ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue VI, June 2026

Analysis of Hotel Bookings in Terms of Occupancy and Sales across Seasons and Events, and the Development of a Proposed Smart-Pricing Mechanism

Wadah Mohammed Alhag, Dr. Ammar Mohamed Abdo

Faculty of Computer Science & Information Technology, Alzaiem Alazhari University, Sudan

DOI: https://doi.org/10.51583/IJLTEMAS.2026.150600229

Received: 15 July 2026; Accepted: 20 July 2026; Published: 27 July 2026

ABSTRACT

The hospitality sector increasingly relies on operational data to guide pricing, yet many operators still raise or lower prices uniformly across all units. This paper analyses hotel bookings in terms of occupancy and sales across seasons and events, and develops a proposed unit-level smart-pricing and selective-marketing mechanism. The study follows a descriptive–analytical approach using actual operational data for 95 residential hotel units operated by a hospitality company in Riyadh and Al-Madinah, Saudi Arabia, covering January to June 2026 (181 days, 9,028 occupied nights, SAR 4.22 million in confirmed sales), organised through an interactive web dashboard that is publicly accessible online. Independent-samples (Welch) t-tests were used to test the significance of the observed differences. The results show clear monthly variation, a dominant Airbnb channel, and — most importantly — that the occupancy–sales relationship is not directly proportional but is mediated by the average daily rate (ADR): some units combine low occupancy with high sales, while others show the opposite. The effect of Ramadan differs sharply by city, with occupancy and rate rising in Al-Madinah but falling in Riyadh; weekends significantly outperform weekdays; and the cancellation rate reaches 10.3%. The study concludes with a set of quantified, calibratable pricing rules that link each pricing decision to the event, season, city, day type, channel, and the actual performance of the individual unit.

Keywords: Revenue management; Average daily rate; Ramadan demand; Cancellation rate; Interactive web dashboard.

INTRODUCTION

Occupancy and sales are the two most important indicators for evaluating the operational and commercial performance of hospitality units, because they reflect both the efficiency of capacity utilisation and the ability to generate revenue across different periods. In the modern hospitality environment, decisions on pricing, marketing, and unit allocation no longer rest on operational experience or personal judgement alone; they increasingly rely on analysing daily booking data and linking it to influential factors such as seasons, events, day type, sales channels, booking status, and stay type. Revenue management is a mature discipline with well-documented conceptual foundations [1] and repeated critical reviews of its methods and scope [2], [3].

The importance of such analysis is clearest during periods that witness active events or seasons, where the effect of demand is not uniform across all units. Some units benefit from their proximity to an event location or their suitability to the nature of demand in a particular season, while others do not benefit to the same degree. Hence there emerges a need to move beyond the idea of raising prices uniformly across all units toward a more precise model based on analysing the actual performance of each unit and the extent to which it benefits from seasons and events.

Accordingly, this paper analyses hotel booking data during the period from January to June 2026. The study pursues the following objectives:

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue VI, June 2026

1. To analyse occupancy and sales patterns during the study period and measure the impact of seasons and events on them compared to ordinary days.
2. To analyse the performance of the different sales channels in terms of the number of bookings and the volume of sales.
3. To study the effect of cancelled bookings on operational and commercial performance.
4. To study the variation in the response of individual units to seasons and events.
5. To develop a proposed mechanism for smart pricing and selective marketing in which prices and marketing effort are adjusted according to each unit's response to demand, season, and event.
6. To achieve these objectives, the study seeks to answer the following questions:
7. What is the nature of occupancy and sales patterns during the study period?
8. What is the impact of seasons and events on occupancy and sales compared to ordinary days?
9. Does the contribution of sales channels to occupancy and sales differ across seasons and events?
10. Does the response of individual units to seasons and events differ in terms of performance?
11. How can a proposed mechanism for smart pricing and selective marketing be developed from booking data and operational indicators?

Problem Statement

Hospitality establishments currently possess a large amount of daily operational data related to bookings — stay dates, number of nights, sales channels, booking status, occupancy levels, and sales — in addition to the effect of seasons and events on demand movement. Despite the importance of this data, its utilisation in many cases remains confined to operational follow-up or the descriptive presentation of indicators, without transforming it into analytical knowledge that supports managerial and pricing decisions.

The core problem lies in the fact that pricing decisions are in some cases taken in a general and uniform manner across all units, without considering the actual differences between units in terms of their responsiveness to the season, the event, the level of demand, proximity to attraction areas, or the nature of the channel used. This may lead to less accurate decisions, such as raising the prices of all units during a particular event period, whereas only some units actually benefit from that event to a greater degree than others, while other units may need marketing support rather than a price increase.

