International Journal of Hospitality & Tourism Systems
Volume 10 Issue 2 December 2017
ISSN: 0947-6250 (Print)

Hospitality & Tourism Systems

Occupational Safety and Health of Hotel Housekeeping Employees: A Comparative Study

Ankush Ambardar*, Kunal Raheja**

Abstract *The hospitality industry is one of the world's largest industries, employing 200 million people and generating more than 10 percent of global GDP. But hospitality players have difficult challenges to meet such as employee retention, training, the high turnover rate of employees, and meeting high health and safety standards. The fast paced environment of hotel industry includes a range of tasks and jobs that pose different risks and can be rife with workplace health and safety hazards. With the high number of young employees employed throughout the industry ensuring each employee should be adequately trained to lead safe and healthy life. Occupational safety and health practices are significant area of concern in this rapidly growing hotel industry. Effective safety and health practices leads to positive employee performance and satisfaction. The aim of this study is to understand occupational health and safety practices in Housekeeping department of Indian hotel industry. Keeping in view the same the present research paper covers the issues related to employees facing in housekeeping department of hotels in India. The results inferred that level of execution of OS&H practices were poor in housekeeping department and study also found the difference in execution of OS&H practices among Indian hotels on the basis of star categorization.*

Keywords: *GRA Guest Relation Assistant, QWL Quality of Work Life, OSH Occupational Safety and Health*

INTRODUCTION

Hotel industry in India is one of the fastest growing sectors. According to sectoral report of IBEF, India Brand Equity Foundation (April 2017) Travel & tourism sector in the India is accounts for 9 per cent of total employment opportunities which were generated in 2016, providing the employment to approximately 38.4 million people. The projected rise of 2 per cent annum is expected providing 46.42 million jobs by 2026. The present and upcoming hotels involve and require a huge number of trained employees. Employee's attraction and further their retention is present concern of human resource manager. Overall human resource practices include QWL, promotion, training and development, performance appraisals, OSH, rewards, motivation, etc Elizabeth Boye Kuranchie-Mensah (2015). Negligence in any can increase attrition rate of employees and will have adverse effect on overall performance of the organization Chun-Chang Lee, Sheng-Hsiung Huang, Chen-Yi Zhao (2011). Due to the nature of task and long working hours the management has to manage various ranges of health and safety concerns that exist in the working area. For that Occupational Health and Safety practices & guidelines play vital role in providing healthy and safe environment for the employees. For any organization OHS is one of the crucial aspects for the employee retention and motivation Hutchings, Kate, Cieri, Helen, Shea, Tracey (2011). Hotel housekeeping provides healthy environment to the guests and keeps aesthetic upkeep of the hotel. Housekeeping employees are involved in various activities which involve various postures and deal with dangerous chemical & cleaning agents which require proper training and guideline (OSHA Guide to Restaurant Safety). Looking at the nature of task involved,

* Assistant Professor, Department of Tourism & Hotel Management, Kurukshetra University, Kurukshetra, Haryana, India. Email: ankushambadar@rediffmail.com
** Assistant Professor, Department of Tourism & Hotel Management, Kurukshetra University, Kurukshetra, Haryana, India.

occupational safety and health (OSH) becomes an important aspect and deals in providing healthy and safe atmosphere to the employees. It is the science of the anticipation, recognition; evaluation and control of hazards arising that exist at workplace which could be harmful for the health of workers (R. Muthuviknesh, K. Anil Kumar). This realm is necessarily vast encompassing numerous workplace and environmental hazards. OSH also helps in minimizing the negative impact of hazards on the surrounding communities and the general environment. OSH helps in maintaining the highest degree of physical, mental and social well-being of workers in all occupations by maintenance and prevention programme (WHO Regional Office for Europe). ILO and WHO have emphasized on the importance of OSH in many organizations. According to ILO and WHO, organizations need to focus on promotion and maintenance of health of workers from hazardous working conditions and providing them protection in from risks in their employment (Ms Alice Belin Mr Tony Zamparutti Ms Kerina Tull Mr Guillermo Hernandez Milieu Ltd, Brussels Dr Richard Graveling).

OSH is related to all actions surrounding the improvement and maintenance of health and safety and the prevention and reduction of potential health and safety hazards and risks in the workplace. These hazards and risks may arise from exposures in the job and work environment and vary from physical factors (e.g. noise, vibration and heat), chemical factors (e.g. poisons, toxics), hazardous substances (e.g. dusts, oil and coal) and workplace organization (e.g. repetition of work, supervision, training) to stress and violence (Nankervis et al., 2005).

For this, it is imperative that management and employees should be aware of Occupational safety & Hazard practices to minimize the various risks at work and prevent the causes of accidents and ill health at workplace. With this in background, this research work proceeds by presenting a brief historical review on various important OS&H practices in housekeeping department of hotel industry.

