graph 1.3).** Around 43.2% of them agreed that their organization has drafted policies to counter pandemic issues i.e. flexible leave policies. The majority of them agreed (38.4%) and strongly agreed (32.8%) that Organization has arranged training sessions on infection control. Also according to the majority of participants (40.1%), Personal protective equipment has been provided to employees. The majority of them agreed that Organization has created awareness regarding

vaccination of Covid 19 (54.2%), Temperature assessment is being done on an hourly basis (39.8%) and Handwashing is mandatory on an hourly basis (55.1%) **(Graph 1.4).**

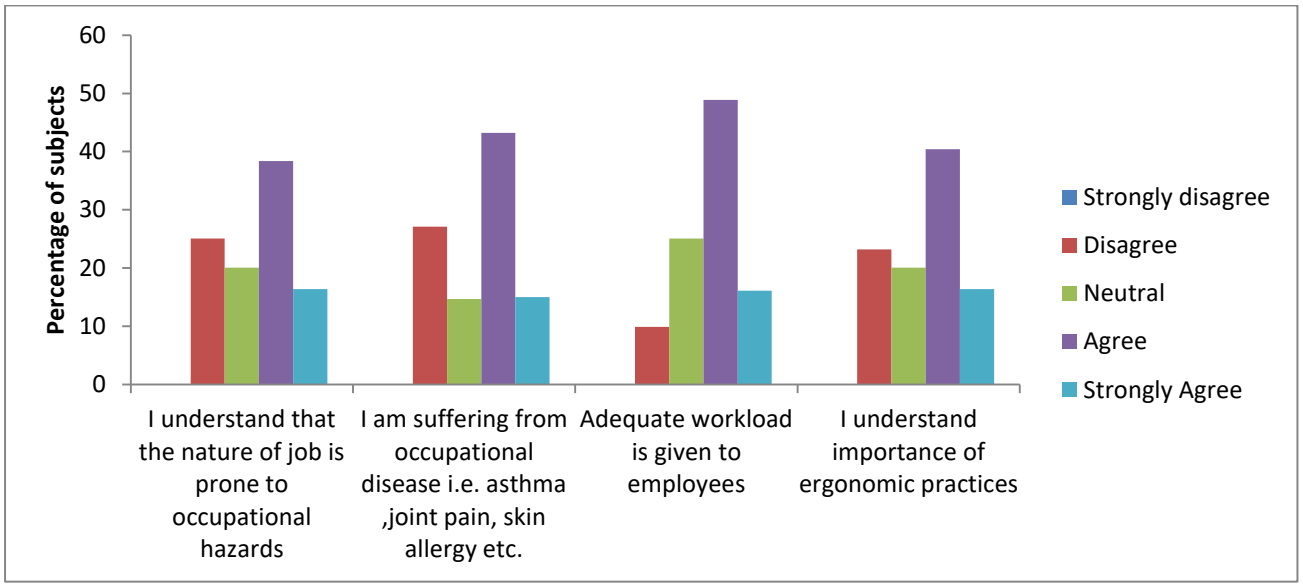
Graph 1.1 Assessment of existing workplace conditions in five-star hotels of NCR



Graph 1.2 Assessment of existing risk assessment and control practices in five-star hotels of NCR



Graph 1.3 Assessment of existing Employee Health and Safety practices in five-star hotels of NCR



Graph 1.4 Assessment of pandemic response plan in five-star hotels of NCR

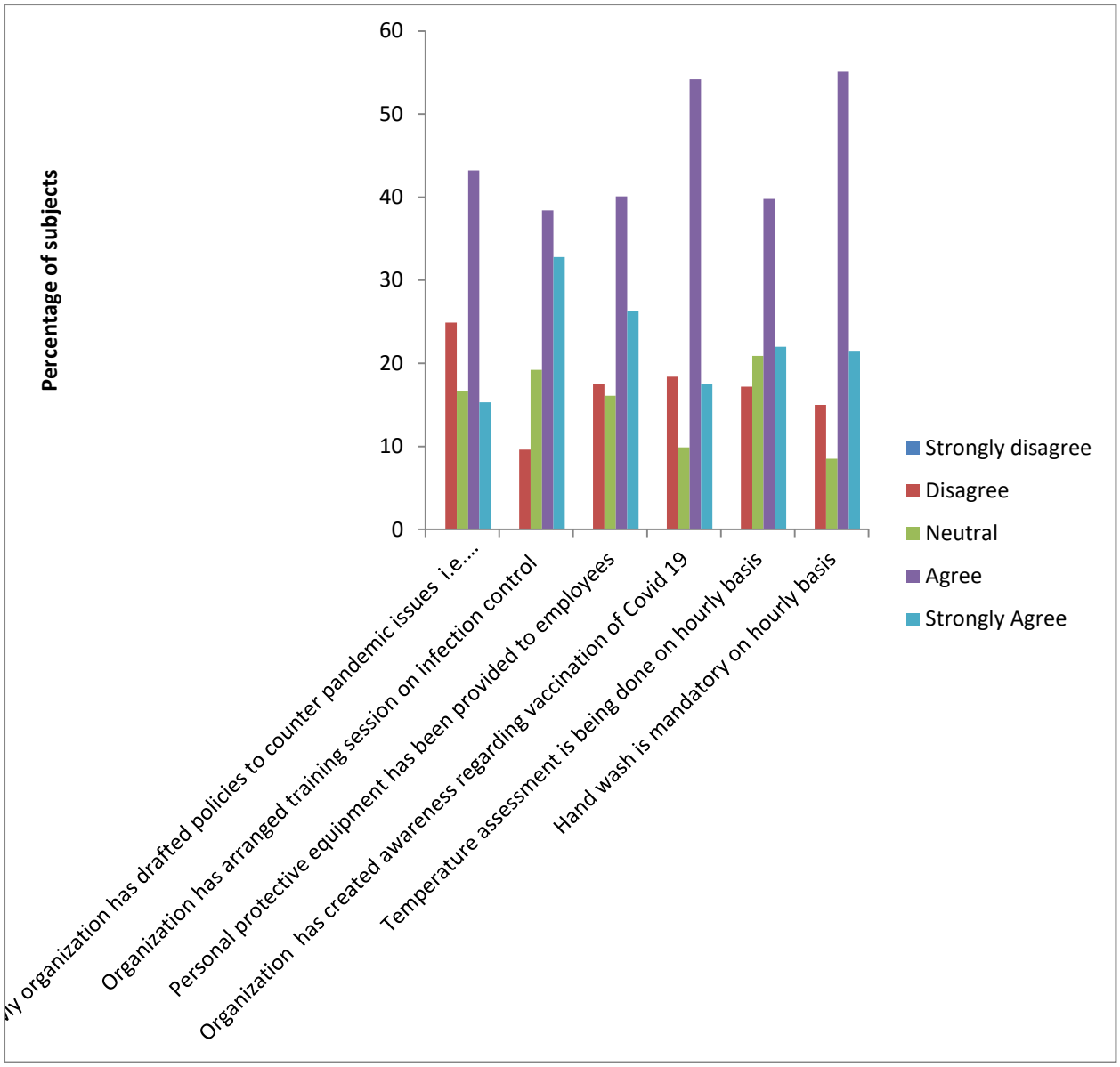


Table 4.12: Correlation of domains of Ergonomic practices with employee efficiency

	Employee efficiency (Correlation Coefficient)			
Ergonomic practices	**Workplace engagement**	**Job Enrichment**	**Employee well being**	**Total efficiency**
Workplace conditions	0.429*	0.539*	0.644*	0.632*
Risk assessment and control	0.523*	0.620*	0.572*	0.642*
Employee Health and Safety	0.454*	0.442*	0.571*	0.567*
Pandemic Response plan	0.600*	0.533*	0.644*	0.675*

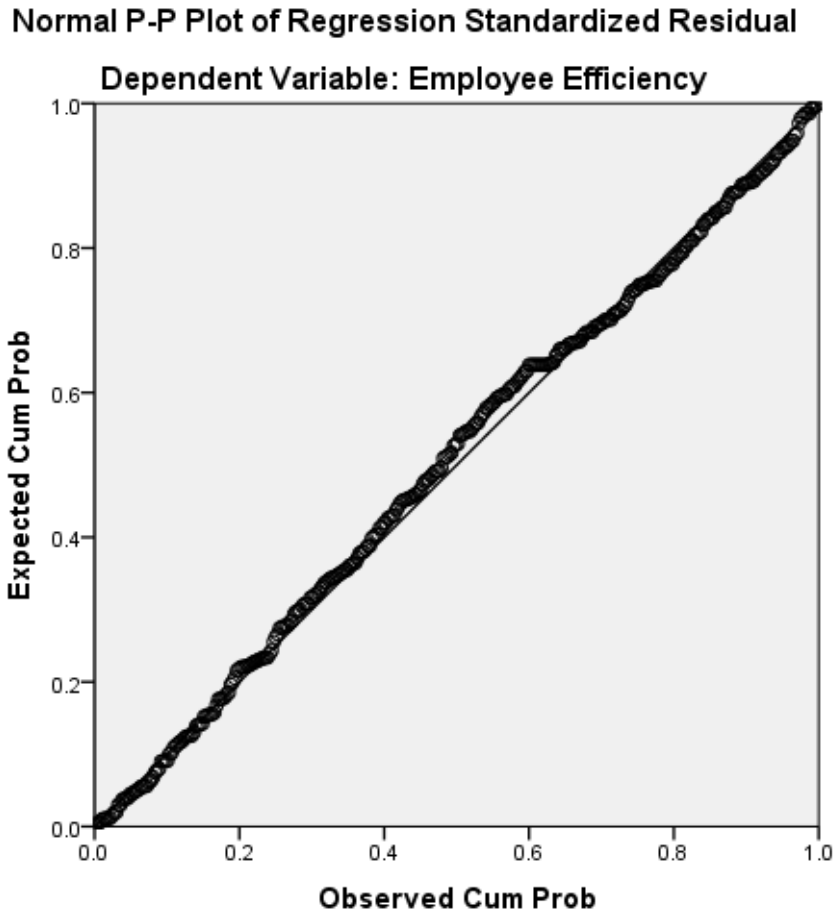
The test applied: Pearson's correlation, *indicates a statistically significant correlation

Workplace engagement, job enrichment, employee well-being, Total Efficiency with Workplace conditions, Risk assessment and control (R.A.C), Employee Health and Safety, and pandemic reaction strategy are all somewhat significant in Table 2. Workplace involvement with workplace conditions, R.A.C, employee health and safety, and pandemic response plan were shown to have correlation coefficients (r) of 0.429, 0.523, 0.454, and 0.600, respectively. The correlation coefficients (r) of Job Enrichment with Workplace Conditions, R.A.C, Employee Health and Safety, and Pandemic Response Plan, respectively, were 0.539, 0.620, 0.442, and 0.533. Employee well-being and workplace conditions, risk assessment and control, employee health and safety, and pandemic response plan all had correlation coefficients of 0.644, 0.572, 0.571, and 0.644, respectively. Employee Efficiency and Workplace Conditions, R.A.C, Employee Health and Safety, and Pandemic Response Plan all had correlation coefficients of 0.632, 0.642, 0.567, and 0.675, respectively.

