
CHECKING IN ON INVENTORY MANAGEMENT A COMPARATIVE ANALYSIS OF HOTEL HOUSEKEEPING DEPARTMENTS ACROSS STAR CATEGORIES

Sarika Joshi*, **Deepa Prasad Venkatraman****, **Pratik Rajendra Satpute*****, **Gautam Bapat******

**Assistant Professor, AISSMS College of Hotel Management & Catering Technology, Pune, Maharashtra, India. Email: sarikaamitjoshi@gmail.com*

***Associate Professor, Department of Management Sciences (PUMBA), Savitribai Phule Pune University, Ganeshkhind, Pune, Maharashtra, India. Email: deepaprasad.pumba@gmail.com*

****Assistant Professor, Department of Hospitality Management, Dr. Vishwanath Karad MIT World Peace University, Pune, Maharashtra, India. Email: psatpute5@gmail.com*

*****Associate Professor, WPU School of Business, Dr. Vishwanath Karad MIT World Peace University, Pune, Maharashtra, India. Email: gautambapat@gmail.com*

Abstract

The aim of the paper is to study the complex system of inventory management used in star rated hotels and emphasis is on whether the inventory management cycle varies depending on the star category of the hotel. The aim of the study is to expand the domain of managing inventory in hotels in relation with information technology and environmental sustainability. The paper used structured interviews and a Likert scale questionnaire for descriptive research. This research uses Proportionate Stratified Random sampling to choose all

five, four, and three-star hotels in the first stage and randomly select Manager and Associate level personnel to complete the questionnaire. To supplement the standardised questionnaire, executive housekeepers were interviewed for their experience. The inventory management cycle involves various stages such as budgeting, purchasing, storing, distribution, operations, and controls. This study examines the inventory management practices in three different categories of hotels, namely, five-star, four-star, and three-star hotels. The results of the study point out that there is no significant difference in inventory management practices among these hotels, irrespective of their star category. The paper includes implications for the development of a competent inventory management system in hotels irrespective of their star rating.

Keywords: *Housekeeping Department, Inventory Management, Executive Housekeeper, Star-Rated Hotels, Inventory Control Practices*

Introduction

According to British law, a “Hotel” or “Inn” is a place that feeds and houses real visitors, if they can pay for the services and are physically fit to do so. The Hotel Housekeeping staff oversees keeping the hotel clean, safe, and nice-looking so that guests can have a pleasant stay (Guarin & Joanna, 2016). The operational department oversees keeping the hotel rooms, public areas, back areas, and grounds clean and tidy (John et al., 2015). This is a very important part of making sure that guests are happy during their stay. Inventory Management, according to the Business Dictionary, is the process of keeping track of the value of the materials and goods that a company must help with production, support operations, selling, or customer service (Kagnicioglu & Mogol Sever, 2019; Nwaiku & Ejechi, 2022; Sunday & Joseph, 2017).

The tourism and hospitality industry holds a prominent position as a capable industry in the contemporary world (Ziukov, 2015). The tourism and hospitality sector in India has seen a growth in recent years, majorly because of the impact of globalisation. As a result, this industry has emerged as one of the most promising sectors in the country. Pune, like other metropolitan cities in India, has been identified as a significant commercial centre, leading to a surge in the requirement for travel. The increasing demand for hotel accommodations in Pune has led to a significant expansion of hotel offerings, ranging from modest three-star establishments to high-end luxury brands (John et al., 2015). The department in charge of ensuring the cleanliness, upkeep, and maintenance of rooms and public areas in hotels is commonly known as

the housekeeping department. The provision of numerous amenities and linen throughout the hotel is a crucial responsibility of this department. It can be observed that the provision of uniforms to all hotel staff is a responsibility that falls under the purview of the housekeeping department.