Literature Review

OSH Factors are diverse, examples are: stress management (Schabracq et al., 2003), restrictions and requirements for hazardous substances or dangerous goods, rehabilitation programs, noise control and general health promotion (Taylor et al., 2003). But for an effective OSH programme, it's very important to identify hazards at workplace and take steps to eliminate or minimize them. The work involves awkward postures, prolonged standing, manual handling and repetitive hand motions. These can give rise to sprains, and injuries involving the hands, shoulders back and neck (Ministry of manpower Singapore, 2003). According to (Susan Buchanan, 2010) Hotel employees have higher rates of occupational injury and sustain more severe injuries than most other service workers. Therefore it is essential to implement occupational safety and health practices in the housekeeping Department. The housekeeping employee duties are physically demanding (involving heavy lifting and repetitive pulling and reaching) and more recently increasingly stressful that may make them exposed to musculoskeletal injuries and to stress related injuries and conditions. A musculoskeletal injury can be any injury (whether acute or repetitive in nature) sustained to the muscular or skeletal anatomy. Stress related conditions are those brought upon by stress but can manifest themselves both physically and mentally/emotionally. Liladrie (2010) reported that hotel workers are 48% more likely than any other service injury employees to become injured while working. Furthermore, Faulkner and Patiar (1997) associated tiring activities with spine and joint injuries. Similarly, Liladrie (2010) reported that higher physical demands for GRAs have resulted in the majority of workers experiencing more pains and injuries. It is found that employees suffer shorter stature, prior history of neck pain, and being subjected to extreme environmental conditions on-the-job are all risk factors that result in higher instances of shoulder injuries Borstad, Buetow, Deppe, Kyllonen, Liekhus, Cieminski, & Ludewig, (2009). McHugh and Cosgrave (2010) reviewed literature regarding how pre-stretching reduces sports injuries and found that risk factors for muscle strain include increasing age, history of previous muscle strain, and contra lateral (opposite side) weakness. Stress in the workplace is realized often by housekeeping employees and is a very real cause of physical and mental injury. The causes of stress in the housekeeping employees environment are reviewed below along with the injurious consequences related to such stress. Faulkner and Patiar (1997) reported that housekeeping employees have high levels of stress in their organisations. Chiang, Birtch, and Kwan (2010) results of study done on food & beverage service employees of a four star property show low job control, poor work life balance and high job demands resulted in the high level of stress. Powell and Watson (2006) concluded that many hotels are following the practice of empowering housekeeping employees by asking them to check their rooms by themselves and to work under a system that is known as quota rather than making them under the direct supervision of management. Result of this type of empowerment is that the housekeeping employees face pressure which sustained till their shift ends. The finding of the study was that around 80% of housekeeping employees who are empowered reported of very pressurized work demands. O'Neill and Davis (2011) found that the main reasons for creating stress are work overloads and interpersonal tensions.

Thus, the above review of work of academic as well as national and international organizations makes it clear that awareness and understanding of need and importance OS&H practices is imperative to provide safe and healthy

environment to employees who work so hard to give a smile on the face of hotel guests. But, the analysis of literature clearly reveals that there is a need of empirical research to ascertain the execution of OS&H practices among hotel industry. Thus, with this background this study aimed to fulfill following research objectives and hypotheses.

Objectives of the Study:

1. To find out the level of execution of OS&H Practices of Housekeeping Department in Indian hotel Industry.
2. To find the difference in the execution of OS&H Practices among different categories of Hotels.

Hypothesis of the Study:

H1. The level of execution of OS&H practices of Housekeeping Department in Indian hotel not good.

H2. There is a no difference between executions of OS&H Practices among different categories of Hotels.

Research Methodology

The aim of this research study was to find out the level of execution of OS&H Practices of Housekeeping Department in Indian hotel Industry and difference in execution of these practices on the basis of different category of hotels. The study area was considerable for many reasons. The OS&H practices are directly concerned with the health and safety of hotel employees. The performance of any department will be good if the staff is fit and healthy. To work on this research the data was collected from various categories of hotels based on their locations ex. North (34.8%) South (20.9%) East (21.7%) and West (22.6%). All the selected hotels are from the list approved by FHRAI. Out of 230 Respondents managerial and supervisorial respondents were 55.7% and 44.3 % respectively. For this study, structured questionnaire was prepared based on comprehensive literature review. In the questionnaire Managerial, Supervisorial employees were asked to give there reviews on 32 statements which were in relation to the OS&H Factors. Likert-type scale (from 1: *strongly disagree* to 5: *strongly agree*) was used for the same purpose. Hotels approved from FHRAI were contacted for questionnaire filling. The data was analyzed by using statistical package programme (IBM SPSS 20 for Windows) which is used for social sciences The basic analysis and tests were utilized in the study like Descriptive Statistics, Reliability Statistic, Shapiro- Wilk Test of normality, Wilcoxon Signed Ranked Test and Spearman's Correlation Coefficient.