To apply multiple linear regression analysis, assumptions of normality, linearity, homoscedasticity, and multicollinearity were assessed.

Normality: Normality was checked with a normal P-P plot which shows a normal distribution of residuals. (Figure 2)

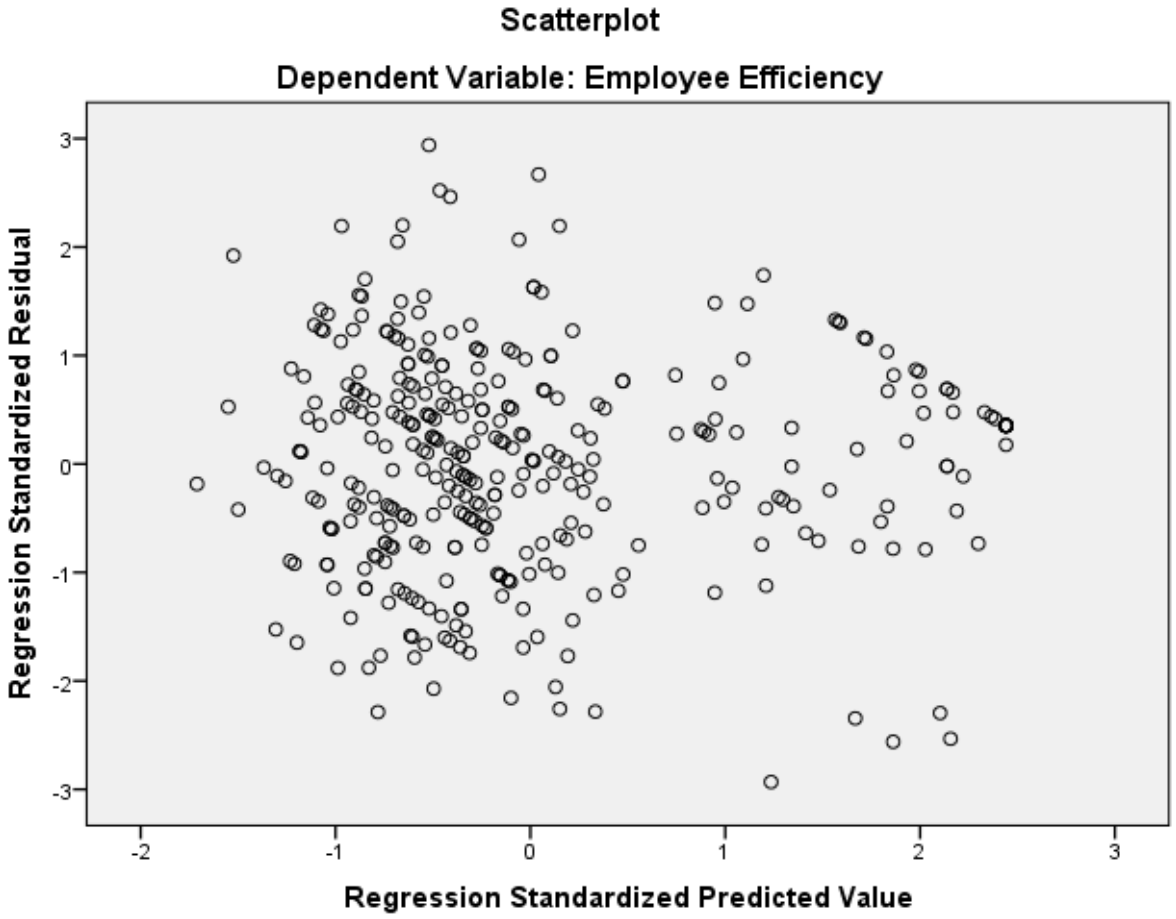
Figure 4.7: Normal P-P plot



Linearity: All the independent variables showed a linear relationship with the dependent variable (Table 2).

Homoscedasticity: Homoscedasticity was assessed using a scatter plot of residuals **(Figure 3)** and data was found to be homoscedastic.

Figure 4.8: Scatterplot of residuals



Multicollinearity: Variance inflation factor (VIF) of less than 5 suggested no multicollinearity issue **(Table 3).**

Table 4.13: Multiple linear regression with work efficiency as a dependent variable and domains of Ergonomic practices as independent variables

Model		Unstandardized Coefficients		Standardized Coefficients	t	p-value	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-5.950	1.904		-3.126	0.002		
	Workplace Conditions	0.346	0.089	0.216	3.892	0.000	0.412	2.426
	Risk assessment and control	0.474	0.096	0.259	4.922	0.000	0.460	2.172
	Employee Health and Safety	-0.070	0.143	-0.026	-0.489	0.625	0.449	2.229
	Pandemic Response Plan	0.889	0.114	0.401	7.770	0.000	0.477	2.097
a. Dependent Variable: Employee Efficiency								

Table 3 shows that Employee efficiency can be predicted significantly by Workplace conditions, Risk assessment, control, and Pandemic Response plan. With one unit increase in Workplace conditions, Employee efficiency increases by 0.346. With one unit increase in Risk assessment and control, Employee efficiency increases by 0.474. With a one-unit increase in Pandemic Response Plan, Employee efficiency increases by 0.889.

Table 4.14: Correlation of domains of Ergonomic practices with employee retention

	Employee retention			
Ergonomic practices	**Work-life balance**	**Job satisfaction**	**Leadership style**	**Overall retention**
Workplace conditions	0.447*	0.507*	0.087	0.511*
Risk assessment and control	0.452*	0.605*	0.043	0.552*
Employee Health and Safety	0.493*	0.411*	0.126*	0.495*
Pandemic Response plan	0.555*	0.443*	0.188*	0.564*

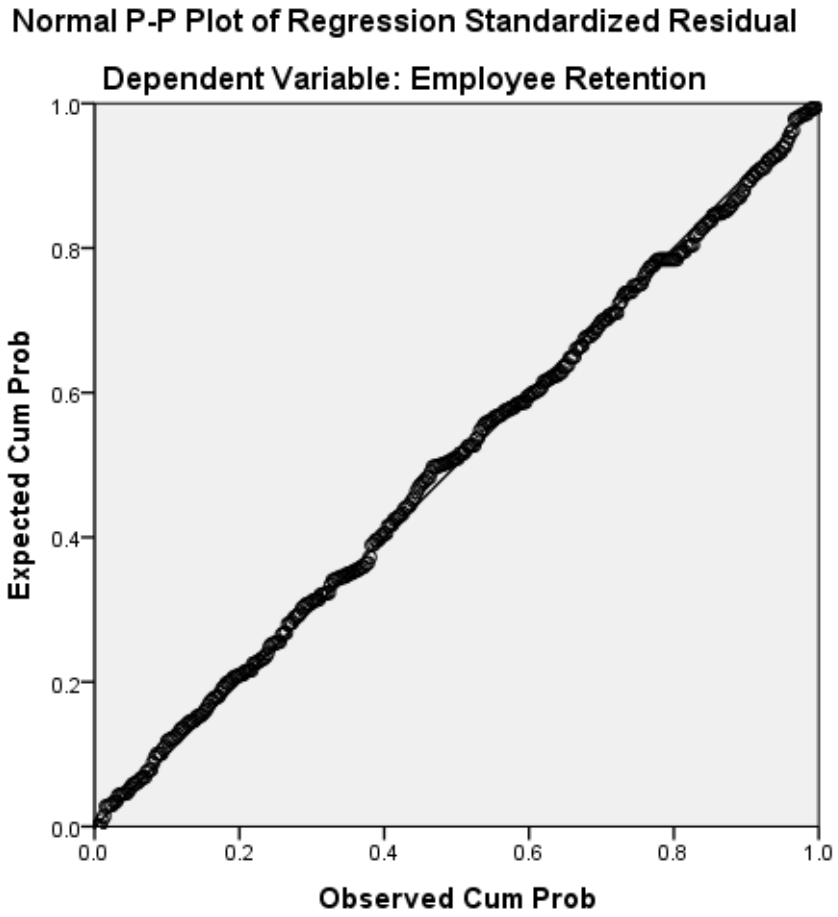
The test applied: Pearson's correlation, *indicates a statistically significant correlation

Table 4 shows a moderately significant correlation between Worklife Balance, Job Satisfaction, and Employee Retention with Workplace conditions, Risk assessment and control, Employee Health and Safety, and pandemic response plan. The correlation coefficients (r) of the correlation of Worklife Balance with Workplace conditions, Risk assessment and control, Employee Health and Safety, and pandemic response plan were found to be 0.447, 0.452, 0.493, and 0.555 respectively. The correlation coefficients (r) of correlation of Job Satisfaction with Workplace conditions, Risk assessment and control, Employee Health and Safety, and pandemic response plan were found to be 0.507, 0.605, 0.411, and 0.443 respectively. The correlation coefficients (r) of the correlation of Employee Retention with Workplace conditions, Risk assessment and control, Employee Health and Safety, and pandemic response plan were found to be 0.511, 0.552, 0.495, and 0.564 respectively. A weak positive significant correlation was also observed between Leadership and Employee Health and Safety (0.126) and Pandemic response plan (0.188) respectively.

