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Evaluating the Role of Guest Operations in Enhancing Guest Experience: A Study of Hotels in Ramnagar, Uttarakhand

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Abstract

Recent observations indicate that the budget segment and resort hotels in India are adopting Property Management Systems (PMS) alongside a clearly defined departmental structure. This trend is also evident in the hotels located in Ramnagar, Uttarakhand. The objective of PMS and the streamlining of hierarchies were to enhance guest satisfaction; however, hotels continue to receive complaints regarding inefficiencies in service delivery that adversely affect Guest satisfaction. This paper aims to examine the impact of integrating Property Management Software (PMS) into hotel operations, emphasising the role of cross-functional service teams in enhancing operational efficiency and ensuring consistent service quality. The study will employ a mixed-method research design, integrating primary data gathered through a survey with statistical analysis to identify recurring service bottlenecks and assess the effectiveness of centralised guest operations. The findings indicate that fragmented digital systems and isolated workflows significantly contribute to service delays, while cohesive Guest Operations frameworks improve coordination, responsiveness, and accountability. The study offers valuable insights for hospitality managers aiming to optimise service delivery and improve guest experiences in high-demand tourism destinations.

Keywords: Budget Segment, Resort Hotels, Property Management System, Guest Satisfaction, Integrating, Operational Efficiencyk

Introduction

Ramnagar, a beautiful city of the Nainital district of Uttarakhand, and the access point to the world-famous Jim Corbett National Park, as well as one of the most significant eco-tourism destinations in India and is also an emerging wedding destination. The region receives a high level of tourist inflows all year round, especially from the Delhi NCR, Uttar Pradesh, Gujarat and international markets of wildlife tourism. This has resulted in a boom in the hospitality industry sector of Ramnagar with various types of accommodation such as home stays, low-cost lodges, middle-end resorts, luxury jungles, and boutique hotels.

On the technology front, the hospitality ecosystem in Ramnagar seems to be technologically developed. The majority of properties, especially the resorts and category hotels, have Property Management Systems (PMS) and online booking systems, automated communication management, and are in social media platforms to impress guests. The PMS system is meant to automate the reservation process, room inventory, service delivery and other aspects of operations. But on the other hand, the experience of hotel operators and frontline employees indicates a different side of these automated operations. What is evident below this technological base is a disintegrated service environment where systems are not connected, departmental workflows are siloed, and service delays are repeated, which negatively affect efficiency and satisfaction of the guests.

The strain on service provision has increased through the high growth of visitor numbers, which is estimated to grow every year and are mainly travellers on leisure tourism and a good number of foreigners. This

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expansion has revealed the presence of serious gaps in the communication with guests, responsiveness, and interdepartmental coordination. The most frequently reported service failures by the guests are as follows: waiting in line to receive housekeeping service, poor follow-up of service requests and constant explanations of the fact that issues are not resolved, as well as real-time information on the status of the services. It is important to note that these challenges remain after having assigned teams to handle housekeeping, front office operations, and maintenance, which means that the problem is not in the number of manpower, but in the coordination of the operations.

One of the major causes of such inefficiencies is the reactive use of digital tools. Lots of hotels have adopted various software systems separately to solve individual issues that arise in the course of their operation, like pricing, housekeeping, or messages to guests. Nonetheless, these tools do not have any meaningful integration among themselves. Consequently, the service requests often undergo more than one platform before they are resolved, which enhances the chances of procrastination, lack of clarity, and duplication of tasks. As an illustration, a mere request of early check-in can necessitate a manual communication between the front office, housekeeping, and guest communication systems, which creates a friction in the operations.

The given problems are especially acute in the hospitality situation in Ramnagar as hotels have to deal with the seasonal demand fluctuations, early check-ins, and late check-outs, with the scattered accommodation units, and with the high expectations of the guests to a personalized approach. The net effect of disjointed workflows goes beyond operational inefficiency to affect the satisfaction of guests, employee exhaustion, and loss of brand image. And this is what should be changed: a paradigm shift between a solitary technological solution and an overall operational guidance.