ANALYSIS AND INTERPRETATION

Demographic Profile of Hotel

Demographic Profile of the respondents is given in table (1). Majority of responses are from North (34.8%) followed by West (22.6%) then east (21.7%) and the last from south (20.9%). The hotels from various locations were categorized in chain (15.7%) and non chain hotels (84.3%). These category hotels were divided in to 3 star (40.9%), 4 star (45.2%). 5 star (7%) and 5 star deluxe (7%). As the data was based on the ergonomic practices and other hazards in workplace supervisors and Managerial staff were the best person to analyze the actual situation of the hotels. Managerial respondents were 55.7% and supervisorial were 44.3%.

Table 1: Demographic Profile

S.No	Location	Numbers	Percentile
	East	50	21.7
	West	52	22.6
	North	80	34.8
	South	48	20.9
Type of Organization			
		Numbers	Percentile
	Chain	36	15.7
	Non Chain	194	84.3
Category of Organization			
	Three Star	94	40.9
	Four Star	104	45.2
	Five Star	16	7.0
	Five Star Deluxe	16	7.0
Job Position			
	Managerial	128	55.7
	Supervi-sory	102	44.3

Level of execution of OS&H Practices

For the analysis, Wilcoxon Signed Ranked Test and Shapiro-Wilk Test of normality for Reliability Statistic were used. Responses were collected on 32 indicators related to OS&H practices. Through reliability test, consistency and Reliability of the scale was checked through Cronbach. The Cronbach α was recorded as .99. It is a significant value which depicts internal consistency and good reliability of the scale and is proficient to validate them and to give reliable results. Therefore, Conclusion is that the variables shows the content is validate.

Descriptive statistic was used to understand the level of adoption of OS&H practices in Indian hotel industry. The mean observation for overall 32 OS&H related indicators were (M= 2.71) which indicated poor execution of OS&H practices in housekeeping department in Indian Hotel Industry. For most of the OS&H indicators mean scores were observed below 3 such as Cleanliness of working area is maintained all the time (M=2.81), Proper training is given to the staff regarding safe use of tools and equipments (M=2.83), Staff is trained in ergonomic work methods and posture (M=2.29), Chemicals are tagged and stored properly at your Organization (M=2.54), First aid equipments and kits are available in the working area (M=2.38), First aid training is given to tackle any emergency situation (M=2.25), Wires are covered properly to avoid electric shocks (M=2.64), Protective gloves are provided by dealing with chemicals (M=2.68), Material safety data sheets are available for all cleaning chemicals are used (M=2.58), Sufficient shelves are available to store supplies materials tools and equipments (M=2.72). Though for most of the issues Standard Deviation was recorded above 1 which indicated the heterogeneity in the responses of respondents. This could be due to difference in practices of different categories of Hotels. Further this indicating the need to identify the study will attempt to find difference in execution of OS&H practices in different categories of hotels.

Table 2: Mean and Standard deviation for Execution of OS&H Practices in various categories of Hotel.

Descriptive Statistics			
S.No	**Variables**	**Mean**	**Std. Deviation**
1.	Cleanliness of working area is maintained all the time	2.8174	1.26756
2.	Proper training is given to the staff regarding safe use of tools and equipments	2.8348	1.22782
3.	Adequate work space is provided	2.8696	1.23204
4.	Dress code is planned to provide safety at work.	2.9391	1.21603
5.	Machinery is securely guarded.	2.9652	1.20620
6.	Proper training of using fire extinguisher is given.	2.8609	1.19859
7.	Proper tools and equipments are provided	2.8174	1.09691
8.	Walkways and work areas are free from obstruction and other hazards.	2.8174	1.07265
9.	Floors are dry and made up of non-slippery material.	2.7652	1.08685
10.	Carpets are in good condition, free of tripping hazards.	2.7913	1.15846
11.	Chipped tiles are replaced immediately	2.6957	1.18598
12.	Movements of trolley are kept clear for smooth operations.	2.7391	1.19272
13.	Windows are repaired properly to avoid cuts while cleaning.	2.7739	1.33154
14.	Staff is trained in ergonomic work methods and posture.	2.2957	1.31772
15.	You feel back pain due to long standing/ working hours	3.2435	1.03949
16.	Housekeeping carts are easy to push and move.	2.7391	1.20005
17.	Storage layouts are planned to minimize lifting problems.	2.5826	1.46887
18.	Sufficient shelves are available to store supplies materials tools and equipments.	2.6957	1.26473
19.	Waste and scraps are cleaned and dumped properly.	2.6435	1.20081
20.	Sufficient Trash/ waste bins are provided.	2.7217	1.17390
21.	Cleaning agents are labeled properly	2.5913	1.14628
22.	Material safety data sheets are available for all cleaning chemicals are used.	2.5826	1.25644
23.	Protective gloves are provided by dealing with chemicals.	2.6870	1.25911
24.	Training is provided for safe handling of chemical	2.6522	1.21427
25.	Chemicals are tagged and stored properly at your organization.	2.5478	1.31951
26.	Wires are covered properly to avoid electric shocks.	2.6435	1.14088
27.	Electric cables are water proof.	2.7130	1.22664
28.	Switch boards are clear and not damaged.	2.7043	1.15450
29.	All electrical items are tagged properly.	2.6696	1.28228
30.	Extension cables are properly attached.	2.7826	1.22677
31.	First aid training is given to tackle any emergency situation	2.2522	1.35623
32.	First aid equipments and kits are available in the working area	2.3826	1.26062

