

Article

An Empirical Analysis of the Impact of Marketing Strategies on Hotel Brand Equity: Customer Mindset, Rate Premium and the Long-Run Cost of Promotion

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Abstract: Brand equity is usually measured once, in a survey, and related to marketing strategies across hotels. That design confuses what a strategy does with what kind of hotel adopts it. This article follows 72 hotels in Tashkent, Samarkand, Bukhara and Khiva over sixteen quarters, 2022 to 2025, and estimates how changes in four marketing strategies within a hotel relate to changes in its brand equity. Equity is measured in two forms: customer-based, through a branded search index and the online review rating, and market-based, through the premium of the hotel's best available rate (BAR) over its competitive set. Because equity is a stock, the models include the lagged level and distinguish short-run from long-run effects. Comparisons across hotels overstate every strategy's association with the rate premium. The pooled coefficient of promotional share, minus 0.238, falls by 69 per cent with hotel and quarter effects, and those of brand communication and service training fall by more than 95 per cent and lose significance. Three results survive within hotels. First, promotion erodes market-based equity: each point of promotional share lowers the BAR premium by 0.071 points in the quarter and 0.138 points in the long run (bootstrap interval minus 0.192 to minus 0.099). Ten more points of promotional share still raise RevPAR, by 1.66 per cent in the quarter, but by only 1.00 per cent once the erosion of the rate premium is complete. Second, brand communication builds customer-based equity, 2.31 points of branded search per point of revenue spent in the quarter and 6.03 in the long run, and raises occupancy, but has no detectable effect on the rate premium. Third, service training works through reviews: it raises the review rating, which in turn carries the rate premium (1.42 points per rating point), although the total effect of training on the premium is not detected within the panel. Loyalty programme launches raise branded search slowly and leave the rate premium unchanged.

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1. Introduction

Hotels spend on marketing in several ways at once. They communicate the brand through advertising and content, they fill rooms with promotions and discounts, they train staff to deliver consistent service, and they run loyalty programmes. Each is expected to build brand equity, the value that the hotel's name adds to what it sells. Managers need to know which strategies do build it, which only buy volume, and which spend it.

The usual evidence comes from comparisons across hotels, often from a single survey [1]. Such comparisons show that hotels that advertise more, train more and promote less have stronger brands. They cannot show whether those strategies built the brands, because strong hotels also differ in location, product and management in ways that make them both advertise more and command higher rates. The question of what a strategy does is a question about change within a hotel over time.

Aaker [2] described brand equity as a set of assets, including awareness, perceived quality, associations and loyalty, that add to or subtract from the value provided by a product. Keller [3] defined customer-based brand equity as the differential effect of brand knowledge on consumer response to the marketing of the brand. Keller and Lehmann [4] placed these ideas in a chain running from the firm's marketing activity to customer mindset, to product-market outcomes such as price premiums and market share, and finally to financial value. Measures at the product-market level were developed by Ailawadi, Lehmann and Neslin [5], who proposed the revenue premium, the difference in revenue between a brand and a comparable private label, as an outcome measure of brand equity.

The effect of individual marketing strategies on equity has been studied in two traditions. Yoo, Donthu and Lee [6] related perceived marketing mix elements to the dimensions of brand equity in a survey and found that advertising spending and price were positively related to equity and frequent price promotions negatively. Studies of market data followed brands over time. Mela, Gupta and Lehmann [7] found over eight years of consumer panel data that promotions made consumers more price-sensitive in the long run, while advertising made them less so. Pauwels, Hanssens and Siddarth [8] found that the effects of price promotions on brand choice and purchase quantity were mostly temporary. The long-run erosion of price premiums by promotion is therefore well documented for consumer goods; whether it holds for hotels, where promotions take the form of discounted room nights, is less established.

In the hotel industry, Kim and Kim [9] found that customer-based brand equity was related to the financial performance of luxury hotels. Online reviews have become a central channel of customer-based equity: Ye, Law and Gu [10] found that review ratings were associated with online room sales, and Anderson [11] found that higher review scores allowed hotels to raise prices without losing occupancy. Hollenbeck [12] showed that reviews reduced the premium that chain affiliation once commanded, which suggests that the service delivered and reported by guests has become more important to a hotel's pricing power than its name alone.