Inventory management is an essential operational function in hotel housekeeping. To ensure efficiency, it is vital for the housekeeping department to maintain control over inventory (Kagnicioglu & Mogol Sever, 2019). This includes activities such as purchasing, storing, controlling stocks, forecasting, and budgeting. The housekeeper must plan and organize stock handling administration to ensure smooth operations (Ziukov, 2015). However, some of the significant challenges faced by housekeeping include inadequate service equipment, inefficient material handling, and uncontrolled inventories. As inventory is continually changing, it requires constant monitoring and careful control using various inventory management techniques (Abuya & Shale, 2018).

The goal of this research paper is to investigate how hotels usually take stock in the housekeeping department of different types of hotels. Since the Housekeeping department is in charge of putting goods and supplies in the rooms, this study will look at how proper inventory management affects how well the housekeeping department works in star-rated hotels (Mensah, 2014). Information technology is a key part of handling inventory in a way that works well. So, this study will look at how technology is used to control inventory and see if there are any differences between three-, four-, and five-star hotels when it comes to how technology is used to control inventory. This study will also find out if the method by which three-, four-, and five-star hotels keep track of their stocks makes a big difference in how sustainable they are for the environment.

Literature Review

Van Der Walt and Bean (2022) investigated how the in-flight eating business could stop losing food in their study. They came up with a model that decides what goods to buy by considering both the refill of products and the uncertain demand for meals. This model is called a random model with multiple-objectives which has mixed-integer programming in it along with a set source and a product which is has static replacement function. The model has imbibed the results of the Markov chain forecasting model which is time-inhomogeneous in nature and a multiple regression analysis to figure out how

likely it was that the flight would need a lot of meals. When the uncertainty of passenger load was considered, the study's results showed that the model was more likely to meet the pre-set amount of customer happiness. On the other hand, adding product replacement made the model better at cutting waste, but it also made it less trustworthy (Van Der Walt & Bean, 2022).

In a recent study by Fang and Chen (2022) the focus was on making the Vendor Management Inventory (VMI) system better. The goal was to make the supply system and the Internet of Things (IoT) work better. The study showed the problems that manufacturing companies face, like how hard it is to get inventory information and combine it with other useful IoT information. To deal with the problems listed above, a full Hub VMI system was put in place. This system used an advanced RFID technology that made it possible to get product information from the warehouse. It also made it easier to give customers suggestions about what products to buy. The study's results show that product management methods have gotten better, that costs and total execution times have gone down, that customer response times has got shorter, and that system performance efficiency has gone up (Fang & Chen, 2022).

Abuya and Shale (2018) did a study in Kenya to find out what effect inventory management has on how well the hotel business does. The supply chain officers, around 400 in Nairobi's central business area were asked to take part in the study. The study showed that providers are very important in managing goods, and they should be thanked and paid on time. The study also suggested that businesses in the hotel industry hire people who have been trained and taught to make sure they work well. Amalgamation of ICT-Information and Communication Technology is also important if the organisation wants to save money and be more cost-effective. Use of technology can cut down on the time it takes to send products, improve the quality of those products, and make customers happier. Lastly, the restaurant business should teach its workers how to use different tools and techniques for buying things (Abuya & Shale, 2018).

Sheakh (2018) discussed the challenge of inventory management in supply chain management. To fulfil customer demands, companies must keep inventories in their warehouses, which incurs holding costs and ties up funds. Inventory management helps determine the right quantity of inventory to fulfil the demand and prevent overstocking. The study analysed the relationship between the company's performance using analysis of inventory days and

return on asset (ROA) analysis with regards to inventory management. It identified issues with inventory management such as disorganized inventory arrangements, excessive inventory days with no cycle counting, and incorrect records due to unskilled workers (Abuya & Shale, 2018). The study also found a significant correlation between ROA and inventory days (Sheakh, 2018).