Test of Normality

Test of normality was done (table 3) to analysis where data was normally distributed or not. Shapiro-Wilk test of normality was used to compare the scores in the sample. If test is significant ($p < 0.05$) it shows that distribution of sample was different from normal distribution. In the study, OS&H factors Shapiro-Wilk$W\ (230) = .779,\ p < .001$ was non-normal. The close examination of Histogram indicated that data was not normally distributed, as the curve in histogram was not normal and didn't have approximate bell shape curve. Thus support the use of non-parametric test One-Sample Wilcoxon Signed Rank test to test the H1

Table 3: Normality test

	Shapiro-Wilk		
	Statistic	Df	Sig.
OSH_ HK_ Overall	.779	230	.000

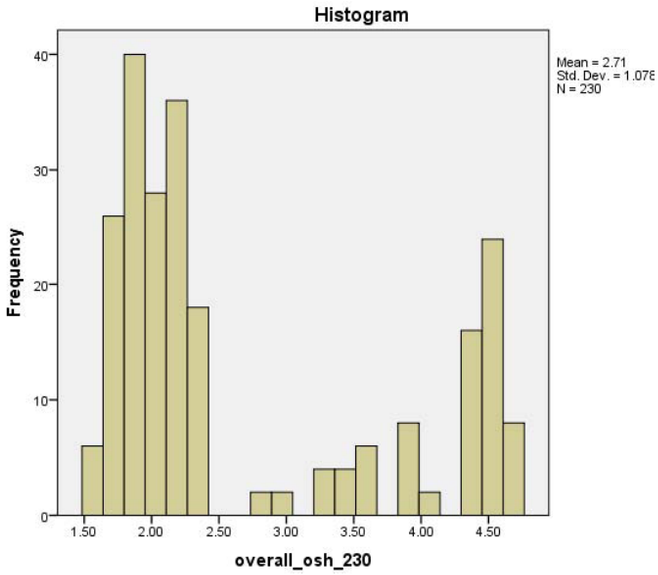

Fig. 1: Diagrammatic Presentation of Normality Test

To test the null hypothesis i.e., the level of execution of OS&H practices of Housekeeping Department in Indian hotel is not good, the Wilcoxon Signed test was used. Results indicated that the median of Execution of OS&H Practices, (Observed Median =2.19) was slightly lower than the hypothesized median value 3, T= 2766.500, z= -1.587 and p= .113 > 0.05 (Significance value), Hence $H_0 1$ is accepted i.e. the level of execution of OS&H practices of Housekeeping Department in Indian hotel is not good.

Table 4: One-Sample Wilcoxon Signed Rank Test for execution of OS&H practices in Housekeeping Department

Null Hypothesis	Test	Sig.	Decision
The Median of Awareness of OSH_HK Practices equals to 3.00	One-Sample Wilcoxon Signed Rank Test	.113	**Retain the null hypothesis**.

Note. Asymptotic significances are displayed. The significance level is .05.