Two methodological points follow. Comparisons across firms confound strategy with firm type, so within-firm estimation with fixed effects is needed [13]. And because equity accumulates, dynamic models with a lagged dependent variable are appropriate; with fixed effects and a short panel, the coefficient on the lagged dependent variable is biased downward [14], which makes long-run effects conservative. Difference-GMM estimators correct this bias by instrumenting the lagged level with earlier lags [15]; this article instead reports fixed-effects estimates, whose bias has a known direction. Standard errors must allow for correlation within firms over time [16].

The gap is that the effects of marketing strategies on hotel brand equity have been estimated mostly across hotels and at one point in time, and that the long-run cost of promotion to hotel rate premiums has not been set against its short-run gain in volume.

This article follows 72 hotels over sixteen quarters and asks how changes in four marketing strategies relate to changes in brand equity within the same hotel. Three constructs organise the analysis. The first separates customer-based equity, measured by a branded search index and the review rating, from market-based equity, measured by the premium of the hotel's best available rate over its competitive set, following the distinction between customer mindset and product-market outcomes described above. The second treats equity as a stock and separates the short-run effect of a strategy from its long-run effect once the stock has adjusted. The third, introduced here as the promotion arithmetic, decomposes the RevPAR effect of promotion into the volume gained, the discount given on promoted nights, and the erosion of the rate premium that follows.

Three expectations were formed in advance. The first was that brand communication would build brand equity in both forms. The second was that promotions would raise volume without harming equity. The third was that service training would raise equity through better reviews. The first holds for customer-based equity but not for the rate premium. The second is rejected: promotions erode the rate premium, although they remain profitable at the margin. The third is supported in its links but not detected in its total.

2. Materials and Methods

2.1 Panel

The panel covers 72 hotels, 18 in each of Tashkent, Samarkand, Bukhara and Khiva, of three to five stars, observed quarterly from the first quarter of 2022 to the fourth quarter of 2025, giving 1,152 hotel-quarters. Hotels are anonymised. Forty hotels operated a loyalty programme throughout the panel, ten launched one during it, and the rest had none.

2.2 Marketing strategies

Brand communication is spending on advertising, content and brand promotion, excluding price discounts, as a percentage of revenue. Promotional share is the percentage of room nights sold at promotional rates below the best available rate; the average promotional discount is 20 per cent. Service training is training expenditure per employee, in hundreds of US dollars, entered with a one-quarter lag because training affects service with a delay. The loyalty programme is an indicator equal to one in quarters in which the hotel operates one.

2.3 Brand equity

Customer-based equity is measured in two ways. The branded search index measures searches for the hotel's name relative to searches for hotels in the same city, scaled to 100 for the most-searched hotel in the city over the panel. The review rating is the average online review score on a ten-point scale. Market-based equity is measured by the BAR premium, the percentage by which the hotel's best available rate exceeds the average best available rate of its competitive set. Using the best available rate rather than the average rate achieved separates the hotel's pricing power from the mechanical effect of discounts: a promotion lowers the average rate by definition but lowers the best available rate only if it weakens what guests are willing to pay. Occupancy and a RevPAR index relative to hotels in the same city and quarter measure outcomes.

2.4 Estimation

The BAR premium is regressed on the four strategies in four nested specifications: pooled OLS across all hotel-quarters (M1), hotel fixed effects (M2), hotel and quarter fixed effects (M3), and hotel and quarter fixed effects with the lagged BAR premium (M4). The change from M1 to M3 shows how much of the association across hotels reflects differences between hotels rather than the effect of changing a strategy. In M4 the long-run effect of a strategy is its coefficient divided by one minus the coefficient on the lagged premium. With sixteen quarters, the downward bias of the lagged coefficient is approximately $(1 + \lambda)/(T - 1)$, about 0.11, so long-run effects are understated. Standard errors are clustered by hotel; with 72 clusters the critical value is 1.994. Intervals for long-run effects come from a cluster bootstrap with 300 replications [17]. Analogous dynamic models are estimated for the search index and the review rating, and a two-way fixed-effects model for occupancy. Loyalty launches are examined in an event study comparing the ten launching hotels with hotels without a programme in the same quarter.

2.5 Limitations

Within-hotel estimation removes stable differences between hotels but not changes that coincide with a strategy change, such as a renovation. Managers may raise promotion in quarters when they expect weak demand, which would bias the promotion coefficient toward a negative association with outcomes; quarter effects remove common shocks but not hotel-specific expectations. The branded search index captures online attention, which is one part of awareness. And the event study rests on ten launching hotels.