Ukabuilu (2018) studied ten hotels in Owerri, Imo State, kept track of their stock. The information for the study was gathered with the help of an organised questionnaire and examined with simple statistical tools. The study had six goals, one of which was to see if the hotels bought things the right way, kept good records, put different things in different places, used trained staff to handle stock, and used the First-In, First-Out (FIFO) method of accounting. The chi-square test was used to come up with and test the theory. It turned out that most of the goals that were set were met by the hotels. Based on a review of the data, the study found that the hotels it used different ways to keep track of their stock. It was suggested that hotels use the right stock control methods to run well (Ukabuilu, 2018).

Guarin and Joanna (2016) study on how hotels and restaurants in Ilocos Sur, Philippines, handle cleaning management and what the norms are. The study looked at how clean, organised, sanitary, and safe the facilities and tools were. It also looked at how well materials were controlled, how well upkeep was done, and what problems the cleaning department had. The researcher asked people to fill out a questionnaire to get information. The information that was collected was analysed in different methods like percentage, ranking, mean and frequency distribution. The study concluded that the restaurants and hotels in Ilocos Sur were safe and clean for their guests. The study stressed how important it is for hotels to have consistent and fast inventory management processes in place to stop theft and the removal of things without permission. Also, the study showed that the money for housekeeping was enough to pay for all the cleaning products and materials that were needed (Guarin & Joanna, 2016).

Almufleh and Alkhatib (2023) studied the impact of supply chain management practices in five-star hotels in Jordan. The findings specify that the practices of supply chain management in regard to customer relations, supplier relations and internal processes & the level of operational performance with regards to time, quality and flexibility are high showing a statistical strong relationship between the practices and dimensions of operational performance (Almufleh & Alkhatib, 2023).

Singh (2023) presented an up-to-date review of inventory control and analysed its various techniques, costs associated with it and methods of indenting stock. It mentioned that the availability of good quality stock, in right quantity, at right place and time and at right cost is the base of inventory control, this helps towards the smooth functioning of any facility. There are multiple techniques for inventory control. Some of them are ABC analysis, VED analysis, ABC-VED matrix, FSN analysis, SDE analysis etc. It further mentions that the healthcare managers will have to utilize scientific methods of inventory management. Inventory control is an important aspect of hospital management. It provides significant improvement in patient care, customer relationships and optimal use of resources (Singh et al., 2022).

Research Methodology

The research method used is descriptive research for the study. The main aim of the paper is comparison of Housekeeping Inventory Management process in five-star, four-star, and three-star hotels in the Pune region. The study involved employees who work in the housekeeping department of hotels in Pune. This study considers various categories of housekeeping employees such as housekeeping managers, Assistant housekeeping managers, Supervisors, Guest room attendants, laundry supervisors, and Linen room supervisors. The population of the study comprised 118 hotels, including five, four, and three-star hotels in Pune. A Proportionate stratified random sampling technique was used in the study where all the five-, four- & three-star hotels were selected in the first stage and Manager and Associate level employees were selected randomly in the later stage. Although the sample size should have been 265, as per the formula, the researcher collected data from 290 respondents. The data collected was analysed using SPSS 22.0 in terms of descriptive statistics and inferential statistics.

Questionnaire

The researcher used an organised questionnaire to get first-hand information for this study work. The questionnaire was given to cleaning workers and other hotel staff in the Pune area who were keeping track of goods. This included three-star, four-star and five-star hotels. The questionnaire had questions about both dependent and independent variables. It was made using

a Likert scale with five points which can be used to measure the effects of different factors. The number went from one, which was the least important, to five, which was the most important. The questionnaire was carefully made to make sure it would get useful information for the study.

Structured Interviews

Structured conversations were done with the housekeeping staff, especially the Executive Housekeepers, from a group of hotels to get information about the topic at hand. For these interviews, a set of questions was used to make sure that the data gathered was consistent and standardised. The Executive Housekeepers were chosen because they have a lot of experience running cleaning services and know how to keep track of goods. The interviews that were done gave useful information about the methods to control inventory used in the housekeeping department of the hotels that were chosen for the study. The data from the interviews was carefully looked at to find themes and trends that kept coming up. Then, based on these results, statements and suggestions were made about how to improve the ways by which hotels handle their supplies in the housekeeping areas. Structured talks with experts in the field turned out to be a good way to get first-hand information from them. This was thought to be necessary for the project to reach its goals (Dearnley, 2005).