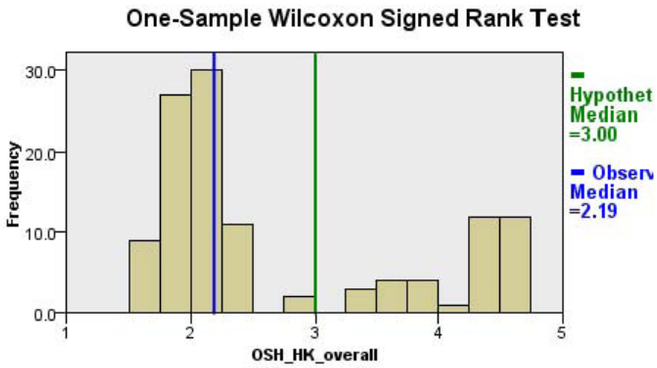

Fig. 2: Model Viewer for One-Sample Wilcoxon Signed Rank Test for execution of OS&H practices in Housekeeping Department

Table 5

Total N	230
Test Statistic	2,766.50
Standard Error	358.272
Standardized Test Statistic	-1.587
Asymptotic	.113

Difference between Execution of OS & H Practices Among Different Categories of Hotels

On the basis of above analysis it can be inferred that the level of execution of OS&H was found poor. Further study attempted to find difference between the execution of OS&H practices among hotels on the basis different category. Descriptive statistic was used for the same. For most of the indicators in 3 Star and 4 Star categories the mean was observed below 3, whereas for 5 Star and 5 Star Deluxe categories for most of the OS&H indicators, mean was observed more than 4. Soon the basis of results it can be inferred that OS&H practices are followed in Luxury hotels (5 Star & 5 Star Deluxe) whereas budget hotels (4 Star & 3 Star) need to reform their OS&H practices to enhance employees' satisfaction and retention.

Though SD for the 3 star 4 star was observed more than .8 which indicated that respondents are not unite in their opinion on execution of OS&H practices. Whereas 5 star and 5 star deluxe respondents were found unite in their opinion as standard deviation was at lower side for these hotels.

Table 6

S.No	Variable	3 Star	SD	4 Star	SD	5 Star	SD	5 Star Deluxe	SD
1.	Cleanliness of working area is maintained all the time	2.34	.88	2.63	1.14	4.62	.50	5.00	.00
2.	Proper training is given to the staff regarding safe use of tools and equipments	2.38	.86	2.65	1.09	4.50	.73	5.00	.00
3.	Adequate work space is provided	2.36	.89	2.73	1.08	4.62	.50	5.00	.00
4.	Dress code is planned to provide safety at work.	2.46	.92	2.78	1.06	4.62	.50	5.00	.00
5.	Machinery is securely guarded.	2.42	.89	2.86	1.02	4.75	.44	5.00	.00
6.	Proper training of using fire extinguisher is given.	2.42	.92	2.73	1.09	4.37	.71	4.75	.44
7.	Proper tools and equipments are provided	2.42	.76	2.75	1.04	4.25	.68	4.12	1.31
8.	Walkways and work areas are free from obstruction and other hazards.	2.48	.82	2.67	1.03	4.12	.61	4.37	.50
9.	Floors are dry and made up of non-slippery material.	2.44	.92	2.65	1.07	3.87	.34	4.25	.44
10.	Carpets are in good condition, free of tripping hazards.	2.48	.90	2.57	1.12	4.37	.50	4.37	.50
11.	Chipped tiles are replaced immediately	2.40	.98	2.48	1.14	4.25	.44	4.25	.44
12.	Movements of trolley are kept clear for smooth operations.	2.48	.96	2.48	1.14	4.37	.71	4.25	.44
13.	Windows are repaired properly to avoid cuts while cleaning.	2.38	1.06	2.57	1.28	4.50	.51	4.62	.50
14.	Staff is trained in ergonomic work methods and posture.	1.78	.82	2.13	1.18	4.12	1.31	4.50	.51
15.	You feel back pain due to long standing/ working hours	3.17	1.10	3.34	1.09	3.25	.44	3.00	.51
16.	Housekeeping carts are easy to push and move.	2.40	1.05	2.71	1.17	3.62	1.25	4.00	.89
17.	Storage layouts are planned to minimize lifting problems.	2.12	1.10	2.32	1.33	4.50	1.03	5.00	.00
18.	Sufficient shelves are available to store supplies materials tools and equipments.	2.25	1.00	2.50	1.03	4.25	1.00	5.00	.00
19.	Waste and scraps are cleaned and dumped properly.	2.17	.91	2.51	1.01	4.25	1.00	4.62	.50
20.	Sufficient Trash/ waste bins are provided.	2.29	.85	2.61	1.11	4.00	.89	4.62	.50
21.	Cleaning agents are labeled properly	2.19	.91	2.48	1.07	4.00	.73	4.25	.44
22.	Material safety data sheets are available for all cleaning chemicals are used.	2.10	.97	2.51	1.15	4.00	1.26	4.37	.50
23.	Protective gloves are provided by dealing with chemicals.	2.25	1.00	2.51	1.10	4.37	.88	4.62	.50
24.	Training is provided for safe handling of chemical	2.23	.97	2.48	1.03	4.25	.85	4.62	.50