To apply multiple linear regression analysis, assumptions of normality, linearity, homoscedasticity, and multicollinearity were assessed.

Normality: Normality was checked with a normal P-P plot which shows a normal distribution of residuals. (Figure 4)

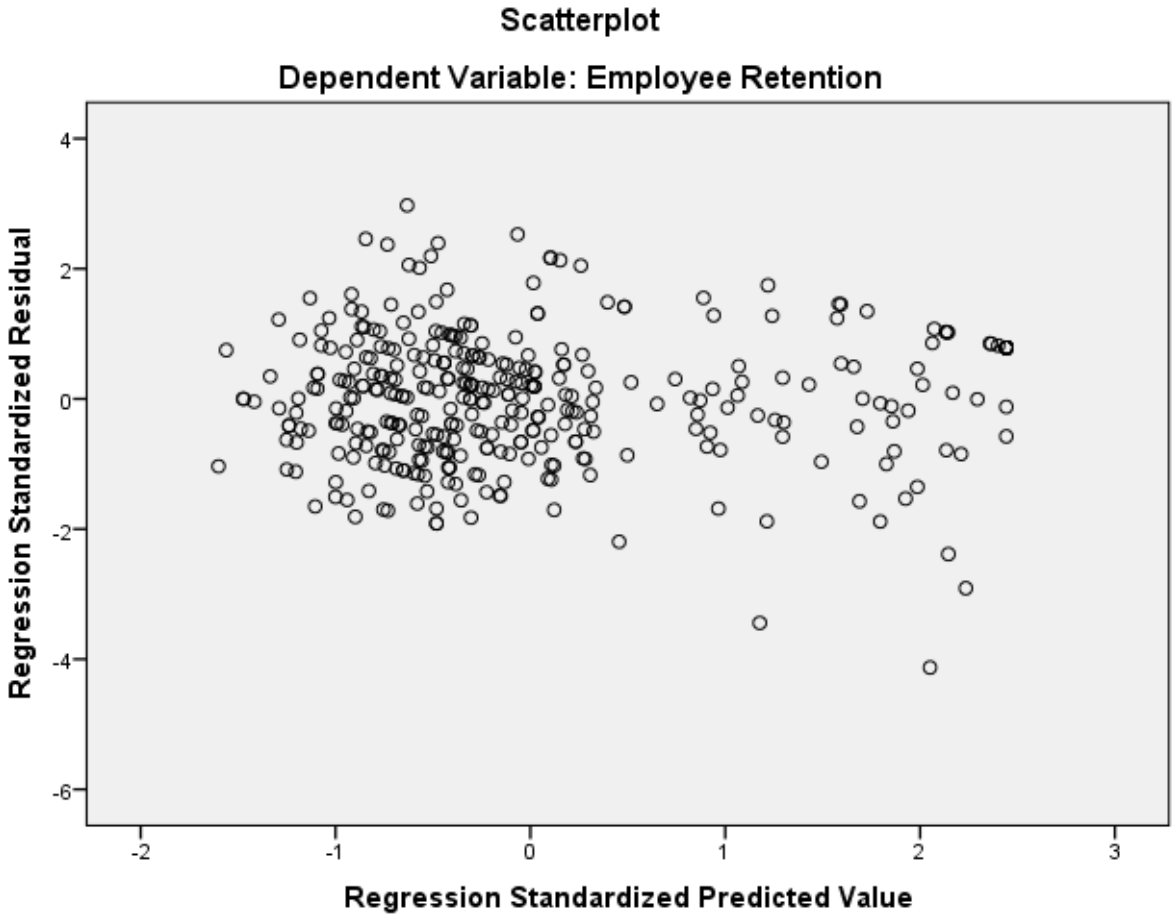
Figure 4.9: Normal P-P plot



Linearity: All the independent variables showed a linear relationship with the dependent variable (Table 4).

Homoscedasticity: Homoscedasticity was assessed using a scatter plot of residuals **(Figure 5)** and data was found to be homoscedastic.

Figure 4.10: Scatterplot of residuals



Multicollinearity: Variance inflation factor (VIF) of less than 5 suggested no multicollinearity issue **(Table 5).**

Table 4.15: Multiple linear regression with employee retention as a dependent variable and domains of Ergonomic practices as independent variables

Model		Unstandardized Coefficients		Standardized Coefficients	t	p-value	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	6.562	1.493		4.396	0.000		
	Workplace Conditions	0.145	0.070	0.136	2.077	0.039	0.412	2.426
	Risk assessment and control	0.266	0.075	0.218	3.526	0.000	0.460	2.172
	Employee Health and Safety	0.010	0.112	0.005	0.086	0.932	0.449	2.229
	Pandemic Response Plan	0.514	0.090	0.348	5.722	0.000	0.477	2.097
a. Dependent Variable: Employee Retention								

Table 3 shows that Employee retention can be predicted significantly by Workplace conditions, Risk assessment, control, and Pandemic Response plan. With one unit increase in Workplace conditions, Employee retention increases by 0.145. With one unit increase in Risk assessment and control, Employee retention increases by 0.266. With a one-unit increase in Pandemic Response Plan, Employee retention increases by 0.514.

Table 4.16: Assessment of barriers in the execution of ergonomic practices in five-star hotels of NCR

	Responses n (%)				
Management/Leadership Barriers	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Lack of information on work-related injuries and illnesses	20 (5.6)	40 (11.3)	40 (11.3)	56 (15.8)	198 (55.9)
Shortage of skilled manpower in organization	27 (7.6)	38 (10.7)	53 (15)	58 (16.4)	178 (50.3)
Employees do not like to report their injury/discomfort	49 (13.8)	55 (15.5)	60 (16.9)	55 (15.5)	135 (38.1)
Organization consider safety and health issues as cost rather than investment	38 (10.7)	78 (22)	145 (41)	51 (14.4)	42 (11.9)
Employees incline to be overconfident with their past working experiences and miscalculate the risk.	52 (14.7)	89 (25.1)	106 (29.9)	63 (17.8)	44 (12.4)
Lack of employee motivation in organization	21 (5.9)	62 (17.5)	106 (29.9)	96 (27.1)	69 (19.5)
Lack of time is a barrier for implementation of health and safety practices	5 (1.4)	31 (8.8)	88 (24.9)	137 (38.7)	93 (26.3)
Employee's barriers					
I fear losing my job if I report any injury /health issues	15 (4.2)	33 (9.3)	118 (33.3)	124 (35)	64 (18.1)
Hotel has no system/channel to report any injury /health issues	29 (8.2)	80 (22.6)	116 (32.8)	73 (20.6)	56 (15.8)
I do not have enough knowledge of ergonomics practices	6 (1.7)	29 (8.2)	128 (36.2)	138 (39)	53 (15)
I am not comfortable to adopt new standard operating procedure	10 (2.8)	38 (10.7)	0	240 (67.8)	66 (18.6)
Absence of ergonomics policies of the regulatory body (HRACC)					
Lack of ergonomics polices in HRACC guidelines	21 (5.9)	66 (18.6)	0	198 (55.9)	69 (19.5)
Lack of active involvement of government with employers	36 (10.2)	80 (22.6)	0	150 (42.4)	88 (24.9)
Absence of appropriate vision for occupational safety and health programs	3 (0.8)	14 (4)	64 (18.1)	203 (57.3)	70 (19.8)
Failure to establish culture of prevention in the field of occupational health and safety	4 (1.1)	15 (4.2)	64 (18.1)	194 (54.8)	77 (21.8)

Table 4.17 Interpretation for Mean Values Used in the Study

Mean value	Interpretation
Above 4	Always
3.5 to 4	Very often
3 to 3.5	Often
2.5 to 3	Sometimes
Below 2.5	Never