Data Analysis

Hypothesis 1

H₁ - There is a significant difference of three-star, four star and five-star hotels on inventory management.

The aim of this study is to find out if there is a relation between the different kinds of hotels and how they handle their goods. One-way ANOVA is was used to reach this goal. The study compares three-star, four-star, and five-star hotels. Analysis of Variance, or ANOVA, is the statistical method which can be used to check if there are significant changes amongst more than two groups. The goal of this study is to use ANOVA as a statistical tool to find

out if inventory management practises differ between hotels with different star ratings (Cuevas et al., 2004). The goal of this study is to learn more about how hotels with different star grades handle their inventory. The goal is to figure out where there might be room for improvement in this area.

Statistical Analysis

Table 1: Statistical Analysis of Inventory Management of Hotels

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
3-Star	92	4.0154	0.99984	0.10424	3.8083	4.2224	1	5
4-Star	93	3.9874	0.99849	0.10354	3.7817	4.193	1	5
5-Star	105	4.1536	0.78323	0.07644	4.002	4.3052	1.33	5
Total	290	4.0564	0.92651	0.05441	3.9494	4.1635	1	5
<i>Test of Homogeneity of Variances</i>								
Levene Statistic			df1	df2	Sig.			
3.986			2	287	0.12			
<i>ANOVA</i>								
	Sum of Squares		df	Mean Square	F	Sig.		
Between Groups	1.591		2	0.795	0.926	0.397		
Within Groups	246.493		287	0.859				
Total	248.084		289					
<i>Homogeneous Subsets</i>								
Star Classification of hotel		N		(Subset for alpha = 0.05) 1				
4-Star		93		3.9874				
3-Star		92		4.0154				
5-Star		105		4.1536				
Sig.				0.428				

The significant value of test of homogeneity of variances is $0.120 > 0.05$. It means it satisfies the condition of ANOVA (Cuevas et al., 2004; Glass, 1966). The significant value of ANOVA table is $0.397 > 0.05$, means there is no significant difference in three types of hotels with respect to inventory management. Hence, H_1 is rejected. Tukey HSD is used to check if there is a major difference between the means of more than one group in a study. This test is made to find out which groups are different from each other and how much they are different (Abdi & Williams, 2010). It is used when an ANOVA test shows that the mean values of at least two groups are very different from each other. When doing this study with more than one group, Tukey HSD is a useful tool that can help find out which groups are majorly unlike from each other. It's important to keep in mind that the results of this test should be carefully evaluated and looked at with other statistical measures to make sure they are correct (Abdi & Williams, 2010).

Mean values for various groups in homogeneous subsets are as follows:

- Sample size of Harmonic Mean = 96.320.
- The size of the groups is unequal. The harmonic mean of the group sizes is used. There is no guarantee of Type I error levels.

In the homogeneous subset table shows that all the hotels are in the same subset, it means there is no difference.

Means Plots

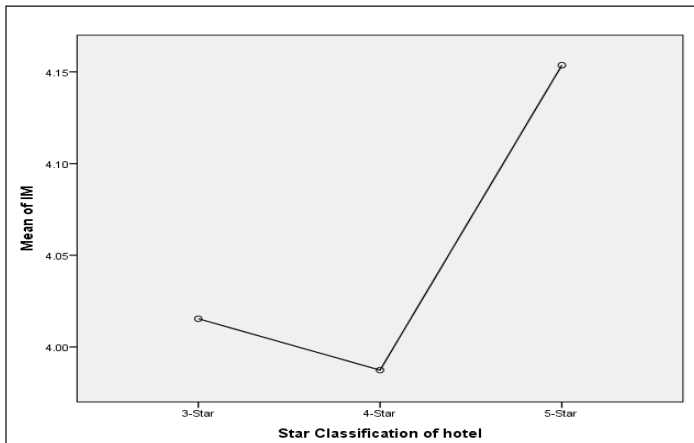


Fig. 1: The Mean Value of Hotels for Three Types of Hotels

The above graph shows the mean value of the three types of hotels.