3. Results

3.1 The panel

Table 1. Variables and their variation

Variable	Mean	SD	Within-hotel share of variance
Brand communication, % of revenue	2.65	0.91	29.5%
Promotional share of room nights, %	19.12	8.26	61.4%
Service training, USD 100 per employee	3.04	1.17	23.2%
Branded search index	52.54	16.15	7.6%
Review rating, 1-10	8.88	0.77	14.7%
BAR premium over competitive set, %	3.94	7.48	6.3%
Occupancy, %	60.91	8.84	54.5%
RevPAR index	100.00	15.87	11.7%

Source: authors' calculations. n = 1,152 hotel-quarters.

Brand equity changes slowly. Only 6.3 per cent of the variance of the BAR premium and 7.6 per cent of the branded search index lies within hotels over time; the rest is stable difference between hotels. Strategies vary more: 61.4 per cent of the variance of promotional share and 29.5 per cent of brand communication is within hotels. Across hotels, equity and strategy are closely associated: the pooled correlation of promotional share with the BAR premium is minus 0.407, of training with the review rating 0.650, and of communication with branded search 0.666. The question is how much of this reflects what the strategies do.

Customer-based equity is spread fairly evenly across hotels within each city. The Gini coefficient of the branded search index ranges from 0.150 to 0.184 across cities and did not change systematically between the first and last quarter of the panel. No hotel dominates attention in any city.

3.2 Market-based equity: between and within

Table 2. Nested specifications for the BAR premium

Specification	Promotional share	Brand communication	Service training (lag)	Loyalty programme	Lagged BAR premium	R ²
M1 pooled OLS	-0.238 (-6.24)	2.148 (5.63)	2.883 (7.92)	3.457 (4.42)		0.586
M2 hotel FE	-0.066 (-8.94)	0.087 (0.79)	0.089 (0.88)	-0.161 (-0.28)		0.053
M3 hotel and quarter FE	-0.073 (-6.49)	0.102 (0.94)	0.064 (0.63)	-0.190 (-0.32)		0.037
M4 dynamic, hotel and quarter FE	-0.071 (-7.02)	0.056 (0.61)	0.042 (0.45)	-0.055 (-0.16)	0.484 (15.79)	0.266
Long-run effect from M4	-0.138	0.108	0.081	-0.106		
Bootstrap 95% interval	[-0.192, -0.099]	[-0.211, 0.435]	[-0.268, 0.405]	[-1.420, 1.302]		

Source: authors' calculations. t statistics from standard errors clustered by hotel in parentheses; critical value 1.994. R² in M2 to M4 is within-hotel.

Comparisons across hotels overstate every strategy. In the pooled model, all four strategies are strongly associated with the BAR premium, and together they explain 58.6 per cent of its variation. Within hotels, the coefficients of brand communication, training and loyalty fall by more than 95 per cent and none is significant. The promotional share coefficient falls by 69 per cent, from minus 0.238 to minus 0.073, but remains significant in every within-hotel specification. Hotels that communicate, train and run loyalty programmes have higher rate premiums, but on this evidence that is because of what kind of hotels they are; changing those strategies within a hotel over sixteen quarters does not move its rate premium detectably. Promotion is different: it has a within-hotel effect, although a third as large as the comparison across hotels suggests.

The rate premium is persistent. Its coefficient on its own lagged value is 0.484, so about half of any quarter's premium carries into the next, and the long-run effect of a sustained change in strategy is about twice the short-run effect. Allowing for the approximate downward bias of 0.11 in the lagged coefficient, the true persistence is likely nearer 0.6, which would make long-run effects larger still.