Hence there emerges a need for an analytical study based on actual booking data to understand the impact of seasons and events on occupancy and sales, and to determine the extent to which units differ in their response to these factors, thereby contributing to building a proposed mechanism for smart pricing and selective marketing in which the decision is made based on historical performance and expected demand rather than generalisation. The significance of addressing this problem is both scientific and applied: scientifically, it extends revenue-management analysis from the aggregate level to the unit level and couples it with a proposed mechanism; practically, it helps unit operators interpret demand patterns accurately and adopt more flexible pricing policies, improving the efficiency of unit utilisation and the quality of data-driven decisions.

Background and Related Work

The previous literature has addressed a number of topics related to hotel performance and revenue management, most notably dynamic pricing, occupancy forecasting, and the analysis of spatial factors affecting tourism performance. These topics acquire special importance in the present study because they are directly related to

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue VI, June 2026

analysing hotel bookings in terms of occupancy and sales across seasons and events, and they support the orientation toward developing a proposed mechanism for smart pricing at the level of the individual unit.

With regard to smart pricing, one study presented a proposed model for the dynamic pricing of hotel rooms using reinforcement learning, in which a pricing strategy was designed that simultaneously takes into account both profit and demand, relying on real data provided by a travel agency. The results showed that the proposed model achieved good performance in forecasting and pricing and offered a more stable reward curve compared with some other models. This benefits the present research by confirming that hotel pricing should not be fixed but can be developed based on data and indicators associated with actual demand, and that analysis results can be turned into practical pricing rules rather than uniform pricing for all units.

On the occupancy side, Ampountolas and Legg [4] relied on daily occupancy data from several hotel establishments, tested multiple models for short-term forecasting, and concluded that some simple statistical and structural models can achieve appropriate accuracy in daily forecasting. This result supports the idea of monitoring daily occupancy and booking density before making decisions to raise or lower prices. Pricing is also shaped by external and contextual factors; Blengini and Heo [5] found that exchange-rate movements influence hoteliers' pricing decisions and business performance in a small open economy, underscoring the need to ground pricing in measurable, context-aware indicators. From the perspective of fairness and price perception, Qi et al. [6] addressed perceived fairness in hotel dynamic pricing and clarified that customers do not judge price solely through its direct value but also through the justifications for the price change and the context in which it occurs, which supports the idea that smart pricing must be based on clear, interpretable indicators rather than random changes.

From the spatial-performance angle, Chiu et al. [7] indicated that tourism performance is not distributed equally among regions, and that spatial factors, accessibility, and the surrounding environment may affect operational efficiency and economic performance. Related literature on the post-pandemic period [8] showed that establishments located near transport hubs or activity centres recovered their performance faster than others. These findings directly benefit the present research because they support the idea on which its applied part is based, namely that the response to events or seasons is not identical across all units, but may differ according to location and surrounding characteristics. Therefore, the decision to raise the price should not be applied to all units generally, but only to the units that the data show to be more sensitive to, or more benefiting from, the event or season.

In general, the previous studies show that hotel performance is associated with multiple interacting factors — occupancy, demand, pricing, location, channel, and external conditions — and that effective dynamic pricing should be based on real data and measurable indicators. However, most previous studies focused on hotels or markets at an aggregate level, while applied studies that link occupancy, sales, and events on one hand with a selective decision at the level of the individual unit on the other hand are scarce. Hence, the present study comes to fill this gap by analysing actual booking data over a defined time period and linking the results to a proposed mechanism for smart pricing and selective marketing at the unit level.

METHODOLOGY

This study relies on the descriptive–analytical approach, owing to its suitability to the nature of the topic, as this approach aims to describe and analyse hotel booking data in terms of occupancy and sales across seasons and events, then to make use of the results of this analysis in developing a proposed mechanism for smart pricing and selective marketing. It is a quantitative applied study, because it relies on actual operational data related to hotel bookings and seeks to analyse performance-related indicators, then to link these indicators to the pricing decision.

The study relied on actual operational data extracted from the bookings database and organised through an interactive web dashboard [9], which is publicly accessible online. This data included the bookings table, the daily booking details, the days table, and the events table, in addition to indicators related to sales, taxes, cleaning fees, channel fees, and stay type. The population of the study comprises all hotel bookings recorded in the

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue VI, June 2026

operational database during the defined time period, including confirmed and cancelled bookings, and the data related to the different channels, events, day type, and stay patterns.