Table 4.18 – Mean value of variables used in the study

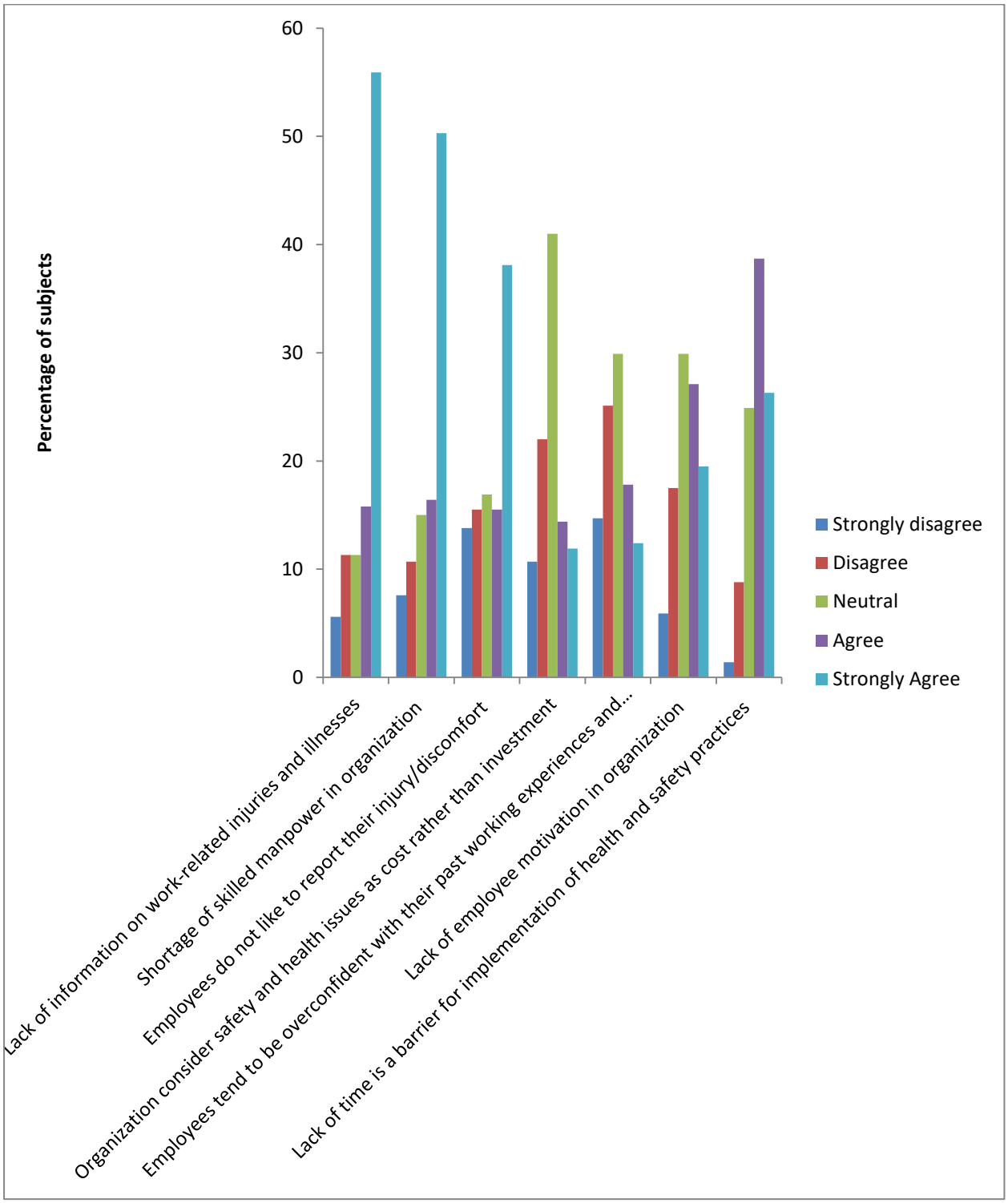
Sr.No	Items	Mean	Std. Deviation	Scale
1	BIEP1	4.05	1.279	Often
2	BIEP2	3.91	1.329	Very often
3	BIEP3	3.49	1.470	Never
4	BIEP4	2.95	1.127	Always
5	BIEP5	2.88	1.226	Very often
6	BIEP6	3.37	1.154	Often
7	BIEP7	3.80	.975	Very often
8	BIEP8	3.53	1.027	Often
9	BIEP9	3.13	1.174	Always
10	BIEP10	3.57	.901	Often

11	BIEP11	3.89	.927	Very often
12	BIEP12	3.64	1.163	Often
13	BIEP14	3.49	1.347	Often
14	BIEP14	3.91	.779	Often
15	BIEP15	3.92	.815	Often

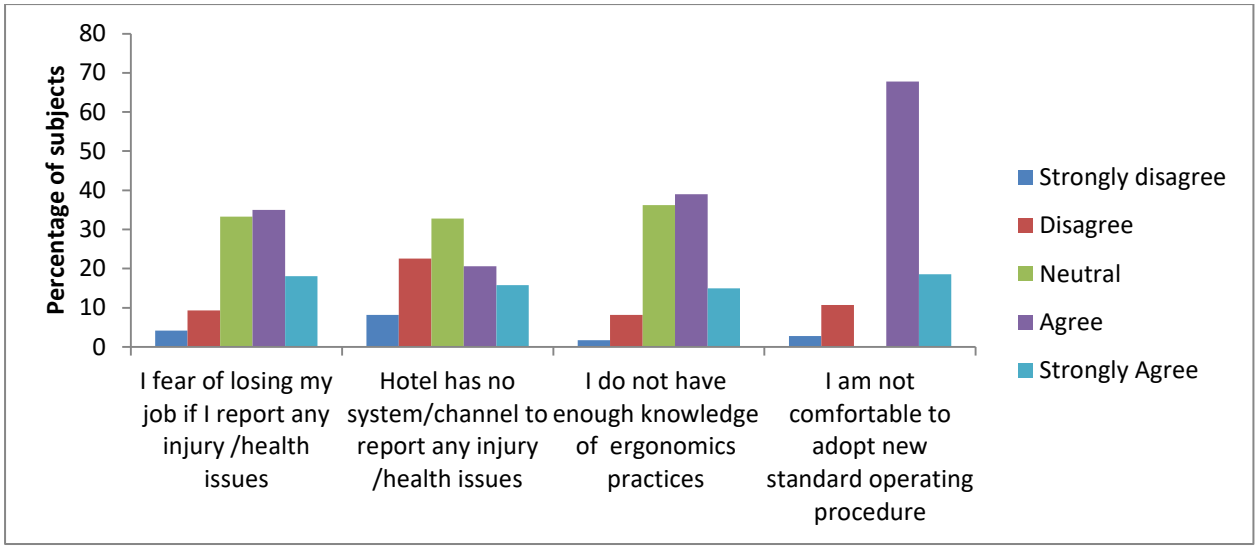
Table 4.16 shows barriers in the execution of ergonomic practices in five-star hotels of NCR. A majority (55.9%) of participants strongly agreed on the lack of information on work-related injuries and illnesses. Also, the majority of them strongly agreed (50.3%) and agreed (16.4%) with the fact that there is a shortage of skilled manpower in the organization. Around 38% of participants strongly agreed that Employees are hesitant to disclose injuries or pain. When asked whether organizations regard safety and health issues as a cost rather than an investment, the majority of respondents offered neutral answers. (41%), employees tend to be overconfident with their past working experiences and underestimate the risk (29.9%), and lack employee motivation in an organization (29.9%). Lack of time is a barrier to the implementation of health and safety practices was agreed and strongly agreed by 38.7% and 26.3% of study participants respectively. Maximum participants (35%) agreed on fear of losing their job if they report any injury /health issues. A neutral response (32.8%) was obtained on no availability of a system/channel to report any injury /health issues. Around 39% agreed on not having enough knowledge of ergonomics practices and 67.8% of participants agreed on not being comfortable to adopt the new standard operating procedure.

Absence of ergonomics initiatives in HRACC guidelines (55.9%), lack of active government involvement with employers (42.4%), The majority of them cited a lack of appropriate vision for occupational safety and health programs (57.3%), as well as a failure to develop a prevention culture in the field of occupational health and safety (54.8 percent).

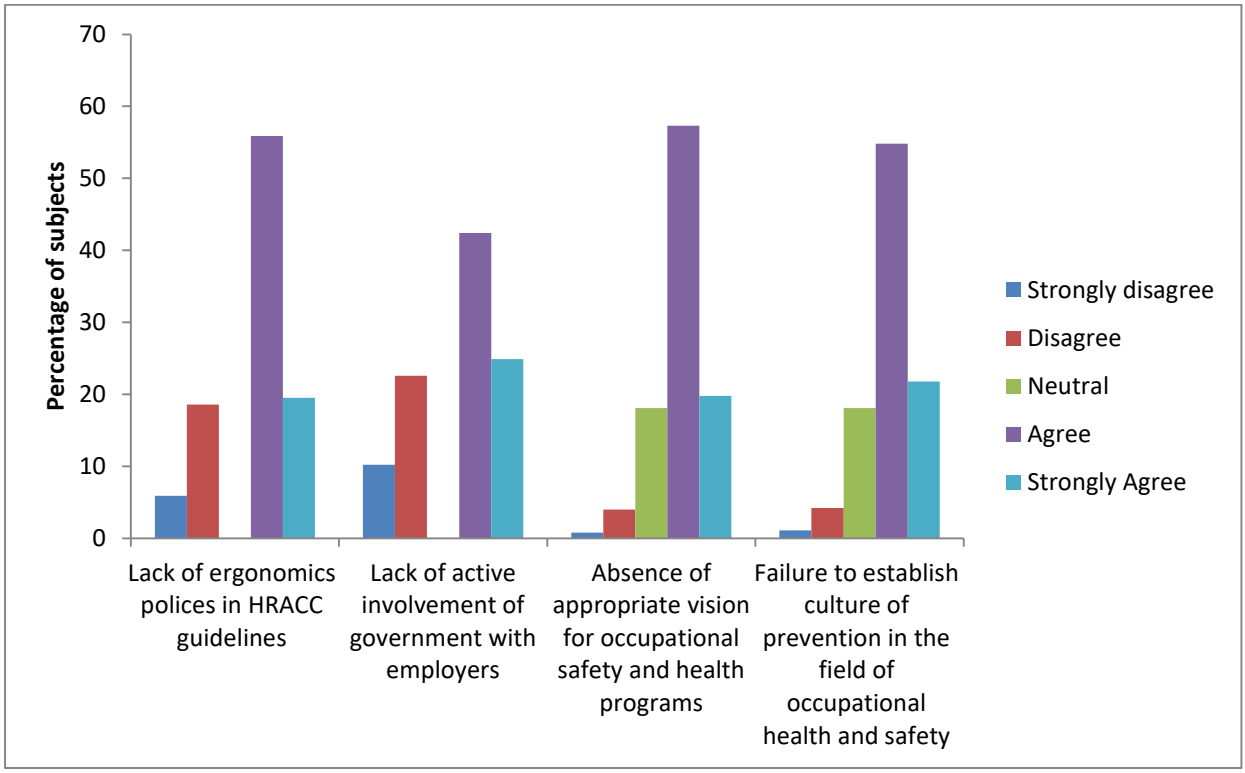
Graph 2.1: Assessment of management/ leadership barriers in the execution of ergonomic practices in five-star hotels of NCR



Graph 2.2: Assessment of Employees' barriers in five-star hotels of NCR


Percentage of subjects
80
70
60
50
40
30
20
10
0
I fear of losing my job if I report any injury /health issues
Hotel has no system/channel to report any injury /health issues
I do not have enough knowledge of ergonomics practices
I am not comfortable to adopt new standard operating procedure
Strongly disagree
Disagree
Neutral
Agree
Strongly Agree

Graph 2.3: Assessment barriers related to the Absence of ergonomics policies of the regulatory body (HRACC) in the execution of ergonomic practices in five-star hotels of NCR



CHAPTER 5: DISCUSSION & CONCLUSION

5.1 INTRODUCTION

The study's findings were discussed in the previous chapter. In Chapter 2, a literature analysis was exhibited to achieve the purpose of the study. Based on this, a suitable conceptual framework was constructed in Chapter 3 along with an approximated research approach to conduct further research. To accomplish the study's aims, an acceptable research design was created with a hypothesis. Furthermore, data analysis was performed in Chapter 4 using the statistical approaches mentioned in Chapter 3. Discussions based on the outcomes of the analysis were conducted in Chapter 5 while taking previous studies into account. This chapter discusses the debate concerning the research aims and findings. This chapter also analyses the consequences, precincts, future scope of the study, and conclusion to summarise the study.