Hypothesis 2

H_2 - There is a significant difference of three-star, four star and five-star hotels of inventory control on housekeeping operation performance.

Statistical Analysis

Table 2: Statistical Analysis of Housekeeping Operation Performance

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
3-Star	92	4.1283	0.88185	0.09194	3.9456	4.3109	1.2	5
4-Star	93	4.0946	0.94021	0.0975	3.901	4.2883	1.2	5
5-Star	105	4.1981	0.86758	0.08467	4.0302	4.366	1.2	5
Total	290	4.1428	0.8939	0.05249	4.0394	4.2461	1.2	5
<i>Test of Homogeneity of Variances</i>								
Levene Statistic			df1	df2	Sig.			
0.506			2	287	0.603			
<i>ANOVA</i>								
	Sum of Squares			df	Mean Square	F	Sig.	
Between Groups	0.556			2	0.278	0.347	0.707	
Within Groups	230.373			287	0.803			
Total	230.93			289				
<i>Homogeneous Subsets</i>								
Star Classification of Hotel		N			(Subset for alpha = 0.05) 1			
4-Star		93			4.0946			
3-Star		92			4.1283			
5-Star		105			4.1981			
Sig.					0.702			

The significant value of test of homogeneity of variances is $0.603 > 0.05$. It means it satisfies the condition of ANOVA. The significant value of ANOVA table is $0.707 > 0.05$, means there is no significant difference in three types of hotels with respect to housekeeping operation performance. Hence, H_2 is rejected.

Mean values for various groups in homogeneous subsets are as follows:

- Sample size of Harmonic Mean = 96.320.
- The size of the groups is unequal. The harmonic mean of the group sizes is used. There is no guarantee of Type I error levels.

In the homogeneous subset table shows that all the hotels are in the same subset, it means there is no difference.

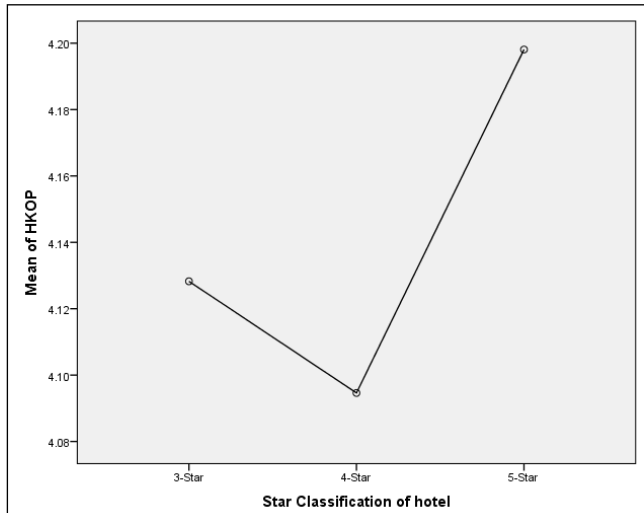


Fig. 2: The Mean Value of Three Types of Hotels

The above graph shows the mean value of the three types of hotels for housekeeping operation performance.