For measurement purposes, the occupancy rate was defined on a monthly basis as the ratio of the number of actually occupied nights to the number of available nights (the number of active units in the month multiplied by the number of days in the month); thus a unit booked for all the days of the month has an occupancy of 100%. The average daily rate (ADR) was computed by dividing total sales by the number of occupied nights. The computation of occupancy and sales was restricted to confirmed bookings, while cancelled bookings were treated in a separate analysis. The study data cover 95 hospitality residential units distributed across the two cities of Riyadh and Al-Madinah in Saudi Arabia, during the period from January to June 2026 (181 days). To test the significance of differences, an independent-samples (Welch) t-test was used to compare daily sales between event days and ordinary days, and to compare daily occupancy rates between Ramadan and the normal period at the level of each city. The variables of the study are classified in Table I, and Table II presents a simplified sample of the booking data that illustrates the nature of the operational variables analysed.

Table I. Classification of the Study Variables and Their Sources

Type	Variable	Definition	Source
Dependent	Occupancy rate	Occupied nights / available nights	Details table / Web dashboard
Dependent	Sales	Revenue generated from confirmed bookings	Details table / Web dashboard
Independent	Season	Period in which the nature of demand differs	Date / Days table
Independent	Event	Presence or absence of an event on a date	Events table
Independent	Day type	Ordinary day or weekend	Days table
Independent	Channel	Means through which the booking came	Bookings table
Independent	Booking status	Confirmed or cancelled	Bookings table
Independent	City	Riyadh or Al-Madinah	Bookings table

Table II. A Sample of the Study's Booking Data

Booking Code	Apartment	Stay Date	Nights	Channel	Status	Day Type	Event	Total Paid
HMA5PDE2QM	005 - Almughrizat - 2 BR	2026-01-11	3	Airbnb	confirmed	Weekday	yes	2677.20
629816967	Alwadi Masharef-6 Studio	2026-02-18	5	Agoda	confirmed	Weekday	No	1574.00

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue VI, June 2026

M17699679 59685	B9 - Nada	2026-02-09	2	Marriott	confirmed	Weekday	yes	1897.18
9695872	Apartment 3 - Almadinah	2026-01-09	4	Gathern	confirmed	Weekend	yes	3399.00
2414486002	A8 - Alnarjis	2026-03-19	3	Expedia	canceled	Weekend	No	0
112814533 3907330	D11 - Alnarjis	2026-02-12	6	ctrip	confirmed	Weekend	yes	2968.00
1970186651	Almadinah - Studio 20 A	2026-03-16	7	Agoda	canceled	Weekday	No	0

EXPERIMENTAL SETUP AND RESULTS

Across the whole study period, total confirmed sales reached about SAR 4.22 million over 9,028 occupied nights across 95 active units, with an overall occupancy of 62.2% and an average daily rate of about SAR 467. Fig. 1 and Fig. 2 show a clear variation in performance among the six months in both sales and occupancy, which reflects the changing nature of hotel demand rather than a constant level.

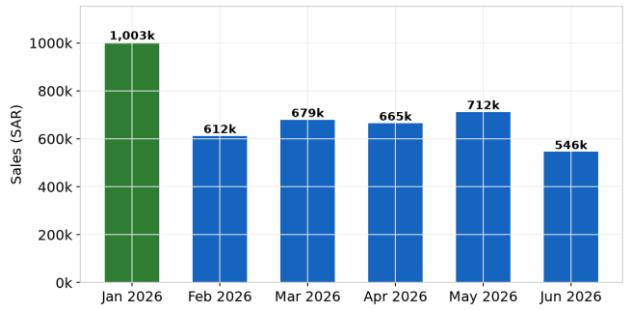

Fig. 1. Monthly sales (SAR) during January–June 2026.

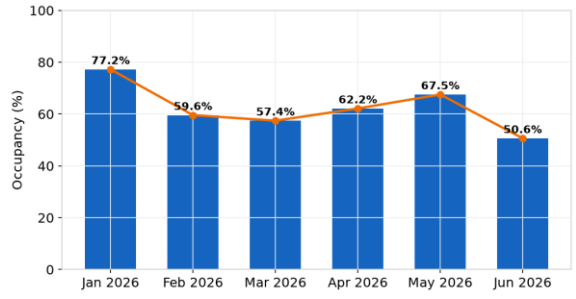

Fig. 2. Monthly occupancy rate (%) during January–June 2026.