This chapter is divided into the following sections:

- Conclusions in Background with Objectives of the Study
- Managerial Implications
- Limitations & Future Scope of Study
- Assumptions
- Recommendations and Suggestions
- Summary

5.2. CONCLUSIONS IN CONTEXT WITH OBJECTIVES OF THE STUDY

The key objective of this study was to find existing ergonomics practices and their impact on employee retention and co-relation with employee efficiency. Ergonomics practices can predict the factors that determine housekeeping employees' health and safety in the hotel industry in the NCR region. To develop this, a structured planned review of the literature was conducted. In the past studies, there were limited research studies that explored the association between housekeeping ergonomics practices with employee retention and efficiency in the hotel industry. The researcher had not found any study done on the hotel industry typically on NCR hotels. In most of the international studies, front dealing departments were considerably discussed more as compared to the back support departments. The responses were collected from different respondents working in the housekeeping

department in five-star hotels. Data was collected all through the year in different months from different hotels. It took more than six months to collect the data completely from all these hotels. After the collection of the data, the analysis was undertaken to incorporate various statistical techniques and tools which were discussed in chapter 4 of the study. The results came across presented various managerial implications. The conclusion of the research can be discussed in context with the research

Objectives of the study:

5.2.1. The Study of Identifying Existing Ergonomics Practices in Hotels

A detailed study on previous research was undertaken. Based on this, various factors were considered which were shown as ergonomics practices. From the previous studies, the constructs and variables which were widely been discussed were shortlisted. The conceptual model was being developed to estimate the reliability and validity of these variables. **construct validity, internal consistency, and content validity were measured.** After satisfaction with the reliability of the model, the associated factors that affect housekeeping ergonomics practices were assessed as follows:

- Workplace Conditions
- Risk Assessment & Control
- Employee Health & Safety
- Pandemic Response Plan

Workplace Conditions – Workplace conditions, working time arrangements, a variety of work schedules, working hours, and overtime can all be detrimental to workers' health. Changes in work schedules are connected to variations in well-being. **(De Raeve et al., 2007).** Because it focuses primarily on physical features of employment, such as force, repetition rate, and posture, ergonomics is commonly misconstrued**(Brian Pearce, 2003).** Psychosocial issues are frequently overlooked and misinterpreted. Superficial modifications in management, societal climate, organizational dedication, and job stress all have an impact on employees' health. Addressing these apprehensions at work will enhance employees' well-

being and have a long-term impact on company results**(Lohela et al., 2009).** , the presence of ergonomic practices promotes a good perspective of one's fit in the environment Ergonomics has been a more essential health and economic practice in the workplace in recent years.

Sr.No	Items	Mean	Std. Deviation	Scale
1	WC1	3.26	1.134	Often
2	WC2	3.64	1.42	Very often
3	WC3	2.45	1.463	Never
4	WC4	4.23	0.916	Always
5	WC5	3.97	0.934	Very often
6	WC6	3.03	1.236	Often
7	WC7	3.82	1.138	Very often
8	RAC1	3.27	1.513	Often
9	RAC2	4.16	0.891	Always
10	RAC4	3.08	1.493	Often
11	RAC4	3.97	1.056	Very often
12	RAC5	3	1.43	Often
13	RAC6	3.31	1.059	Often
14	RAC7	3.15	1.192	Often
15	EHS1	3.46	1.04	Often
16	EHS2	3.46	1.046	Often
17	EHS3	3.71	0.853	Very often
18	EHS4	3.5	1.022	Often
19	PRP1	3.49	1.027	Often

20	PRP2	3.94	0.95	Very often
21	PRP3	3.75	1.032	Very often
22	PRP4	3.71	0.963	Very often
23	PRP5	3.67	1.005	Very often
24	PRP6	3.83	0.934	Very often

Table no.5.1 –Mean Values of Variables used in the study

From table no. I find the work environment encouraging mean value is 3.26 and more than 57.6% (N=202) have supported the statement and content with current working conditions, Employees are encouraged to report concerns about working conditions mean value is 3.64 (N=267) and they are being motivated by reporting authorities to testimony any concern, it is a good sign for any organization. Uniform is designed with employee safety in mind, the mean value is 2.45 (N=255) has shown dissatisfaction with the same variable. Hotel authorities have to focus on this concern as the uniform is not comfortable then how come a housekeeping associate can work efficiently? For All equipment is securely stacked and stored mean was 4.23 (N=317) so the majority of five-star hotel establishments are following these practices which in result save time and also ensure proper take care of equipment in an organization, Cleanliness of the working area is maintained at all times, the mean value is 3.97(N= 324) have supported the presence of cleanings in their organization, Wires are covered and drawn properly to avoid electric shocks mean value is 3.03 (N=152) have supported this point and it is very important from employee ‘s safety, Proper ventilation and lighting are available, the mean value is 3.82 (N=285) that suggests employees are happy with ventilation and lighting because of without proper ventilation in laundry and linen work in the room is quite difficult and harmful for health.

Risk Assessment & Control - To remove dangers and align task demands with worker capabilities, ergonomic principles are then included in the design of tasks and workspaces. The hazards assessment and verification aspect of the risk assessment process is described in the ergonomics process **(Brophy, M., & Grant, C. 1996).** As per **Lin et al.2021**, Hotel

housekeepers are a huge, low-wage, mostly minority workforce with high-risk jobs. Their exposure and the nature of their work are largely unknown. A high frequency of difficult postures and working settings among room attendants engaging in cleaning activities contributes to ergonomic risk factors. In comparison, other industries, such as construction, have indicated that the forearm, elbow, and spine regions of the worker were statically important in hurting the worker and causing pain. "Ergonomic training programs should be available to advise room attendants on safe work procedures, including bed-making, bathroom, and guest room cleaning techniques, and the handling of linen carts, to reduce physical hazards, which are important ergonomics risks factors**" (Rahman et al. 2017).** Hotel maids make beds, change linen and towels, dust and polish furniture, clean floors, wax, polish, vacuum, toilets, bathrooms, window and wall cleaning, and trash cans Responsible for emptying. **(Labor Statistics Bureau, 2013).**

A total of seven variables have been used to identify risk assessment and control practices in five-star hotels in the NCR region. For Chemicals that are tagged and stored properly, the mean value is 3.47 which suggests that employees find chemicals are tagged and stored properly in their organization. The proper training is given to the employees regarding the safe use of cleaning agents, the mean value is 4.16 that advocates all employees are trained in the safe use of cleaning agents. Proper training is given to the employees about the safe use of cleaning equipment, for this variable mean value is 3.08 which suggests that all housekeeping employees are receiving training for safe use of cleaning equipment. Supervisors are responsible for identifying unsafe working conditions, for this variable mean value is 3.97 and it advocates that supervisors are being motivated to provide a risk-free environment to all employees which ultimately leads to employee efficiency **(According to the Bureau of Labor Statistics,2013For all cleaning products,** a Material Safety Data Sheet (MSDS) is provided; the mean value is 03, indicating that this practice has been followed in an organization. The organization has a system of reporting injuries or matters of safety concern, the mean value is 3.31 which indicates organizations have a smooth system to address safety and occupational issue. It is a very good sign for any organization. For example, Now as researchers have data because of reporting of injuries and safety concerns have been recorded in their respective organizations whereas our India is concerned, As a researcher, there is a complete dearth available regarding these health and safety data of hotel housekeepers. Employees maintain perfect posture while doing the operation, the mean value is 3.15 which supports that all employees maintain perfect posture while doing any operational work, it also

suggests that they are fully aware of the consequences if they do not follow and maintain the right posture while doing work. Housekeepers can avoid many health and safety concerns by following the right method of posture while doing any operational work**(Ambardar, A. 2015; Hsieh et al. 2016)**

Employee Health & Safety –Regardless of being a driving factor for industrial expansion, hotel housekeepers have a larger share of work-related health stress and impoverished health outcomes than the rest of the low-wage populace (**Buchanan et al., 2010)**, According to a study **by Buchanan et al. (2010)** Regarding occupational safety, hotel workers were most likely to report injuries (7.9), acute trauma (3.9 / 100), and occupational musculoskeletal disorders (WMSD) (3.2 / 100). Health Care (OSHA) records incidents between unionized hotels. It has been observed among hotel workers that the incidence of fatigue and hypertension is high and that hypertension management is inadequate **(Sanon, 2013).** Housekeepers are exposed to a disproportionately high number of work-related risks, which can have negative health repercussions.