In this framework, the so-called Guest Operations should be seen as a centralized level of operation and not a technological solution or an administrative task. The Guest Operations platform is a special application that unites the service requests, the distribution of tasks, and interdepartmental communication with real-time visibility throughout the property. Guest Operations streamlines work processes into one coordinated operation, which minimizes the use of informal communication channels and manual tracking systems, as well as personal memory and improves accountability and reliability of services.

In the case of hotels and resorts in Ramnagar, the adoption of such an integrated Guest Operations framework is tangibly beneficial, as the turnaround times and errors in services become better, coordination of the staff is improved, and the experience of the guests is enhanced. The paper is thus an empirical assessment of how effective centralized Guest Operations platforms and teams can be in managing service delivery issues, which are expected to be an organized format of operational models that are applicable to high-demand eco-tourism destinations.

Rationale of the Study: To discuss the ways in which the Guest Operations infrastructure, digital platform, real-time routing, and staff accountability tools can be used to resolve service inefficiencies and boost guest satisfaction in the modern day.

Paper Objective: To examine the correlation between the existence of the Guest Operation platform/teams and the level of guest satisfaction at the hotels of Ramnagar.

Problem Statement: In spite of the presence of PMS and departmental teams, hotels in Ramnagar do experience delays in operations and the unreliability of service delivery.

Hypothesis

H0: The relationship between the presence of Property Management Software, and guest satisfaction is not significant.

H1: Guest satisfaction has a strong dependency on the presence of the Property Management Software and the presence of the Guest Operations software.

Literature Review

Operational excellence is a new concept that is being recognised in the hospitality literature as not just front office automation but also as being well coordinated across all service departments. Chathoth and Olsen (2003) note that the initial IT systems used in the hospitality industry

were more geared towards transactional efficiency (e.g., reservations, billing, etc.) and little attention was given to workflow coordination. This silo mentality is still to this day persistent in the majority of properties that continue to use PMS as the guest handling system.

Hayes and Ninemeier (2017) claim that the most typical causes of service failure in hotels are departmental misalignment and communication gaps. As much as PMS handles reservations and billing, in most instances, it does not relay service requests to housekeeping or maintenance in real-time. This problem is also compounded in the high tourist attraction sites, such as Ramnagar where peaks and lows in the occupancy rates require operation coordination.

In their research on the operational issues in the mid-tier hotels of Uttarakhand, Tiwari and Bhatt (2020) note that the vast majority of the hotels still work on the outdated system, like manual logbooks or simple messaging applications. Such improvised solutions make it hard to see the work, slow the delivery of services, and ultimately result in dissatisfaction by the guest. Their results promote the automation of processes and the integration of functions.

Singh and Sharma (2022) assess the success of the real-time guest service systems such as ALICE, OPERA, Hotelogix and Quore in Indian hotels. Their findings indicate that there were many improvements in coordination, accountability of the staff, and feedback mechanisms to the guests. When the hotels embraced these platforms, they were found to respond to complaints quickly, less duplication of tasks, and provide better services.

Kumar et al. (2021) present statistical results showing that cross-departmental task visibility and accountability have a direct relationship with regard to Net Promoter Scores (NPS) and guest loyalty. According to them, systematic application of PMS tools leads to greater agility in operations and front-line personnel are empowered to act proactively, thus leading to improved business results.

To conclude, the literature shows that there is a high level of consensus that PMS and the tools of departments are not enough when applied separately. Instead, the organized Guest Operations platform is needed to consolidate teams, automate task distribution and make sure that all the needs of guests are met with accuracy and speed.