January 2026 recorded the highest level in both occupancy and sales, with an occupancy rate of 77.2% and sales of about SAR 1,002,751, followed by May (SAR 712,178), March (SAR 679,306), April (SAR 664,991), February (SAR 612,033), and finally June (SAR 545,533); the occupancy of the remaining months ranged between 50.6% and 67.5%.

The rise in January can be explained by its association with a period that witnessed greater activity in demand owing to the presence of events and seasonal factors, whereas the relative decline in February and March coincided with the month of Ramadan, whose effect is examined in detail below.

These results indicate that hotel performance was not constant but was affected by changing temporal and operational factors, which confirms the importance of analysing the different periods independently before making any decision related to pricing or marketing.

Fig. 3 and Fig. 4 compare performance by day type. Real-event days (such as exhibitions, conferences, and official holidays) recorded the highest performance, with an average daily sales of about SAR 30,372 and an occupancy rate of 75.3%, compared with about SAR 22,292 and 61.6% on ordinary days. An independent-samples t-test confirmed that this difference in daily sales is highly statistically significant ($t = 6.05$, $p < 0.001$), which confirms that the presence of a real event is a genuinely influential factor in raising hotel demand rather than mere random variation.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue VI, June 2026

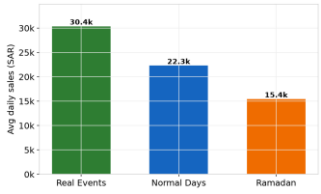

Fig. 3. Average daily sales by day type (real events / ordinary days / Ramadan).

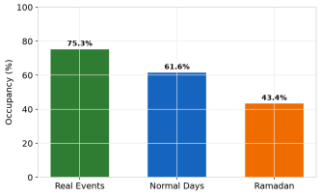

Fig. 4. Average occupancy rate by day type (real events / ordinary days / Ramadan).

It is worth noting an important observation related to the accuracy of event classification: in its initial form, the events table included the month of Ramadan (about 30 days) among the events, whereas Ramadan in fact represents a season in which the nature of demand changes rather than an event that raises it overall. Including it among events lowered the average performance of event days and masked their true effect. After separating the Ramadan days and classifying them as a distinct season, the positive effect of real events became clearly evident; at the aggregate level Ramadan days recorded the lowest performance, with an average daily sales of about SAR 15,427 and an occupancy rate not exceeding 43.4%. This treatment illustrates the importance of distinguishing between demand-stimulating events and demand-shifting seasons when analysing hotel data.

However, looking at the effect of Ramadan at the aggregate level conceals a fundamental difference between cities, as Fig. 5 shows. When units are split by city, it becomes evident that the effect of Ramadan is completely opposite between Riyadh and Al-Madinah: in Riyadh, the occupancy rate fell sharply from 68.8% in the normal period to 36.1% during Ramadan, whereas in Al-Madinah it rose from 57.2% to 67.5%. Moreover, the average daily rate in Al-Madinah increased during Ramadan from SAR 385 to SAR 499 (an increase of about 30%), while it declined slightly in Riyadh from SAR 492 to SAR 448. This is explained by the fact that Al-Madinah witnesses growing religious demand during Ramadan, as many visitors come to perform Umrah and visit the Prophet's Mosque, which raises the demand for accommodation there and makes Ramadan a demand-stimulating season rather than a demand-reducing one, unlike Riyadh. The decline in Riyadh's occupancy was highly statistically significant ($t = -20.87$, $p < 0.001$), whereas the rise in Al-Madinah's occupancy was in the positive direction but did not reach statistical significance ($p = 0.129$), which may be due to the short Ramadan window and daily occupancy volatility; nonetheless, the clear increase in the average daily rate reinforces the economic significance of this pattern.

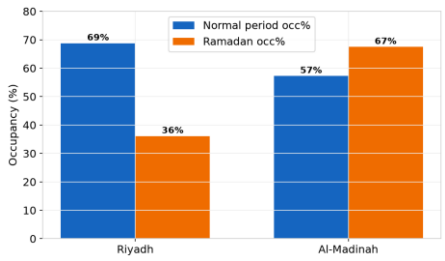

Fig. 5. Occupancy rate by city in Ramadan versus the normal period.