Hypothesis 3

H_3 - *There is a significant difference of three-star, four star and five-star hotels on role of Technology on Inventory management.*

Statistical Analysis

Table 3: Statistical Analysis of Types of Hotels vs. Technology

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
3-Star	92	3.913	0.92392	0.09632	3.7217	4.1044	1.75	5
4-Star	93	3.8145	0.99925	0.10362	3.6087	4.0203	1.5	5
5-Star	105	3.9976	0.83601	0.08159	3.8358	4.1594	1.75	5
Total	290	3.9121	0.91863	0.05394	3.8059	4.0182	1.5	5
<i>Test of Homogeneity of Variances</i>								
Levene Statistic			df1	df2	Sig.			
1.741			2	287	0.177			
<i>ANOVA</i>								
			Sum of Squares	df	Mean Square	F	Sig.	
Between Groups			1.654	2	0.827	0.98	0.377	
Within Groups			242.229	287	0.844			
Total			243.883	289				
<i>Homogeneous Subsets</i>								
Star Classification of Hotel			N	(Subset for Alpha = 0.05) 1				
4-Star			93	3.8145				
3-Star			92	3.913				
5-Star			105	3.9976				
Sig.				0.351				

The significant value of test of homogeneity of variances is $0.177 > 0.05$. It means it satisfies the condition of ANOVA. The significant value of ANOVA table is $0.021 < 0.05$, means there is no significant difference in three types of hotels with respect to role of technology on Inventory management. Hence, H_3 is rejected.

Mean values for various groups in homogeneous subsets are as follows:

- Sample size of Harmonic Mean = 96.320.
- The size of the groups is unequal. The harmonic mean of the group sizes is used. There is no guarantee of Type I error levels.

In the homogeneous subset table shows that all the hotels are in the same subset, it means there is no difference.

Means Plots

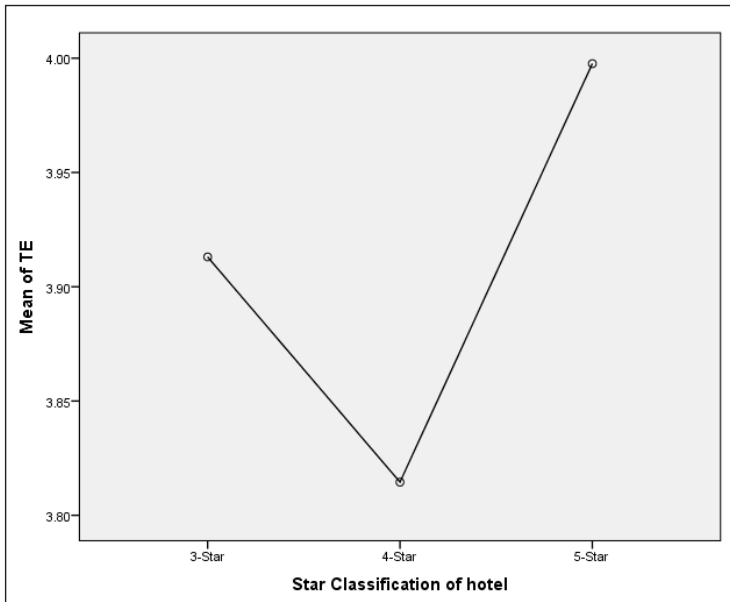


Fig. 3: The Mean Value of the Three Types of Hotels

The above graph shows the mean value of the three types of hotels for technology.

Hypothesis 4

H_4 - *There is a significant difference between three-star, four star and five-star hotels with respect to inventory control on environment sustainability.*

Statistical Analysis

Table 4: Statistical Analysis of Environment Sustainability

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
3-Star	92	4.0625	0.89383	0.09319	3.8774	4.2476	1	5
4-Star	93	4.0349	0.84827	0.08796	3.8602	4.2096	2	5
5-Star	105	4.0929	0.92134	0.08991	3.9146	4.2712	1	5
Total	290	4.0647	0.88695	0.05208	3.9621	4.1672	1	5
<i>Test of Homogeneity of Variances</i>								
Levene Statistic			df1	df2	Sig.			
0.509			2	287	0.602			
<i>ANOVA</i>								
			Sum of Squares	df	Mean Square	F	Sig.	
Between Groups			0.166	2	0.083	0.105	0.9	
Within Groups			227.184	287	0.792			
Total			227.35	289				
<i>Homogeneous Subsets</i>								
Star Classification of Hotel			N	(Subset for alpha = 0.05) 1				
4-Star			93	4.0349				
3-Star			92	4.0625				
5-Star			105	4.0929				
Sig.				0.894				

The significant value of test of homogeneity of variances is $0.177 > 0.05$. It means it satisfies the condition of ANOVA. The significant value of ANOVA table is $0.900 > 0.05$, means there is no significant difference in three types of hotels with respect to environment sustainability. Hence, H_4 is rejected.