25.	Chemicals are tagged and stored properly at your organization.	2.02	.93	2.44	1.23	4.00	.73	4.87	.34
26.	Wires are covered properly to avoid electric shocks.	2.19	.76	2.57	1.10	3.87	.95	4.50	.51
27.	Electric cables are water proof.	2.19	.84	2.67	1.17	4.12	.95	4.62	.50
28.	Switch boards are clear and not damaged.	2.25	.89	2.61	1.02	4.00	.89	4.62	.50
29.	All electrical items are tagged properly.	2.12	1.04	2.63	1.13	4.25	1.00	4.50	.51
30.	Extension cables are properly attached.	2.31	1.05	2.75	1.12	4.12	.95	4.37	.50
31.	First aid training is given to tackle any emergency situation	1.78	.99	2.09	1.25	3.87	1.31	4.37	.50
32.	First aid equipments and kits are available in the working area	2.04	.97	2.21	1.23	3.62	1.14	4.25	.44

Kruskal-Wallis test to find out difference execution of OS&H Practices in housekeeping department in the Indian hotel industry on the basis of categories of hotels

Test was applied to examine whether there is statistically significant difference between the groups of an ordinal independent variable (Category of Hotel) on a continuous dependent variable of OS&H Practices in housekeeping department. Further pair wise comparison was also done by comparing each group against each other group in pair. Finally another Jonckheere's trend test was applied to understand the trend of median. This test ascertains whether median was increased or decrease across the group in certain order.

Kruskal-Wallis Test for Identifying Differences in Execution of OS&H Practices in Relation to the category of hotel

To determine statistically significant differences between the group of an ordinal independent variable Kruskal-Wallis Test was used (Category of Hotel) on continuous dependent variable (execution of OS&H practices). Further even by comparing each group against each other groups in pairs, pair wise comparison was also done. And finally, another test named as Jonckheere's trend test was also applied to predict the trend of median. It shows whether the median was decreased or increased in certain order across the groups.

Kruskal-Wallis Test is the non-parametric test. By test of normality data have already been tested by Shapiro-Wilk test ($p < .05$) and further by visual inspection of the histogram, has supported the use of Kruskal-Wallis non-parametric test.

Table 7

Independent -Samples Kruskal-Wallis Test (N=230)					
Measures	**Null Hypothesis**	**Test Statistic**	**Df**	**Sig.**	**Decision**
Size in Capital	The distribution of overall_osh_230 is the same across categories of category of Organisation	65.567	3	.001	Reject the null hypothesis
Asymptotic significances are displayed. The significance level is .05.					

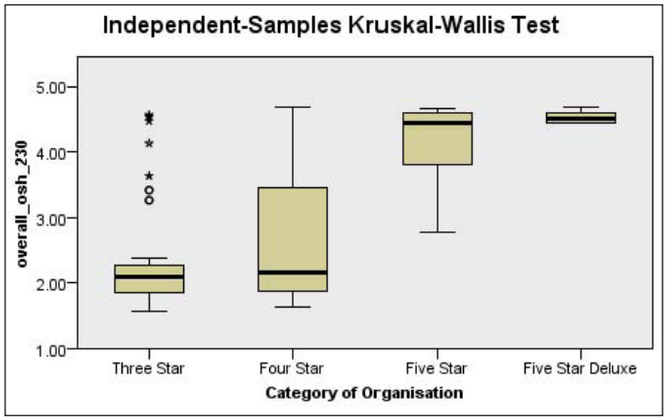

Fig. 3: Model Viewer of Independent- Samples Kruskal- Wallis Test

Table 8: Independent- Samples Kruskal- Wallis Test

Total N	230
Test Statistic	65.567
Degrees of Freedom	3
Asymptotic Sig. (2-sided test)	.000

1. The test statistic is adjusted for ties.

Differences in the execution of OS&H in Housekeeping on the basis of different category of the hotel

To find the differences in the execution of OS&H Practices in housekeeping Department among Indian hotel Industry on the basis of different category the data was analyzed through Kruskal-Wallis test. From the data analysis it can be resulted that there was significant difference for the execution of OS&H Practices in housekeeping department among group of Independent variable on the basis of category of hotel. The significance value *H (3) = 65.567, P= .0001* was less than .05from the above analysis it can be concluded that *there was significant difference in execution of OSH practices among hotels on basis of star categorization. Executions of OSH Practices were better in Luxury hotel rather than budget properties.*

Follow-up Analysis through Pair wise Comparison

Further with the aim to observe out of all which pair was different in the execution of OS&H in hotels. Pair wise analysis was done between six identified groups which can be totally different from each other. In pair wise comparison adjusted *p* value highlights major difference.