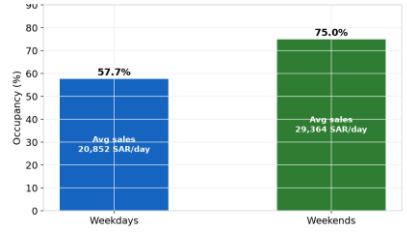

Fig. 6. Occupancy and average daily sales: weekdays versus weekends.

This result has a direct practical implication for the pricing mechanism: during Ramadan it is recommended to raise the prices of Al-Madinah units and intensify their marketing to capitalise on the increased demand and its capacity to bear a higher price, and conversely to lower the prices of Riyadh units or offer promotions to compensate for the decline in demand. In addition to events and seasons, the data showed a clear difference between weekdays and weekends, as Fig. 6 illustrates. The average occupancy on weekends reached 75.0% compared with 57.7% on weekdays, and the average daily sales on weekends were about SAR 29,364 compared with SAR 20,852 on weekdays — an increase of about 41%. This difference was highly statistically significant ($t = 6.48$, $p < 0.001$), which supports adding a weekend-specific pricing rule, so that day type becomes an independent pricing variable alongside the event, the season, and the unit's own performance.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue VI, June 2026

Fig. 7 and Fig. 8 analyse the sales channels. The results show a clear difference between channels in terms of the number of bookings and the volume of sales. The Airbnb channel recorded the highest number of bookings and the highest contribution to sales by a wide margin, capturing about 2,557 bookings and approximately SAR 3.18 million in sales, which may reflect high demand for the units offered through this channel, the strength of its presence among the target customers, and the ease of accessing and using it for booking. It is notable that the Manual-Ejar channel achieved the second-highest sales (about SAR 615 thousand) despite its small number of bookings (55 bookings), owing to its association with high-value long-stay contracts, while channels such as Booking.com, Marriott, and Direct showed lower contributions. This indicates that evaluating a channel should combine the number of bookings with their value together — and ideally the net profitability after deducting commissions and fees — rather than relying on the number of bookings alone.

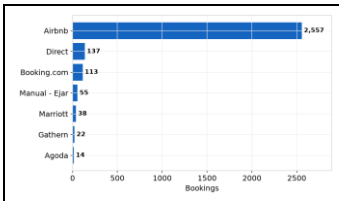

Fig. 7. Distribution of the number of bookings by sales channel.

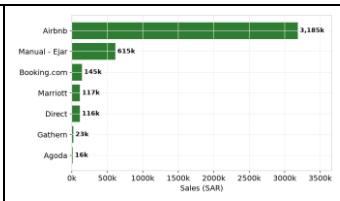

Fig. 8. Distribution of sales by sales channel.

Fig. 9 and Fig. 10 examine the performance of individual units. The figures show that there is variation between units in terms of sales, where some units appeared at a higher level than others in the revenue achieved during the study period. As for occupancy, the data showed that a number of units recorded full occupancy during the study months, which made ranking the units according to this indicator less able to reveal the differences; therefore, a representative sample of these units was presented. This result indicates that the differences between units do not always appear in occupancy alone, but may be more evident in sales, which means that some units may be similar in their level of occupancy but differ in the financial return achieved.

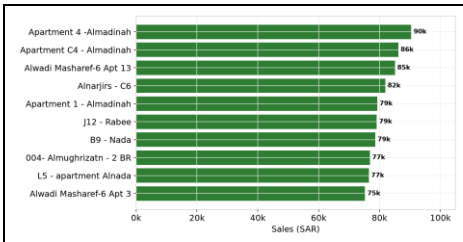

Fig. 9. Top 10 apartments by sales.

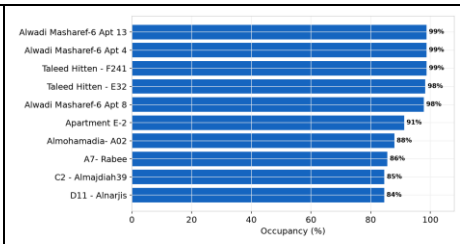

Fig. 10. A sample of the highest-occupancy apartments during the study period.

The central result of the study concerns the relationship between occupancy, sales, and the average daily rate. At first glance, it might be understood that a higher occupancy rate is necessarily matched by higher sales. However, the analysis of the actual data showed that this relationship is not directly proportional in all cases; rather, it is mediated by a fundamental factor, namely the ADR, since sales equal the product of the number of occupied nights and the average daily rate. Therefore, two units may be equal in occupancy yet differ greatly in sales according to the difference in the nightly rate. Table III presents a comparison between units representing the two opposite patterns.