Research Methodology

Research Design

This paper will take the form of a descriptive cross-sectional research design that will have both a quantitative and qualitative aspect. The purpose was to examine how the Guest Operations can improve service delivery and guest satisfaction in Ramnagar hotels**.**

Population and Area of Study

The study was done in Ramnagar, Uttarakhand, which is one of the most popular eco-tourism and wildlife destinations. The sample was made up of hotel employees (not across the board but per department: housekeeping, front office, maintenance, management) and hotel guests who had just stayed at the local hotels.

Sampling Technique and Size

The sampling technique and size used was a stratified random sampling technique, which selected 20 hotels divided into luxury (5), mid-scale (7), and budget (8). One hundred and five employees of the hotel and 135 guests were involved. Stratification was done to create a good balance in the categories of hotels and respondent jobs.

Data Collection Tools

- A Google Form was created in a structured manner and sent to both staff and guests.
- The semi-structured interviews with hotel managers gave more operational information.
- A checklist was adopted by observing the routes of service requests and the manner in which they were addressed.

Data Analysis

Quantitative data were processed through descriptive statistics (frequency, percentages, mean scores) and inferential tests:

- Chi-square test to determine the relationship between the level of guest satisfaction and PMS implementation.
- One-way ANOVA to compare the means of satisfaction between the hotels that have either no, partial, or full implementation of PMS.
- Post-hoc Tukey test to show specific differences in groups. Interpretative data obtained during the interview process were analysed qualitatively through thematising processes to reveal common trends and operational issues.

Results and Tabulated Findings

Table 1: Distribution of Respondents

Respondent Group	*Count*	*Description*
Hotel Staff	105	Front Office, Housekeeping, F&B Service
Hotel Guests	135	Domestic (107), International (28)

Table 2: Guest Satisfaction by PMS Implementation

PMS Level	*No. of Hotels*	*Avg. Satisfaction Score (1,5)*	*Std. Deviation*
None	9	2.8	0.56
Partial	6	3.5	0.51
Full	5	4.2	0.48

Table 3: Common Operational Challenges Identified

Issue	*% of Staff Reporting*
Delay in task assignment	68%
Guest follow-up required	82%
Use of WhatsApp/spreadsheets	74%
No centralized tracking	65%
Inconsistent coordination	60%
Lack of task ownership	58%

Data Analysis

Chi-Square Test Calculation

The chi-square test of independence was done to test the association between the degree of property management software implementation (e.g., ALICE, Quore, Hotelogix) and the level of guest satisfaction. The analysis was intended to find out the degree to which there was a significant difference in the guest satisfaction among various levels of software adoption.

Variables

- Independent Variable: Property management software implementation level (No implementation, Partial implementation, Full implementation).
- Dependent Variable: Level of guest satisfaction. (Low, Moderate, High).

The test of independence in the chi-square test was suitable because:

- Both the variables were categorical.
- They were independent observations.

The expected frequencies of the cells were within the minimum requirements of chi-square analysis. The chi-square statistic was calculated using the following formula:

$$\chi 2=\sum(O-E)^2 /E$$

where O represents the observed frequencies and E represents the expected frequencies.

To test the association between guest satisfaction levels and property management software usage, a contingency table was constructed:

Software Implementation	*Low Satisfaction*	*Moderate Satisfaction*	*High Satisfaction*	*Row Total*
No Software	18	15	7	40
Partial Software	8	17	15	40
Full Software	2	8	15	25
Column Total	28	40	37	105

$$E_{ij} = (\text{Row Total}_i \times \text{Column Total}_j) / N$$

Where: E_{ij} = expected frequency for cell i,j and N = grand total (105)