The analysis of data showed difference in four groups (Three star and five star *p*=.000, three star and five star deluxe *p*=.000, four star and five star *p*=.000, four star and five star deluxe *p*=.000) for execution of OS&H practices. Thus these groups were extensively different for execution of OS&H as Adj. Sig. (*p>.05)* (Figure). For remaining two pairs, *p* values (*p>.05*) has shown no significant difference among the groups for execution of OS&H Practices.

Table 9: Pairwise Comparisons among Groups Of Organizational Profile

Each node shows the sample average rank of Category of Organisation.

Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
Three Star-Four Star	-14.116	9.465	-1.491	.136	.815
Three Star-Five Star	-100.779	17.986	-5.603	.000	.000
Three Star-Five Star Deluxe	-115.154	17.986	-6.402	.000	.000
Four Star-Five Star	-86.663	17.860	-4.852	.000	.000
Four Star-Five Star Deluxe	-101.038	17.860	-5.657	.000	.000
Five Star-Five Star Deluxe	-14.375	23.514	-.611	.541	1.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

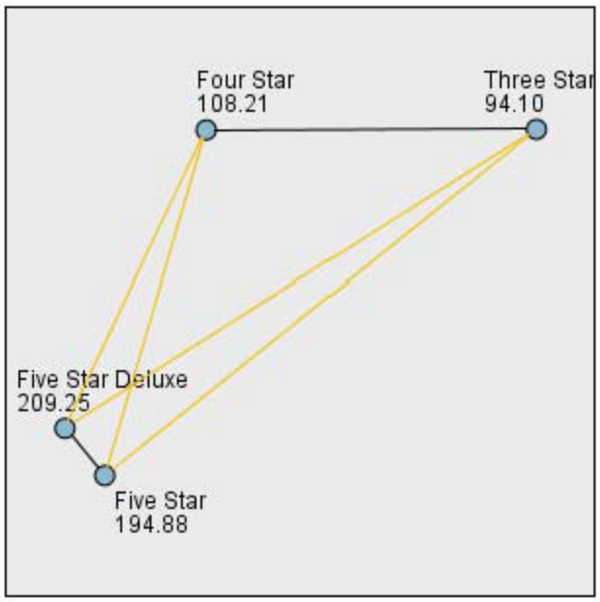

Fig. 4: Model Viewer of Pairwise Comparison of Organisation

Testing for Trends – the Jonckheere-Terpstra Test

The Jonckheere-Terpstra Test was used to determine whether the compared groups produce a meaningful median in order. The sign of score *z* depicts useful inference for variables under consideration. It is positive if it indicates the ascending median (the median becomes bigger as values of coding value becomes bigger), it is negative if it indicates a trend of descending median (median gets smaller as the value of coding variable gets bigger). In the present study, the positive value of *z* = 6.483 denotes that median is getting bigger from small to large for execution of OS&H Practices on the basis of category of Hotels. The *p* value (*p* = .000) indicated a significant trend in median as it is lower than the critical value of .05.

Hence the analysis shows a significant trend in data: as category increased from 2 star to 5 star deluxe the median of execution of the OS&H practices also increased, *J=11,642, z=6.483, p=.001*. Therefore among large category Hotels execution of OS&H Practices is better as compare to 3 star or 4 star category Hotels

Table 10: Independent -Samples Jonckheere-Terpstra Test

Independent -Samples Jonckheere-Terpstra Test (N=230)					
Measures	**Null Hypothesis**	**Test Statistic**	**N**	**Sig.**	**Decision**
Size in Capital	The distribution of overall_osh_230 is the same across categories of category of Organisation	6.483	230	.001	Reject the null hypothesis
Asymptotic significances are displayed. The significance level is .05.					

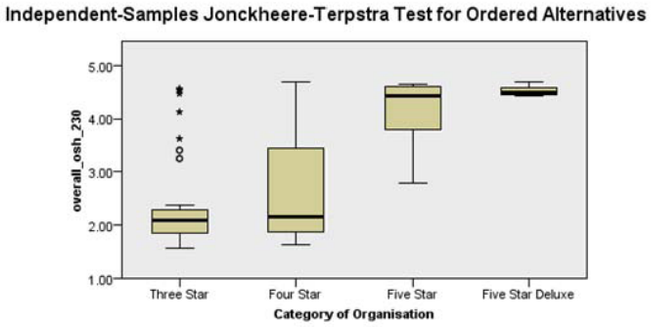

Fig. 5: Model Viewer of Independent-Samples Jonckheere-Terpstra

Table 11: Independent-Samples Jonckheere-Terpstra

Total N	230
Test Statistic	11,642.000
Standard Error	533.396
Standardized Test Statistic	6.483
Asymptotic Sig. (2-sided test)	.000