Table III. Effect of the Average Daily Rate in Explaining the Occupancy–Sales Relationship (January–June 2026)

Apartment	Occupancy %	Sales (SAR)	ADR (SAR)	Pattern
Alarid - K10	45%	54,801	677	Low occupancy / high price

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue VI, June 2026

Apartment A2 - Almadinah	40%	47,736	654	Low occupancy / high price
Khawalid 09 - M02	37%	31,385	697	Low occupancy / high price
Studio C4 - Almadinah	71%	31,525	244	High occupancy / low price
Almadinah - Studio 10	76%	30,398	220	High occupancy / low price
Taleed Hitten - E32	98%	47,720	268	Near-full occupancy / low price

The first pattern consists of units with low occupancy and high sales, because their average daily rate is high; for example, the unit (Alarid - K10) recorded an occupancy of only 45%, yet it achieved sales of about SAR 54,801 because its ADR reached about SAR 677. The second pattern consists of units with high occupancy and relatively low sales, because their ADR is low; the unit (Taleed Hitten - E32) recorded near-full occupancy (98%) throughout the study period, yet its ADR did not exceed SAR 268. The comparison between the two units is striking: the sales of the first (SAR 54,801) exceed those of the second (SAR 47,720) even though its occupancy is less than half. Thus, low occupancy does not necessarily mean weak financial performance, and high occupancy does not necessarily mean high sales.

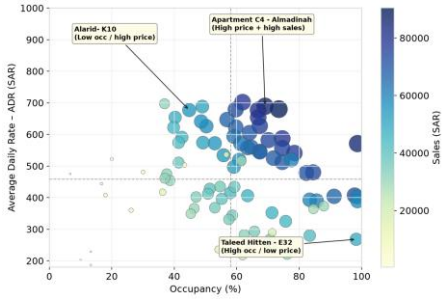

Fig. 11. Relationship between occupancy rate and ADR (bubble size represents sales volume).

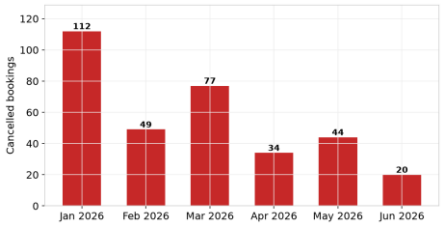

Fig. 12. Distribution of cancelled bookings across the study months.

Fig. 11 confirms that the units with high sales (the larger and darker bubbles) are not concentrated in the high-occupancy region alone, but are spread between the high-price low-occupancy units and the high-occupancy medium-price units. This confirms that occupancy alone is an insufficient indicator for evaluating a unit's performance, and that the pricing decision must be based on an integrated triad: occupancy, the average daily rate, and sales together. It is also evident that the high-occupancy low-price units represent an opportunity to improve revenue by raising the price gradually without a large effect on demand, whereas the low-occupancy high-price units may need a price review or marketing support to raise their occupancy, which reinforces the selective-pricing idea on which this study is based.

Analysing cancelled bookings, shown in Fig. 12, is an important aspect of evaluating operational performance, since cancellations reflect unrealised demand and capacity that could have been occupied. During the study period, the number of cancelled bookings reached 336, representing about 10.3% of total bookings and corresponding to about 1,064 room-nights that were not realised. Estimating these nights at the overall average daily rate, the cancellations represent a potential lost revenue of nearly SAR 497 thousand. When distributing cancellations by channel, the Booking.com channel recorded the highest number of cancellations (176) even though its number of bookings is far lower than that of Airbnb (141), which indicates a notably high cancellation rate on Booking.com. At the city level, cancellations were concentrated in Riyadh (237) compared with Al-Madinah (99). These results are useful in supporting the operational decision by reviewing the booking and cancellation policies on high-cancellation channels and in estimating actual demand after excluding bookings prone to cancellation.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue VI, June 2026

Building on these results, the study proposes a smart-pricing mechanism founded on a single principle: any price adjustment must be linked to actual indicators of performance and demand — the presence of an event, higher occupancy, strong sales, a unit's higher performance relative to others, or strong demand from a particular channel — so that pricing becomes a flexible, selective decision rather than a fixed, general one. Table IV summarises the decision logic, and Table V translates it into quantified rules benchmarked against the data (overall occupancy of about 62% and an ADR of about SAR 467).