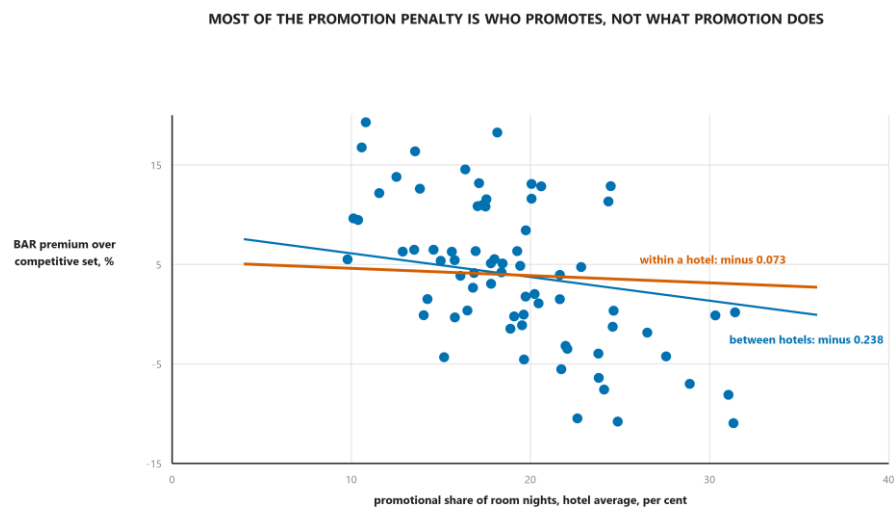


Figure 1. Promotional share and BAR premium across hotels, with pooled and within-hotel slopes. Most of the association across hotels reflects which hotels promote.

3.3 Customer-based equity

Table 3. Dynamic within-hotel models of customer-based equity

Dependent variable	Lagged dependent	Brand communication	Loyalty programme	Service training (lag)	Promotional share	Long-run effect of main driver
Branded search index	0.617 (23.56)	2.307 (11.31)	1.601 (1.93)		0.029 (1.44)	communication 6.03
Review rating	0.469 (14.53)	0.005 (0.28)		0.090 (7.11)	0.001 (0.78)	training 0.169

Source: authors' calculations. Hotel and quarter fixed effects; t statistics clustered by hotel in parentheses.

The first expectation holds for customer-based equity. Within a hotel, each additional point of revenue spent on brand communication raises the branded search index by 2.31 points in the quarter and 6.03 points in the long run. The same spending raises occupancy by 0.49 points ($t = 2.55$). It does not raise the rate premium: the long-run interval for communication on the BAR premium runs from minus 0.21 to 0.44. Communication makes more people look for and book the hotel, but not at higher rates. This is consistent with the separation between awareness and pricing power in the brand value chain.

Loyalty programmes raise branded search by 1.60 points ($t = 1.93$), just short of significance. Promotion has no effect on customer-based equity in either form.

The third expectation is supported in its links. Each hundred dollars of training per employee raises the review rating by 0.090 points in the following quarter and 0.169 points in the long run ($t = 7.11$). The review rating in turn carries the rate premium: with the rating and search index added to the dynamic BAR model, the rating has a coefficient of 1.422 ($t = 8.34$), while the search index is not significant (0.018, $t = 1.29$). The implied long-run chain from training through rating to the premium is 0.455 points per hundred dollars. Yet the total within-hotel effect of training on the premium in M4 is 0.042 and not significant. Only 23.2 per cent of the variance of training lies within hotels, and the effect on the rating is modest; the chain exists but is too weak to detect in the total over sixteen quarters. The finding that the review rating, not branded search, carries the rate premium is consistent with evidence that reviews give hotels pricing power [18].

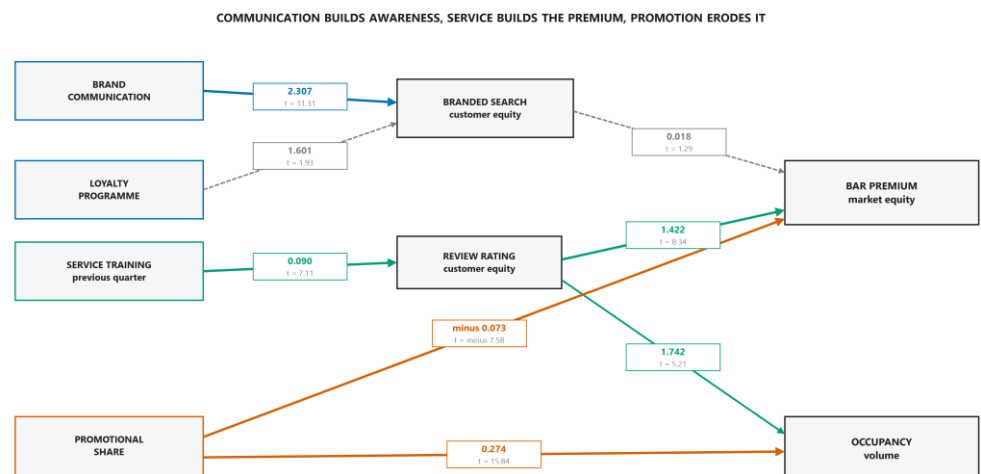


Figure 2. Within-hotel path structure. Communication builds branded search, training builds the review rating, the rating carries the rate premium, and promotion erodes it.