A total of four variables have been analyzed to identify employee health and safety practices in five-star hotels, these are some results i.e I understand that the nature of the job is prone to occupational hazards, for this mean value was 3.46 which suggests that most of the employees have developed understanding nature of the job and occupational hazards as a housekeeper in a hotel, I am suffering from occupational diseases i.e. asthma, joint pain, skin allergy, etc., for this variable, the mean value is 3.46 which showing an alarming state for hotel organization as most of the employees are facing occupational diseases, management has to take some measure to curb these challenges of employees. For An adequate workload given to the employees variable, the mean value is 3.71 which suggests all employees are comfortable with the workload. For this variable, I understand the importance of ergonomic practices' mean value is 3.5 which advocates for most employees to recognize ergonomics practices and their importance of same.

Pandemic Response Plan - Housekeeping managers need to develop an inclusive strategy to address the COVID 19 pandemic. It should comprise the subsequent features management team should set aside enough resources to ensure that the action plan is carried out

consistently and effectively. The action plan should also include the supply of tackle and steps to address suspicious cases and prospective contacts, in coordination with health authorities. COVID 19 needs to be properly trained and updated regularly to allow receptionists to advise guests on precautions, protocols, regulations, and other necessary services and pharmacy services **(World Health Organization,2020).**

As per the **world travels and tourism council(2020)'** When the pandemic became apparent (i.e., a rapid increase in the number of cases), a large number of cases in the local population, and cancellations of reservations, hotels implemented cost-cutting measures, such as reducing hotel staff working hours while increasing unpaid time as a pandemic response plan". **(Wang and Ritchie, 2011). Leung and Lam(2004),** note that outsourced staff services are increased. According to **Kim and Kreps, (2020),** the consumers' inclination toward slow tourism and health-oriented tourism may be increased because of the pandemic.

To identify pandemic response plan practices, six variables have been identified i.e My organization has drafted policies to counter pandemic issues i.e. flexible leave policies and it has a mean value of 3.46 which suggests that the organization has formed strategies to counter pandemic-like situations i.e covid 19. The organization has arranged training sessions on infection control and its mean value is 3.94 which advocates almost of employees have gone through training to counter the pandemic. Personal protective equipment has been provided to employees, its mean value is 3.75 which suggests most hotels have provided personal protective equipment to most employees and it is critical for all stakeholders of the organization. The organization has created awareness regarding vaccination of Covid 19, this variable has a mean value of 3.71 which suggests most hotel organizations have administrated the covid 19 vaccine to their employees. Temperature assessment is being done on an hourly basis, it has a mean value of 3.67 which advocates this mentioned practice followed in most five-star hotels. Hand washing is mandatory on an hourly basis, it has a mean value of 3.83 which shows that this mentioned practice has been followed in most five-star hotels.

Conclusion in Context with Relationship between Housekeeping Ergonomics Practices and employee efficiency.

The association between staff efficiency and all of the elements of housekeeping ergonomics practices was investigated and assessed. Workplace Conditions, Risk Assessment and Control(R.A.C), Employee Health & Safety, and Pandemic Response Plan were determined to be significant constructs of ergonomics practices for employee efficiency. Workplace engagement, Job enrichment, and Employee well-being were employed by the researcher for the employee efficiency construct. Possible implications that may be implemented into the current work process of housekeeping operations were examined. The correlation coefficients (r) of correlation of Workplace engagement with Workplace conditions, RAC, Employee Health and Safety, and pandemic response plan were found to be 0.429, 0.523, 0.454, and 0.600 respectively. The correlation coefficients (r) of the correlation of Job Enrichment with Workplace conditions, RAC, Employee Health and Safety, and pandemic response plan were found to be 0.539, 0.620, 0.442, and 0.533 respectively. The correlation coefficients (r) of the correlation of Employee Well Being with Workplace conditions, R.A.C, Employee Health and Safety, and pandemic response plan were found to be 0.644, 0.572, 0.571, and 0.644 respectively. The correlation coefficients (r) of correlation of Employee Efficiency with Workplace conditions, RAC, Employee Health and Safety, and pandemic response plan were found to be 0.632, 0.642, 0.567, and 0.675 respectively. The suggestions about the results were also discussed. Same findings have been identified by **Haynes, 2008**, intended to evaluate how office comfort affects occupant productivity. According to the findings, there is a link between working conditions, physical comfort, and employees' productivity. According to the author's review of the literature, there is sufficient sign to support the claim that workplace comfort boosts efficiency. **Sanders, 1993** also said Employees and organizations can gain directly from the use of ergonomics principles in the workplace by easing physical and psychological loads, reducing the risk of acquiring work-related diseases and accidents, and increasing job productivity. **Patterson, Warr, and West, (2004),** mentioned that "workplace elements such as the substance of work, the distribution of working time, working conditions (workplace adaptability, safety, and the removal of disruptive forces, career possibilities, among others, all have an impact on employee efficiency".

Conclusion in Context with Impact of Ergonomics Practices on Employee Retention

Housekeeping ergonomics, procedures, and their impact on employee retention in hotels were reviewed in the current work procedure. In this study, Employee retention can be predicted significantly by Workplace conditions, Risk assessment, control, and Pandemic Response

plan. With one unit increase in Workplace conditions, Employee retention increases by 0.145. With one unit increase in Risk assessment and control, Employee retention increases by 0.266. With a one-unit increase in Pandemic Response Plan, Employee retention increases by 0.514. job satisfaction and performance can be improved, as well as absenteeism and employee turnover rates, if their QWL is improved **(Sirgy et al., 2001; Wan, Chan, 2013),** and to recruit and retain employees, the hotel business must provide for this **(Kandasamy, Ancheri, 2009**). According to research, it is vital to investigate what factors contribute to QWL for personnel to improve job satisfaction and reduce turnover. International Labour Organization,2015 describes "working conditions cover a comprehensive variety of topics and issues, from occupied time (hours of work, rest periods, and work schedules) to compensation, as well as the physical circumstances and rational anxieties that exist in the work". **Krause, Scherzer, Rugulies, (2005), Premji and Krause, (2010), Frumin, (2006) and Liladrie, (2010) Davis and Haney, (2000), Krause et al. (1997), Krause, Dasinger, Neuhauser (1998), Krause et al. (1999), Parker and Krause, (1999) Cartwright, Cooper, Murphy (1995), Newton, Becker, Bell, (2014)** advocate the positive relationship between workplace conditions and employee retention.

Conclusion in Context with Identifying Barriers in Implementing Housekeeping Ergonomics Practices in Five Star Hotel In NCR Region.

A majority (55.9%) of participants' mean value of 4.05, strongly agreed on the lack of information on work-related injuries and illnesses. Also, the majority (mean value of 3.91)of them strongly agreed (50.3%) and agreed (16.4%) with the fact that there is a shortage of skilled manpower in the organization. Around 38% of participants strongly agreed that Employees do not like to report their injury/discomfort with a mean value of 3.49. Maximum subjects with a mean value of 2.95 gave neutral responses when asked whether organizations consider safety and health issues as a cost rather than an investment (41%), employees (Mean value of 2.88) tend to be overconfident with their previous working practices, and underrate the risk (29.9%) with a mean value of 3.37 and lack of employee motivation in an organization (29.9%) with a mean value of 3.80. Lack of time is a barrier to the implementation of health and safety practices was agreed and strongly agreed by 38.7% with a mean value of 3.53 and 26.3% of study participants respectively with a mean value of 3.13. Maximum participants (35%) agreed on fear of losing their job if they report any injury

/health issues (mean value is 3.57). A neutral response (32.8%) was obtained on no availability of a system/channel to report any injury /health issues with a mean value of 3.89. Around 39% agreed on not having enough knowledge of ergonomics practices with a mean value of 3.64 and 67.8% of participants agreed on not being comfortable to adopt the new standard operating procedure with a mean value of 3.49. The majority (mean value of 3.1)of them agreed on the Lack of ergonomics policies in HRACC guidelines (55.9%), With a mean value of 3.92, the survey found a lack of active government involvement with employers (42.4 percent), a lack of appropriate vision for occupational safety and health programs (57.3 percent), and a failure to establish a prevention culture in the field of occupational health and safety (54.8 percent).

Sr.No	**Items**	**Mean**	**Std. Deviation**	**Scale**
1	BIEP1	4.05	1.279	Often
2	BIEP2	3.91	1.329	Very often
3	BIEP3	3.49	1.470	Never
4	BIEP4	2.95	1.127	Always
5	BIEP5	2.88	1.226	Very often
6	BIEP6	3.37	1.154	Often
7	BIEP7	3.80	.975	Very often
8	BIEP8	3.53	1.027	Often
9	BIEP9	3.13	1.174	Always
10	BIEP10	3.57	.901	Often

11	BIEP11	3.89	.927	Very often
12	BIEP12	3.64	1.163	Often
13	BIEP14	3.49	1.347	Often
14	BIEP14	3.91	.779	Often
15	BIEP15	3.92	.815	Often

Table no.5.2 –Mean Values of Variables used in the study

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Table 5.3 Position of the Hypothesis

Sr.No	Objectives	Hypothesis	Position
1	To identify the existing ergonomics practices in five-star hotels of NCR	Ho1 There are no existing ergonomics practices in five-star hotels Ha1 There are existing ergonomics practices in five-star hotels	H01 Not Accepted Ha1 Accepted
2	To examine the relationship between ergonomics practices and employee	Ho2 There is no relationship between	H01 Not

	efficiency in five-star hotels	ergonomics practices and employee efficiency in five-star hotels Ha 2 There is a relationship between ergonomics practices and employee efficiency in five-star hotels	Accepted Ha1 Accepted
3	To study the impact of ergonomics practices towards staff retention in the hotel industry.	Ho 3 There is no impact of ergonomics practices towards staff retention in the hotel industry Ha 3 There is an impact of ergonomics practices towards staff retention in the hotel industry	H01 Not Accepted Ha1 Accepted
4	To identify barriers to the execution of ergonomics practices in five-star hotels	Ho 4 There are no barriers to implementing ergonomics practices Ha 4 There are barriers to implementing ergonomics practices	H01 Not Accepted Ha1 Accepted