CONCLUSION

Occupational safety and health is one of the important human resource practices for hotel industry. The implementation of these practices in appropriate manner counts to the overall performance of housekeeping department. OSH is related to all actions surrounding the improvement and maintenance of health and safety and the prevention and reduction of potential health and safety hazards and risks in the workplace. These hazards and risks may arise from exposures in the job and work environment and vary from physical factors (e.g. noise, vibration and heat), chemical factors (e.g. poisons, toxics), hazardous substances (e.g. dusts, oil and coal) and workplace organization (e.g. repetition of work, supervision, training) to stress and violence. The present study has attempted to provide supplementary insights into areas relating to factors influencing the adoption and implementation of OSH practices in hotel housekeeping operations. The present research is indicative and much remains to be examined. The results of the study indicate that the level of execution of OS&H practices of Housekeeping Department in Indian hotel is not good and to achieve the same Wilcoxon Signed test was used. Results indicated that the median of Execution of OS&H Practices was slightly lower than the hypothesized median. Further to find the differences in the execution of OS&H Practices in housekeeping Department among Indian hotel Industry on the basis of different category the data was analyzed through Kruskal-Wallis test. From the data analysis concluded that there was significant difference in execution of OSH practices among hotels on basis of star categorization. Executions of OSH Practices were better in Luxury hotel rather than budget properties. Future research should consider incorporating other important items that have not been considered or omitted from other studies and are likely to influence the adoption of OSH practices in housekeeping department in hotels and allied sectors where housekeeping services are required.

REFERENCE

Borstad, J. D., Buetow, B., Deppe, E., Kyllonen, J., Liekhus, M., Cieminski, C. J., & Ludewig, P. M. (2009). A longitudinal analysis of the effects of a preventive exercise programme on the factors that predict shoulder pain in construction apprentices. *Ergonomics, 52*(2), 232-244.

Chiang, F. F. T., Birtch, T. A., & Kwan, H. K. (2010). The moderating roles of job control and work-life balance practices on employee stress in the hotel and catering industry. *International Journal of Hospitality Management, 29*(1), 25-32.

Lee, C.-C., Huang, S.-H., & Zhao, C.-Y. (2011). *A study on factors affecting turnover intention of hotel empolyees,* 866-875. Retrieved from http://www.aessweb.com/pdf-files/866-875.pdf

Kuranchie-Mensah, E. B., & Amponsah-Tawiah, K. (2015). Employee motivation and work performance: A comparative study of mining companies in Ghana. Retrieved from http://www.jiem.org/index.php/jiem/article/viewFile/1530/755.

Faulkner, B., & Patiar, A. (1997). Workplace induced stress among operational staff in the hotel industry. *International Journal of Hospitality Management, 16*(1), 99.

Good Practice in Occupational Health Services a Contribution to Workplace Health, WHO Regional Office for Europe. Retrieved from http://www.euro.who.int/data/assets/pdffile/0007/115486/E77650.pdf .

Liladrie, S. (2010). Do not disturb/please clean room: Hotel housekeepers in greater Toronto. *Race & Class, 52*(1), 57-69.

McHugh, M. P., & Cosgrave, C. H. (2010). To stretch or not to stretch: The role of stretching in injury prevention and performance. *Scandinavian Journal of Medicine & Science in Sports, 20*(2), 169-181.

Nankervis, A. R., Crompton, R. L., & Baird, M. (2005). *Human resource Management: Strategies and process.* Melbourne: Thomson.

O'Neill, J. W., & Davis, K. (2011). Work stress and well-being in the hotel industry. *International Journal of Hospitality Management, 30*(2), 385-390.

OSHA. (2012). Guide to Restaurant Safety July Research and Education Unit Cal/OSHA Consultation Service Division of Occupational Safety and Health.

Powell, P. H. (2006). Service unseen- The hotel room attendant at work. *International Journal of Hospitality Management, 25*(2), 297-312. doi: 2005.04.003,.

Muthuviknesh, R., & Kumar, K. A. (2014). The effect of occupational health and safety management on work environment: A prospective study. *International Journal of Advance Research in Computer Science and Management Studies, 2*(6).

Sachabracq, M.j., Cooper, C.L., Winnubst, J.A.M (2003). Introduction. In: Sachabracq, M.j., Winnubst J.A.M., Cooper, C.L., (2003). *The handbook of work & Healthy psychology.* England: john wiley & sons.

Buchanan, S., Vossenas, P., Moriarty, J., & Mirer, F. (2010). Occupational injury disparities in the US hotel industry. *American Journal of Industrial Medicine, 53*, 116-125.

Taylor, G., Easter, K., & Hegney, R. (2003). *Advancing safety: workplace guide.* Perth: work safety and health associates.

Tourism and Hospitality Sectoral Report. (May, 2017). India Brand Equity Foundation https://www.ibef.org/download/Tourism-and-Hospitality-May-2017.pdf