Mean values for various groups in homogeneous subsets are as follows:

- Sample size of Harmonic Mean = 96.320.
- The size of the groups is unequal. The harmonic mean of the group sizes is used. There is no guarantee of Type I error levels.

In the homogeneous subset table shows that all the hotels are in the same subset, it means there is no difference.

Means Plots

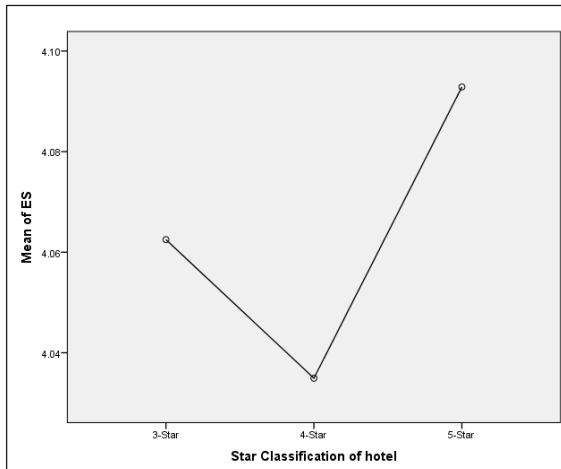


Fig. 4: The Mean Value of Hotels for Environment Sustainability

Findings

The inventory management cycle involves various stages such as budgeting, purchasing, storing, distribution, operations, and controls. This study examines the inventory management practices in three different categories of hotels, namely, five-star, four-star, and three-star hotels. The results show that there is no significant difference in inventory management practices among these hotels, irrespective of their star category.

The stock control process can have an impact on housekeeping operations, which may vary according to the type of hotel. However, this study suggests no significant difference in the impact of control on inventory on the housekeeping performance related to operations of three different categories

of hotels.

Technology-based inventory procedures can affect the efficiency of stock control. The findings reveal that there is no significant difference in the efficiency of inventory management practices between three-star, four-star, and five-star hotels, considering the application of technology.

The implementation of measures of inventory control has enough potential to positively impact environmental sustainability. The study's findings suggest that there exists a noteworthy distinction among hotels with three-star, four-star, and five-star ratings in terms of the influence of inventory control on environmental sustainability.

Conclusion

The goal of this study is to share the results of a poll that was given to 290 people who work at hotels with three, four, or five stars. SPSS 22.0 software was used to analyse data that had been collected. In the research process, both inferential and descriptive statistical methods were used. Based on the results of the numeric data analysis, we can conclude that there is a strong relation between inventory management and the practical success of cleaning in areas like technology and sustainability of the environment.

The study used a One-Way ANOVA to check if there were statistically significant differences between the different types of hotels in inventory management, cleaning practical performance, technology, and environmental sustainability. The findings of the study show that there is no significant difference in terms of statistics between the different types of hotels and the above factors. The results of the data analysis which is quantitative in nature and the results of the data analysis which is qualitative in nature were found to be the same. No matter how many stars a hotel has, the study suggests there is a relation between inventory management and different parts of hotel business and sustainability.

This implies the hotels need to develop a robust system of inventory management which should be technologically advanced, user friendly and sustainable. This system can be applied across different category of hotels as the inventory management system has no impact of the above factors with respect to category of hotels.