Table IV. Decision Logic of the Proposed Smart-Pricing Mechanism

Case	**Proposed Decision**
Event present + high-performing unit	Raise the price in a studied manner
Event present + low-performing unit	Marketing support or hold the price
No event + strong demand	Limited price adjustment according to performance
No event + weak demand	Do not raise the price; focus on marketing
Strong channel such as Airbnb	Possibility of applying a more precise pricing policy
Low-performing unit during the period	Promotional support instead of a price increase

Table V. Proposed Quantified Pricing Rules

Case / Indicator	**Proposed Rule**
Occupancy > 85% and ADR below the average (SAR 467)	Raise the price by 10–15% (strong demand with pricing headroom)
Real event + high-performing unit	Raise the price by 15–20% during event days
Unit close to the event location	Priority for increase and marketing; raise 15–25%
Weekends (Thursday/Friday)	Raise the price 10–15%; market the lower-dem and weekdays
Al-Madinah units during Ramadan	Raise the price by 20–30% and intensify marketing
Riyadh units during Ramadan	Lower the price by 15–20% or offer promotions
Occupancy < 45% and ADR above the average	Review the price downward or provide marketing support
High-cancellation channel (e.g., Booking.com)	Require prepayment or a stricter cancellation policy

The rule is tied not only to the presence of an event but also to a unit's proximity to the event location; units near exhibitions, conferences, and events are more deserving of a price increase and intensified marketing than distant units, which is consistent with what the previous studies clarified about the importance of the spatial factor. Likewise, Ramadan in Al-Madinah is treated as a demand-stimulating event rather than a demand-reducing

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue VI, June 2026

season, given the influx of visitors, unlike Riyadh where demand declines in the same season. These percentages represent a calibratable starting point that can be adjusted periodically according to the evolution of the data and the response of demand, so that the proposed mechanism becomes a continuously updated operational tool rather than a fixed rule.

DISCUSSION

The results of this study are consistent with a general trend in the hotel revenue-management literature, namely that performance is not explained by a single factor but by the interaction of occupancy, price, location, channel, and time. However, the present study is distinguished by applying this logic at the unit level rather than the aggregate market level, as in most previous studies. Regarding the spatial factor, the findings on the superiority of Al-Madinah units during Ramadan and the importance of a unit's proximity to the event location are in line with the findings of Chiu et al. [7] on the spatial effect in tourism performance, and with the literature confirming the faster recovery of establishments near activity centres after the pandemic [8], while adding a finer dimension by linking location to a selective pricing decision for each unit.

Regarding pricing, the study's results confirm that occupancy alone is an insufficient indicator and that the average daily rate mediates the relationship between occupancy and sales. This is consistent with the yield-management fundamentals established by Kimes [10] and developed by subsequent dynamic-pricing studies [11], [12], which hold that the pricing decision should be based on multiple measurable indicators. The findings also align with Ampountolas and Legg [4] on the importance of monitoring daily occupancy before making the pricing decision, and with Qi et al. [6], who require a clear justification for any price change — exactly what the proposed quantified rules provide, since each rule is expressed in terms of an event, a season, a city, a day type, or a measured performance threshold.

Thus, the study fills a clear gap in the literature by moving revenue-management analysis from the aggregate level to the unit level, and from description to quantified operational rules. This carries a theoretical implication — enriching the concept of selective pricing based on the characteristics of each unit — and a practical implication: providing hotel-unit operators with a practical framework that links the daily pricing and marketing decision to actual performance indicators, instead of generalisation or personal judgement. Nevertheless, the study is subject to a number of constraints that should be considered when generalising the findings. It covers only a six-month period and relies on the data of a single operator in two cities, and the occupancy indicator was computed on the basis of the units active each month. The data did not include potentially influential elements such as customer ratings, proximity to event locations, customer type, and the lead time between booking and stay. Moreover, the proposed pricing mechanism has not yet been experimentally tested, but was derived from the descriptive and statistical analysis of historical data. Accordingly, future research should expand the time period and the number of cities and operators, integrate ratings, location, and customer-type data — drawing, for example, on data-mining approaches to customer-type discovery [13] — and test the effectiveness of the proposed rules through an actual experiment (A/B testing).

CONCLUSION

This paper analysed hotel bookings in terms of occupancy and sales during the period from January to June 2026, focusing on the effect of events, time periods, sales channels, and the performance of individual units, leading to the building of a proposed mechanism for smart pricing and selective marketing. The results showed that hotel performance was not constant but was affected by multiple factors: January recorded the highest occupancy and sales among the six months, with total confirmed sales of about SAR 4.22 million and an overall occupancy of 62.2%; real events significantly raised demand; the effect of Ramadan differed sharply by city, rising in Al-Madinah and falling in Riyadh; weekends outperformed weekdays; the Airbnb channel dominated in both bookings and sales; and cancellations reached 10.3% of bookings, concentrated on Booking.com and in Riyadh.