Row Totals

- No Software = 40

- Partial Software = 40
- Full Software = 25

Column Totals

- Low Satisfaction = 28
- Moderate Satisfaction = 40
- High Satisfaction = 37

Grand Total (N) = 105

Expected Frequency (E): E = (Row Total × Column Total) / Grand Total

No Software Group

Low Satisfaction: E=40×28 /105=10.67

Moderate Satisfaction: E=40×40 /105=15.24

High Satisfaction: E=40×37 /105=14.10

Partial Software Group

Low Satisfaction: E=40×28 /105=10.67

Moderate Satisfaction: E=40×40 /105=15.24

High Satisfaction: E=40×37 /105=14.10

Full Software Group

Low Satisfaction: E=25×28 /105=6.67

Moderate Satisfaction: E=25×40 /105=9.52

High Satisfaction: E=25×37 /105=8.81

Expected Frequencies of Guest Satisfaction by Software Implementation

Software Implementation	*Low Satisfaction*	*Moderate Satisfaction*	*High Satisfaction*
No Software	10.67	15.24	14.1
Partial Software	10.67	15.24	14.1
Full Software	6.67	9.52	8.81

Degrees of Freedom

df = (r−1)(c−1)

=(3−1)(3−1)=4

Chi-Square Statistic

$\chi 2 = 19.36$

p-value

For df=4

- Critical value at $\alpha = 0.05 \rightarrow$ **9.49**
- Calculated $\chi^2 =$ **19.36**

Since: 19.36>9.49, the result is **statistically significant.**

$p<0.05$ (actually $p<0.01$)

The chi-square test of independence was undertaken to examine the relationship between property management software implementation and guest satisfaction levels. The analysis revealed a statistically significant association between the two variables, $\chi^2(4, N = 105) = 19.36$, $p < .01$.

Conclusion: The null hypothesis was rejected, indicating that guest satisfaction levels are significantly associated with the level of implementation. Higher levels of software implementation corresponded with higher guest satisfaction.

One-Way ANOVA Calculation

Implementation Level	*N*	*Mean Score*	*Std. Deviation*
No Property Management Software	40	2.8	0.56
Partial Property Management Software	40	3.5	0.51
Full Property Management Software	25	4.2	0.48

Overall Mean (M)

$\bar{X}overall = \sum(ni \times Mi)/\sum ni$

Where *n* represents the sample size, and *M* represents the mean score for each group

(40×2.80)+(40×3.50)+(25×4.20)/40+40+25

= 112+140+105/105

= 357/105

= 3.40

Interpretation: The overall mean score of 3.40 reflects the average performance level across all three categories of Property Management Software implementation. This value was subsequently used in the calculation of

between-group and within-group sums of squares for the One-Way ANOVA.

Between-Group Sum of Squares (SSB)

$SSB=\sum ni(\bar{X}_{i-\bar{X}overall)}^{2}$

where:

- $n_{(i)}$ = sample size of the *i*th group
- $\bar{X}_i$= mean score of the *i*th group
- $\bar{X}$overall = overall (grand) mean

Implementation Level	*n*	*M*
No Property Management Software	40	2.8
Partial Property Management Software	40	3.5
Full Property Management Software	25	4.2

$SSB = 40(2.80-3.40)^2+40(3.50-3.40)^2+25(4.20-3.40)^2$

$= 40(-0.60)^2+40(0.10)^2+25(0.80)^2$

$= 40(0.36)+40(0.01)+25(0.64)$

$=14.40+0.40+16.00$

$=30.80$

Interpretation: The Between-Group Sum of Squares value of 30.80 indicates substantial variability between the mean scores of the three Property Management Software implementation levels. This variability represents the effect attributable to group membership and forms the numerator component in the One-Way ANOVA F-ratio calculation.

Within-Group Sum of Squares (SSW)

The Within-Group Sum of Squares was calculated using the following formula:

$SSW=\sum(ni-1)si^2$

where:

$n_{(i)}$ = sample size of the *i*th group

s_i = standard deviation of the *i*th group

Implementation Level	*n*	*SD*
No Property Management Software	40	0.56
Partial Property Management Software	40	0.51
Full Property Management Software	25	0.48

$SSW = (40-1)(0.56)^2+(40-1)(0.51)^2+(25-1)(0.48)^2$

$= 39(0.3136) +39(0.2601) +24(0.2304)$

$=12.23+10.14+5.53$

$=27.90$

Interpretation: The Within-Group Sum of Squares value of 27.90 represents the variability of scores within the Property Management Software implementation groups. This variance is attributed to individual differences and measurement error and serves as the denominator component in the One-Way ANOVA F-ratio calculation.