References

- Abdi, H., & Williams, L. J. (2010). Tukey's honestly significant difference (HSD) test. *Encyclopedia of Research Design*, 3(1), 1-5.
- Abuya, M. B., & Shale, N. I. (2018). Role of inventory management practices on the performance of the hospitality industry in Kenya. *Strategic Journal of Business & Change Management*, 5(2), 1649-1673. Retrieved from www.strategicjournals.com
- Almufleh, N. M., & Alkhatib, S. F. (2023). The impact of supply chain management practices on the operational performance of 5-star hotels operating in Jordan. *Jordan Journal of Business Administration*, 19(1), 47-66. doi:<https://doi.org/10.35516/jjba.v19i1.741>
- Cuevas, A., Febrero, M., & Fraiman, R. (2004). An Anova test for functional data. *Computational Statistics and Data Analysis*, 47(1), 111-122.
- Dearnley, C. (2005). A reflection on the use of semi-structured interviews. *Nurse Researcher*, 13(1).
- Fang, X., & Chen, H.-C. (2022). Using vendor management inventory system for goods inventory management in IoT manufacturing. *Enterprise Information Systems*, 16(7), 1885743. doi:<https://doi.org/10.1080/17517575.2021.1885743>
- Glass, G. V. (1966). Testing homogeneity of variances. *American Educational Research Journal*, 3(3), 187-190.
- Guarin, T., & Joanna, M. (2016). Housekeeping management practices and standards of selected hotels and restaurants of Ilocos Sur, Philippines. *International Journal of Business Management & Research (IJBMR)*, 6(3), 97-104. Retrieved from www.tjprc.org
- John, N. E., Etim, J. J., & Ime, T. U. (2015). Inventory management practices and operational performance of flour milling firms in Lagos, Nigeria. *International Journal of Supply and Operations Management*, 1(4), 392-406. Retrieved from www.ijson.com

- Kagnicioglu, C. H., & Mogol Sever, M. (2019). A new information system for inventory management in hospitality industry. *Journal of Business Research - Turk*, 11(1), 64-71. doi:<https://doi.org/10.20491/isarder.2019.582>
- Mensah, I. (2014). Different shades of green: Environmental management in hotels in Accra. *International Journal of Tourism Research*, 16(5), 450-461. doi:<https://doi.org/10.1002/jtr.1939>
- Nwaiku, M. S., & Ejechi, J. O. (2022). Inventory management practices and organizational productivity in Nigerian manufacturing firms. *South Asian Journal of Marketing & Management Research*, 12(6and7), 1-13. doi:<https://doi.org/10.5958/2249-877x.2022.00018.2>
- Sheakh, T. (2018). A study of inventory management system case study software testing and quality assurance, information security and cryptography and network security view project forecasting and prediction of air pollutants concentrates using machine learning techniques. *Jour of Adv Research in Dynamical & Control Systems*, 10. Retrieved from <https://www.researchgate.net/publication/327793184>
- Singh, A., Rasania, S. K., & Barua, K. (2022). Inventory control: Its principles and application. *Indian Journal of Community Health*, 34(1), 14-19. doi:<https://doi.org/10.47203/IJCH.2022.v34i01.004>
- Sunday, O., & E. Joseph, E. (2017). Inventory management and SMEs profitability: A study of furniture manufacturing, wholesale and eatery industry in Delta State, Nigeria. *Journal of Finance and Accounting*, 5(3), 75-79. doi:<https://doi.org/10.12691/jfa-5-3-1>
- Ukabuilu, E. N. (2018). Examination of various stock control techniques in selected hotels in Imo State. In *An International Peer-Reviewed Journal* (vol. 33). Retrieved from www.iiste.org
- Van Der Walt, A., & Bean, W. L. (2022). Inventory management for the in-flight catering industry: A case of uncertain demand and product substitutability. *Computers and Industrial Engineering*, 165. doi:<https://doi.org/10.1016/j.cie.2021.107914>
- Ziukov, S. (2015). A literature review on models of inventory management under uncertainty. *Business Systems & Economics*, 5(1), 26. doi:<https://doi.org/10.13165/vse-15-5-1-03>