CHAPTER 6 IMPLICATION ,LIMITATIONS & RECOMMENDATIONS

MANAGERIAL IMPLICATIONS

This section provides both theoretical and managerial suggestions that are derived from the results of this study. This research study was performed in the hotel industry of the National Capital Region and explored housekeeping ergonomics practices and their significance toward employee retention and employee efficiency. The barriers to implementing ergonomics practices were also evaluated. The study revealed the various managerial implications. These findings & implications were:

Ergonomics Practices have a major role in employee retention, employee efficiency, and satisfaction. The hazards and injury-free environment signifies the standard of the hotel and ensures to the guest that the best housekeeping services are being followed by the hotel housekeeping staff. Good star hotel follows the standard protocol for ergonomics practices as it exhibits its high standards and risk assessment and control factor. Ergonomics practices have shown to be incremental towards employee efficiency and retention as well. Hotel managers must imply practices to create hazards and comfortable surroundings in the hotel for its internal stakeholders. The major objective of the study was to investigate the impact of ergonomics practices on employee retention and employee efficiency. In doing so a causal model was proposed based on the existing literature and was analyzed for assumed relationships. In this process, three key constructs were also examined, namely working conditions, risk assessment and control, and pandemic response plan. Consistent with the existing studies (**Milman, 2002; Woods & Macaulay, 1989),** working conditions (**DiPietro & Condly, 2007; Milman, 2002)** have the greatest impact on turnover. It also stresses a secure and safe working atmosphere, and the training of employees is a significant factor in the workplace. Risk assessment & control is directly linked with employee retention as it creates a positive atmosphere and motivates an employee, **Hsieh Apostolopoulos, Sonmez,2013, HSE, (2012) Stensholt, B. (2007); Knox (2011), Bureau of Labour Statistics, (2013); Krause & Lee, (2014**) also advocated a positive relationship between risk

assessment and control towards employee retention, In this study context, the Pandemic response plan has an insignificant impact on employee retention as per the structural model. It is a very interesting finding from the study. It has contradictions from many existing studies i.e. **Bhaumik, S.et.al, 2020**. Finding from this construct indicates that housekeeping employees are not abundantly certain about new opportunities in the hospitality market which is severely affected by this pandemic so as of now they want to continue with their current employer. In the context of employee efficiency, The results are to some of the past studies such as **Vischer, J.C. (2007),** who concluded that employees that are satisfied with their working conditions and surroundings are found to be more productive. Currently, this finding indicates that housekeeping employees maybe not be concerned about working conditions due to job insecurity in the hospitality industry. Risk assessment and control have a significant relationship with employee efficiency as per this study, **Deeney &O'Sullivan, 2009, Schleifer, Ley, Spalding, 2002** indicated a positive relationship between risk assessment and employee efficiency. These results also stress the importance of risk assessment and control of hotel housekeeping in hotels, i.e. material safety data sheet, awareness regarding occupational hazards and diseases in the hotel among housekeepers. In the context of employee efficiency, the pandemic response plan has shown significant path coefficients toward employee efficiency which is also backed by many researchers **(Kaushal and Srivastava, 2021, Parker, L. D. 2020).** The findings also establish that standard operating procedure developed during this pandemic has a big impact on employee output. Within this construct, i.e. personal protective equipment and vaccination awareness have been a great boost for employees.

. LIMITATION AND FUTURE SCOPE OF RESEARCH

This primary study was the original effort to identify the existing ergonomics practices of NCR five-star hotels and to evaluate the relationship with variables of employee efficiency and its impact on employee retention. Many limitations created a hindrance in reaching out objectives of the study. These findings bring vital implications that are relevant for future research as well

- **Management reluctance**

It was a big problem to get permission from different reputed star hotels for allowing an external agent to take responses from the resident guests. A hotel lobby is not a public area where unauthorized personnel is allowed to roam around. The hotel is guarded day and night by a team of security personnel. The feedback of the resident guests of the hotel was also confidential information. Researchers had to collect data from different hotels around NCR. The management of around some hotels permitted surveying their internal employees but five hotels denied the data collection requests from their hotels. The general managers of these hotels were approached & requested allow the researchers for permission to collect responses from the resident guests of the hotel. As the sample size was also very large, a lot of time was duly occupied in the process of data collection itself. Therefore a limitation was faced by the management of different hotels for the collection of data.

- **Respondent's reluctances**

The data was collected using a survey methodology. The researcher had to approach hotel personnel while conducting the survey. Because of the pandemic, most of the information was gathered via social networking sites like Linkedin, Facebook, and Twitter. Employees expressed a great deal of reluctance because they were largely preoccupied with their jobs, and the hospitality business was failing all around the world as a result of Covid 19. Most of the employees were found not willing to give their opinion on the ergonomics practices followed in the hotel. Taking responses from the hotel's employees was a big challenge in itself. During this survey process, I have used my contacts and social media contacts to get feedback on the survey.

- **Sample size**

The sample size was derived keeping in view the tourist arrival statistics of the region. Based on this the sample size was considered. The data had to be collected from different hotels across NCR and adjoining regions. Taking responses from 385 employees was a big

challenge; a lot of limitations came across taking a big sample size for the survey and analysis. As discussed in the research gap, the studies about the housekeeping department are quite less. In the present study, various factors linked with the housekeeping department were discussed. These factors were analyzed upon their relationship with efficiency and retention of the employees and performance of the hotel.

Wide Aspect of Ergonomics – Ergonomics is a very broad area for research and it has many branches i.e man-machine technology, man–environment technology, user–system interface technology, organization–machine interface technology, etc. In this study, researchers have attempted to utilize only four constructs of ergonomics which included in this study: working conditions, pandemic response plan, employee health and safety, risk assessment, and control; however, future research studies should incorporate more housekeeping ergonomics practices dimensions.

Covid 19 and its impact on Hospitality Industry – Covid 19 has created challenging environments to collect data from employees as most of the hotels were struggling to run due to pandemics and lockdown.

ASSUMPTIONS

This study includes many assumptions. **Simon (2013)** defined assumptions as factors that influence the study, but the researcher cannot prove these factors after the completion of the study. The first assumption was made that responses collected from the respondents represented the actual image of the housekeeping ergonomics practices of the hotel. Participants were assumed to meet the criteria of the study. Secondly, it was assumed that the measurement scale was reliable and the research hypothesis would frame as per the need of the study to meet the objective of the study. It was assumed that the data analysis method adopted for this study would provide reliable and easy-to-understand results. It was assumed that the respondents represented the whole hotel industry of NCR and the responses might

prove real across different parts of north India as well. These assumptions were essential as the researcher could not justify the issues that arise based on participants' responses.

5.6. **RECOMMENDATIONS AND SUGGESTIONS**

This present research explores the current status of hotel housekeeping employees' retention and efficiency, particularly during covid 19 in India, then discusses the implications of ergonomics practices on retention and efficiency. Ergonomics practice's research in hotel housekeeping has been attainment enlarged scholarly attention, yet similar researches in the Indian background are almost non-existent. The current research was initiated in the year 2018 to propagate and spread awareness about the significance of housekeeping ergonomics operations. Housekeeping operations were considered to be backend jobs but in the present scenario, In the year 2020, the whole world is giving utmost significance to employees' health and safety and hygiene in every business/work which is being carried out. In the pandemic situation of corona crises around the world, the importance of a risk-free environment and employee health and safety can never be undermined. The present scenario has made people believe that housekeeping operations are the utmost requirement while staying away from home. The hospitality industry has been hit badly and got a huge blow due to the corona pandemic. The only way by which hospitality establishments can sustain their business is through exercising intensive care for employees' health and safety and ergonomics practices in every operation. As the world is unlocking itself, many countries have opened public places, hotels, and restaurants. It has become the moral responsibility to stop the spread of the virus and protect lives. Some of the recommended changes in operational procedures for hotels are discussed below:

For HRACC- The Hotel and Restaurant Approval and Classification Committee (HRACC) inspects and rates hotels based on their amenities and services. As per this study, it has been found that most of the points of the checklist (used for hotel classification) are dedicated to amenities and services provided to the external guest. I would like to urge add more points toward employee health and safety to the current checklist, as of now under the heading of staff welfare only four points have been mentioned.

STAFF WELFARE FACILITIES -

Staff Rest Rooms

Staff locker Rooms

Toilet facilities

Separate Dining area & Facility

Hence as this study's recommendations to all concerned stakeholders i.e Ministry of Tourism, Hotel Companies, Employees, guests, etc., I would like to suggest adding the following points from my study to the current HRACC checklist of employee health and safety in the workplace so that hotel's classification can be done from both perspectives i.e guest as well as employees.