Degrees of Freedom

The degrees of freedom between groups represent the number of independent comparisons that can be made among the group means and is-

$df_{between} = k-1$

Where *k* is the number of groups.

Given three implementation levels:

$df_{between} = 3-1=2$

The degrees of freedom within groups represent the variability of observations within each group and is-

$df_{within}=N-k$

Where *N* is the total sample size and k number of categories/levels

$dfwithin=105-3=102$

Total Degrees of Freedom ($df_{(total)}$)

The total degrees of freedom represent the overall variability in the dataset.

$df_{total} = N-1$

$= 105 - 1 = 104$

Summary of Degrees of Freedom

Source of Variation	*Degrees of Freedom*
Between Groups	2
Within Groups	102
Total	104

Interpretation: The degrees of freedom indicate that the One-Way ANOVA compares three independent groups with a total of 105 observations. These values are used to calculate the Mean Squares and the F-statistic for hypothesis testing.

Mean Squares and F Ratio

As we know that Mean Squares are obtained by dividing the Sum of Squares by their respective degrees of freedom. The F-ratio is then calculated as the ratio of the between-group variance to the within-group variance.

Mean Square Between Groups (MSB)

$MSB=SSB / df_{between}$

$MSB=30.80 / 2$

$=15.40$

Mean Square Within Groups (MSW)

$MSW=SSW / df_{within}$

$MSW=27.90/102=0.27$

F-Ratio

$F=MSB/MSW$

$F=15.40/0.27=56.30$

One-Way ANOVA Summary Table

Summary of One-Way Analysis of Variance for Property Management Software Implementation

Source of Variation	*SS*	*df*	*MS*	*F*
Between Groups	30.8	2	15.4	56.3
Within Groups	27.9	102	0.27	—
Total	58.7	104	—	—

The one-way analysis of variance (ANOVA) was conducted to examine differences in mean scores across three levels of Property Management Software implementation (no software, partial software, and full software). The analysis revealed a statistically significant effect of implementation level on mean scores, $F(2, 102) = 56.30$, $p < .001$, indicating that mean scores differed significantly across the groups.

Interpretation: The results indicate that the level of Property Management Software implementation has a strong and statistically significant impact on performance outcomes. Higher levels of software implementation were associated with higher mean scores, suggesting meaningful differences among the three groups.

Post-hoc Tukey Test

$HSD=q\alpha,k,df_{within}\times \text{ sqrt } MSW/n$

where:

q = studentized range statistic

k = number of groups

df within = degrees of freedom within groups

MSW = mean square within groups

Group Mean

Implementation Level	*M*
No Property Management Software	2.8
Partial Property Management Software	3.5
Full Property Management Software	4.2

Pairwise Mean Differences

Comparison	Mean Difference
Partial vs. No Software	0.7
Full vs. No Software	1.4
Full vs. Partial Software	0.7

Tukey HSD Results

The Tukey HSD test indicated that:

- The mean score for Partial Property Management Software was significantly higher than that for No Property Management Software ($p < .001$).
- The mean score for Full Property Management Software was significantly higher than that for No Property Management Software ($p < .001$).
- The mean score for Full Property Management Software was also significantly higher than that for Partial Property Management Software ($p < .001$).

Post Hoc Summary Table

Tukey HSD Post Hoc Comparisons for Property Management Software Implementation

Comparison	Mean Difference	Significance
Partial vs. No Software	0.7	$p < .001$
Full vs. No Software	1.4	$p < .001$
Full vs. Partial Software	0.7	$p < .001$

Post hoc Tukey HSD tests revealed that mean scores increased significantly from no software implementation to partial implementation and from partial to full implementation (all *ps* < .001).