Most importantly, the study clarified that the relationship between occupancy and sales is mediated by the average daily rate, such that some units combine low occupancy with high sales owing to a high price, while

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue VI, June 2026

others combine high occupancy with low sales owing to a low price. From this standpoint, the study presented a proposed smart-pricing mechanism, expressed as quantified and calibratable rules, that links the pricing decision to the event, the season, the city, the day type, the channel, and the actual performance of each unit.

Based on these results, the study recommends the following:

1. Not applying a uniform pricing policy to all units, given the clear variation in performance between them in sales, occupancy, and nights.

2. Linking price increases to clear operational justifications — an event, higher occupancy, or improved unit performance — rather than a general increase.

3. Directing marketing effort toward the lower-performing units instead of raising their prices in a way that may further weaken demand.

4. Distinguishing, in pricing decisions, between the occupancy rate and the average daily rate, and considering both together with sales.

5. Exploiting the more effective sales channels, and reviewing the booking and cancellation policies on high-cancellation channels such as Booking.com.

6. Developing a more detailed database that includes customer ratings, proximity to event locations, customer type, and lead time, to support more advanced pricing models.

The wider conclusion is that the analysis of the operational data of hotel bookings is not limited to describing performance only, but can be transformed into an effective tool for supporting the decision in pricing and marketing, especially when units are treated as entities that differ in their response to demand, events, and the different time periods.

REFERENCES

1. R. G. Cross, J. A. Higbie, and D. Q. Cross, "Revenue management's renaissance: A rebirth of the art and science of profitable revenue generation," Cornell Hospitality Quarterly, vol. 50, no. 1, pp. 56–81, 2009.
2. S. Ivanov and V. Zhechev, "Hotel revenue management – a critical literature review," Tourism, vol. 60, no. 2, pp. 175–197, 2012.
3. Yeoman, "Hospitality revenue management research," Journal of Revenue and Pricing Management, vol. 23, 2024.
4. Ampountolas and M. Legg, "Predicting daily hotel occupancy: A practical application for independent hotels," Journal of Revenue and Pricing Management, vol. 23, no. 3, pp. 197–205, 2024.
5. Blengini and C. Y. Heo, "The role of exchange rate on hotelier's pricing decision and business performance: The case of Switzerland, a small open economy," Journal of Revenue and Pricing Management, vol. 23, pp. 206–216, 2024.
6. R. Qi, D. Jin, H. Chen, X. Mou, and F. Ali, "Strategic-level perceived fairness of hotel dynamic pricing: The role of cues and the asymmetric moderating effect of inflation attribution," Journal of Revenue and Pricing Management, 2024.
7. S.-H. Chiu, T.-Y. Lin, and W.-C. Wang, "Investigating the spatial effect of operational performance in China's regional tourism system," Humanities and Social Sciences Communications, vol. 11, art. 242, 2024.
8. M. D. Flecha-Barrio, F. E. García-Muiña, L. González-Serrano, and P. Talón-Ballestero, "How to overcome a worldwide lockdown in the hospitality sector? Lessons from revenue managers," Journal of Revenue and Pricing Management, vol. 23, pp. 217–237, 2024.
9. W. M. Alhag, "Hotel bookings analytics dashboard." [Online]. Available: https://wadahzx.github.io/hotel-bookings-dashboard/

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue VI, June 2026

10. S. E. Kimes, "The basics of yield management," Cornell Hotel and Restaurant Administration Quarterly, vol. 30, no. 3, pp. 14–19, 1989.
11. G. Abrate, G. Fraquelli, and G. Viglia, "Dynamic pricing strategies: Evidence from European hotels," International Journal of Hospitality Management, vol. 31, no. 1, pp. 160–168, 2012.
12. G. Abrate and G. Viglia, "Strategic and tactical price decisions in hotel revenue management," Tourism Management, vol. 55, pp. 123–132, 2016.
13. H. S. Moula, S. H. Yaghoubyan, R. Malekhosseini, and K. Bagherifard, "Customer type discovery in hotel revenue management: A data mining approach," Journal of Revenue and Pricing Management, vol. 23, no. 3, pp. 238–248, 2024.