<table>
<tr><td>Ergonomic Practices</td><td colspan="5">Category of Hotel</td></tr>
<tr><td>Workplace conditions</td><td>1*</td><td>2*</td><td>3*</td><td>4*</td><td>5*</td></tr>
<tr><td>Employees find the work environment encouraging.</td><td colspan="5" rowspan="12">"All parameters need to follow in all-star hotels i.e 1 star to 5-star hotel"</td></tr>
<tr><td>Employees are encouraged to report concerns about working conditions</td></tr>
<tr><td>The Uniform is designed with employee safety in mind</td></tr>
<tr><td>All equipment is securely stacked and stored</td></tr>
<tr><td>Proper ventilation and lighting are available.</td></tr>
<tr><td>Risk assessment and control</td></tr>
<tr><td>Chemicals are tagged and stored properly</td></tr>
<tr><td>Employees get training to use chemicals</td></tr>
<tr><td>Proper training is given to the employees about the safe use of cleaning equipment</td></tr>
<tr><td>Supervisors are responsible for identifying unsafe working</td></tr>
</table>

conditions	
MSDS is available for all cleaning agents	
The organization has a system of reporting injuries or matters of safety concern	
Employees maintain perfect posture while doing the operation.	
Employee Health and Safety	
Employees understand that the nature of the job is prone to occupational hazards	
Employees are not suffering from occupational diseases i.e. asthma, joint pain, skin allergy, etc.	
An adequate workload is given to employees	
Employees understand the importance of ergonomic practices	
Pandemic Response Plan	
The organization has drafted policies to counter pandemic issues i.e. flexible leave policies	
The organization has arranged training sessions on infection control	
Personal protective equipment has been provided to employees	
The organization has created awareness regarding vaccination of Covid 19	
Temperature assessment is being done on an hourly basis	
Hand washing is mandatory on an	

hourly basis	

Table 6.1- Checklist (Proposed**)**

Link for a current H.R.A.C.C checklist - https://tinyurl.com/3r5wtdxh

For Organizational Management: As per this study and its results show that most of the ergonomics practices are being carried out in the hotel but some of the improvement areas are being highlighted i.e, most of the respondents were not satisfied with "The Uniform is designed with employee safety in mind", management of companies has to work on this area, they should provide appropriate uniform to their employees. The organization has to ensure proper training is given to all housekeeping employees and they must be well aware of handling cleaning equipment and cleaning agents. Material Safety Data Sheet (MSDS) is available for all cleaning agents, The organization has to follow a system of reporting injuries or matters of safety concern so that they can track and identify the "Danger Zone", Most of the employees have mentioned that they are suffering from occupational diseases i.e. asthma, joint pain, skin allergy, etc.

In this above-mentioned case, managers should be held responsible for measuring ergonomics practices in the organization, Managers need to start a formal mentoring program with the staff working at the hotel At the department level in addition to human resources. This practice makes it easier to Understand the baseline level of reduced quality of life for working employees At various levels of the hotel industry.

For Employees: Every employee has the right to work in an environment that is free of threats to their health and safety. In terms of occupational health and safety, the employer bears a substantial share of the blame. Employees must protect both their health and the health and safety of those who may be damaged as a result of their conduct at work. To guarantee that everyone achieves the criteria, employees must collaborate with their superiors and coworkers.

SUMMARY

After discussing the results based on the data analysis, the next step was to discuss the possible administrative implications behind the results. The vital implications required to be incorporated into the hotel industry were discussed with possible suggestions. The objectives of the research study were concluded and discussed along with the appropriate results derived from the analysis. The possible limitation of the study that came across while pursuing the research was also discussed. Finally, the conclusion of the study was elaborated at the end of the chapter. The findings had shown various new suggestions and possible courses for future studies

An overview of the thesis gives us the following points to summarize the whole chapter:

a. India is becoming a most lucrative travel destination. Thus the growth of the hospitality sector is rising every day.

b. National Capital Region has a total population of more than 16.6 million and the growth of the tourism and hotel industry is quite prevalent to the statistics.

c. A hotel is a large establishment that consists of several departments. Hotel housekeeping is an important department in a hotel. There is research on the housekeeping department, and those that do exist are primarily limited to housekeeper retention, satisfaction, and ergonomics procedures.

d. Various multinational hotel chains had developed their hotel businesses in India. Similarly, Indian hotel chains are also expanding tremendously. There is an ultimate need for the budget hotels which has a good potential shortly as well as all brands need to take care of their internal guest/customer.

e. Research in the field of hospitality is very limited in India, especially in the department of housekeeping. Hence this research should be carried out in other cities also i.e Tier B and Tier C cities which can bring more insights into the same.

f. The main source of income for a hotel is room sales, but the role of housekeeping cannot be overlooked. This part of the hotel sector, which is undervalued for a variety of reasons, including not at the hotel reception, needs investigation and investigation. Housekeeping is not a revenue-generating department, but it looks at the impact on overall customer satisfaction and business performance.

g. Hotel management must ensure the safety and health of hotel housekeepers, as well as front-line housekeepers, during the epidemic. Managers must be aware of their employees' work-life balance; else, they will be unable to compete in the long run.

h. Most hotel companies should adopt behavior like “Health and safety, “Ergonomics Practices” as a matter of investment rather than an expense.

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Questionnaire

Dear Sir/Mam

It would be of immense help to me if you find some time from your busy schedule to fill this questionnaire for me. This is for my Ph.D. thesis. I assure you that the data collected is only for academic research and all the data shared by you will be kept confidential. Please help me in fulfilling my Ph.D. dream.

Topic =Ergonomics Practices of Hotel Housekeeping Employees –A Study of five-star Hotels

Kindly give your unbiased opinion on a five Likert scale wherein 01=Strongly Disagree,02=Disagree,03=Neutral,04=Agree,05=Strongly agree

Item Code	Statements	Strongly Agree	Agree	Neutral	Disagree	Disagree Strongly
WC1	I find the work environment encouraging.					
WC2	Employees are encouraged to report concerns about working conditions					
WC3	The Uniform is designed with employee safety in mind					
WC4	All equipment is securely stacked and stored					
WC5	Cleanliness of working area is maintained at all time					
WC6	Wires are covered and drawn properly to avoid electric shocks.					
WC7	Proper ventilation and lighting are available.					
RAC1	Chemicals are tagged and stored properly					
RAC2	Proper training is given to the employees regarding the safe use of cleaning agents					

RAC3	Proper training is given to the employees about the safe use of cleaning equipment					
RAC4	Supervisors are responsible for identifying unsafe working conditions					
RAC5	Material Safety Data Sheet is available for all cleaning agents					
RAC6	The organization has a system of reporting injuries or matters of safety concern					
RAC7	Employees maintain perfect posture while doing the operation.					
EHS1	I understand that the nature of the job is prone to occupational hazards					
EHS2	I am suffering from occupational diseases i.e. asthma, joint pain, skin allergy, etc.					
EHS3	An adequate workload is given to employees					
EHS4	I understand the importance of ergonomic practices					
PRP1	My organization has drafted policies to counter					

	pandemic issues i.e. flexible leave policies					
PRP2	The organization has arranged training sessions on infection control					
PRP3	Personal protective equipment has been provided to employees					
PRP4	The organization has created awareness regarding vaccination of Covid 19					
PRP5	Temperature assessment is being done on an hourly basis					
PRP6	Hand washing is mandatory on an hourly basis					
EE1	I can finish daily tasks within the given deadline.					
EE2	I motivate others to perform well.					
EE3	I feel very comfortable discussing challenges with my supervisor					
EE4	I find flexibility in work					
EE5	I am often encouraged to implement innovative ideas					

EE6	I get support from seniors					
EE7	I enjoy my work.					
EE8	I can spend quality time with my family members					
EE9	Work-health balance is present in a job					
ER1	I find the work schedule quite flexible					
ER2	I have flexibility at work to deal with family matters					
ER3	The hotel‘s employee appraisal system is very good.					
ER4	I find support from co-workers					
ER5	My supervisor supports me at the workplace					
ER6	I would continue in this organization for a long tenure					
ER7	My supervisors take appropriate action after reporting injury/hazards					
ER8	My supervisor leads by setting an example for all employees					
BIEP1	Lack of information on					

	work-related injuries and illnesses					
BIEP2	Shortage of skilled manpower in the organization					
BIEP3	Employees do not like to report their injury/discomfort					
BIEP4	Safety and health issues are viewed as an expense rather than an investment by businesses.					
BIEP5	Employees have a tendency to overestimate the danger based on their previous work experiences..					
BIEP6	In the workplace, there is a lack of employee motivation.					
BIEP7	Implementing health and safety procedures is hampered by a lack of time.					
BIEP8	I fear losing my job if I report any injury /health issues					
BIEP9	The hotel has no system/channel to report any injury /health issues					

BIEP10	I do not have enough knowledge of ergonomics practices					
BIEP11	I am not comfortable adopting a new standard operating procedure					
BIEP12	There is lack of ergonomics policies in HRACC guidelines					
BIEP13	Government's lack of active interaction with employers					
BIEP14	Occupational safety and health programmes do not have a clear vision.					
BIEP15	Failure to establish a culture of prevention in the field of occupational health and safety					

Publication Details

1- Paper title **“Impact of ergonomics practices on hotel housekeeping employee's retention and employee efficiency during covid 19 in India”** accepted in "Tourism" journal for June 2022. (Scopus Indexed)

2- Paper title” **Housekeepers amongst COVID-19 Pandemic: Perspectives on Challenges and Learnings of Hotel Industry**” published in **“Shodhsamhita: Journal of Fundamental & Comparative Research ”,** ISSN 2277-7067, Special Issue 01, Volume II (U.G.C Care Listed)

List Of Conferences (Paper Presented)

1-Paper **title "Impact of ergonomics practices on hotel housekeeping employee's retention and employee efficiency during covid 19 in India**" presented in **"Tourism For Inclusive Growth: Promoting Equality and Sustainable Economic Development"** organized by **Amity Univesity, Uttar Pradesh** on 23rd September -24th September 2021"

2-Paper title "**Health and Safety within the Housekeeping Workplace: A Study of barriers in the implementation of Ergonomics Practices in star category hotels in India"** presented in **"International E- Conference –Gen Next Hospitality –"Fostering Research, Innovation & Entrepurenship "** organized by I.H.M Bhopal,07th -08th October 2021.

3- Paper title "**Mental Health Impact of COVID-19 on Hotel Housekeeping Employees in Tamil Nadu"** presented by **International Conference on "Sustainable Developmental Goals and Management Practices"** held on February 11-12, 2022, organized by School of Hotel Management and Tourism, **Lovely Professional University,** Punjab, India.

4- Presented a paper titled "**Housekeepers amongst COVID-19 Pandemic: Perspectives on Challenges and Learnings of Hotel Industry**" in the 3 day **National Research Conference held at Naipunnya School of Management**, Cherthala, Alappuzha, Kerala on 28th, 29th, and 30th December 2021