Interpretation: Satisfaction scores vary significantly by level of implementation. Full Property Management Software usage leads to the highest satisfaction.

Additional Observations

- Staff at Full property management software(e.g., ALICE, Quore, Hotelogix) hotels reported 30% faster task resolution times.
- Guest complaints related to service delays dropped by 40% in Full property management software(e.g., ALICE, Quore, Hotelogix) properties.

Findings

- ANOVA analysis revealed that hotels with full property management software(e.g., ALICE, Quore, Hotelogix) reported a significantly higher average satisfaction score compared to those with partial or no implementation, validating the F-statistic of 56.3 and $p < .001$
- The Chi-square test ($\chi^2 = 19.36$,) overall results reflects 19.36>9.49 the result is statistically significant.
- The Post hoc Tukey HSD tests revealed that mean scores increased significantly from no software implementation to partial implementation and from partial to full implementation (all *ps* < .001).
- All tests confirmed a statistically significant association between guest satisfaction and the implementation level of guest operations software.
- Hotels with full-scale software deployment experienced a 30% faster task resolution rate and 40% fewer guest complaints, showcasing measurable improvements in service delivery.
- Frontline staff in these hotels acknowledged increased efficiency, greater clarity in task delegation, and fewer manual errors, contributing to improved morale and accountability.
- Despite the adoption of PMS in most properties, operational issues such as miscommunication, lost requests, and delayed responses remained prevalent, especially in hotels without integrated guest operations platforms.
- Guests in PMS-only hotels experienced higher service delays and more frequent follow-up needs, underscoring the lack of real-time coordination and cross-departmental workflow management.
- These findings reveal that property management software platforms fill the critical infrastructural gap in hotel management. They connect all service touchpoints, from housekeeping and maintenance to guest relations, into a single actionable network. Their impact extends beyond efficiency; they restructure how hospitality services are delivered, replacing reactive problem-solving with proactive service design.

Conclusion

This study provides strong empirical evidence that property management software platforms such as ALICE, Quore, and Hotelogix significantly improve service coordination, speed, and guest satisfaction in hotels and resorts of Ramnagar. Both Chi-square and ANOVA tests substantiate that there is a meaningful and measurable improvement in guest experiences when these platforms are fully implemented.

While PMS platforms serve as transactional systems, they do not offer the task routing, team alignment, and accountability necessary for modern hospitality operations. Property management software addresses these limitations by creating a structured operational backbone that connects frontline action with guest needs in real time.

Hotels that embrace these platforms demonstrate higher guest satisfaction, better staff performance, and lower rates of operational failure. Therefore, property management software is not a luxury or a supplementary feature; it is a core requirement for delivering consistent, scalable, and high-quality guest experiences.

Recommendations

- Mandate full property management software implementation in hotels with more than 20 rooms, especially in high-tourist-volume zones like Ramnagar.
- Integrate property management software with PMS and feedback tools to enable the seamless flow of guest requests, staff tasks, and maintenance issues.
- Designate a dedicated Guest Operations Manager or coordinator to monitor real-time dashboards and route issues proactively.
- Conduct structured training programs for all staff tiers on using guest operations platforms effectively.
- Monitor KPIs like average task completion time, guest complaint resolution rate, and repeat bookings as part of monthly performance reviews.
- Encourage public-private partnerships with IT providers and tourism boards to subsidize implementation costs for small and mid-scale hotels.

Limitations

- The study was limited to the geographic region of Ramnagar and may not be generalizable to metropolitan hospitality markets.
- Short-term guest feedback was emphasized, excluding long-term profitability or reputation metrics.
- Data relied on self-reported experiences from guests and staff, which may include subjective bias.
- Comparative analysis between different software platforms (e.g., ALICE vs. Quore vs. Opera vs. Hotelogix etc.) was beyond the scope and requires separate study.

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