3.4 Volume and the promotion arithmetic

Table 4. Occupancy, hotel and quarter fixed effects

Variable	Coefficient	t
Promotional share	0.276	15.58
Brand communication	0.485	2.55
Service training (lag)	0.109	0.72
Loyalty programme	0.001	0.00
Within R ²	0.170	

Source: authors' calculations. Pooled across hotels, the promotional share coefficient is minus 0.241 ($t = \text{minus } 5.62$).

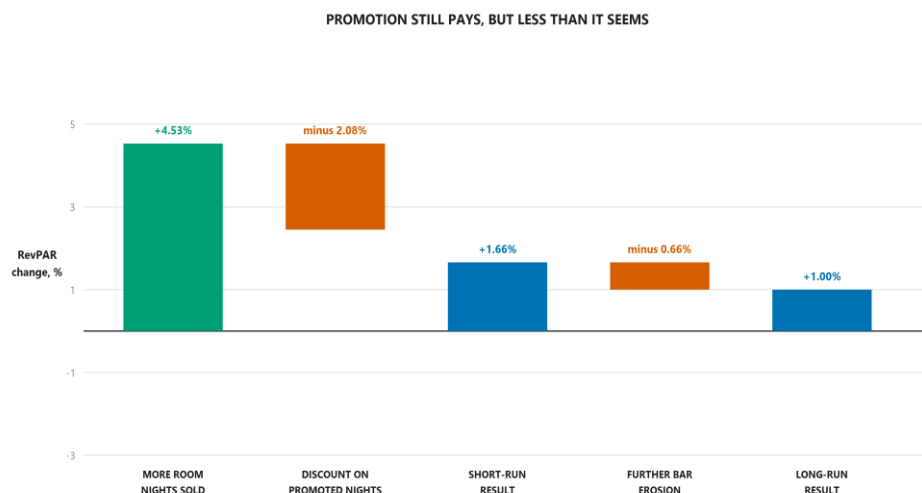
The second expectation is rejected. Promotion does raise volume: within a hotel, each point of promotional share adds 0.276 points of occupancy. Across hotels the sign reverses, because hotels that promote heavily are weaker hotels with lower occupancy; the pooled coefficient is minus 0.241. But promotion is not free of cost to equity. It lowers the BAR premium, the rate the hotel can charge guests who do not receive a promotion, by 0.071 points in the quarter and 0.138 in the long run.

Table 5. The promotion arithmetic: ten more points of promotional share

Component	RevPAR change
More room nights sold (occupancy plus 2.76 points)	+4.53%
Discount on promoted nights (20 per cent)	-2.08%
Short-run BAR erosion (minus 0.71 points)	-0.79%
Short-run result	+1.66%
Further BAR erosion to the long-run level (minus 1.38-0.66% points in total)	
Long-run result	+1.00%
Long-run result across the bootstrap interval of the promotion effect	+0.47% to +1.39%

Source: authors' calculations, at mean occupancy (60.9 per cent), BAR premium (3.94 per cent) and promotional share (19.1 per cent). Ten points is about two within-hotel standard deviations of promotional share (4.76).

At the margin, promotion remains profitable in this panel. Ten more points of promotional share raise RevPAR by 1.66 per cent in the quarter. Two fifths of that gain is lost as the rate premium erodes toward its long-run level, leaving 1.00 per cent, with a range of 0.47 to 1.39 per cent across the bootstrap interval. The erosion of the premium alone, 1.38 points in the long run, costs 1.33 per cent of RevPAR. Hotels that judge promotions by their quarterly results overstate their value by about two thirds. And the cost is borne by a stock of equity that recovers slowly: half of any loss in the premium persists into the next quarter.

**Figure 3.** Decomposition of the RevPAR effect of ten more points of promotional share.

3.5 Loyalty programme launches

Table 6. Event study of loyalty launches

Quarters from launch	Hotels	Change in branded search index	Change in BAR premium
-4	10	1.49 (1.79)	0.08 (0.18)
-3	10	-0.47 (-0.57)	0.21 (0.71)
-2	10	0.06 (0.07)	-0.31 (-0.88)
-1	10	-1.07 (-0.89)	0.01 (0.03)

Quarters from launch	Hotels	Change in branded search index	Change in BAR premium
0	10	0.88 (0.49)	0.07 (0.10)
1	10	1.57 (0.83)	0.24 (0.33)
2	10	1.92 (0.81)	-0.01 (-0.02)
3	10	0.68 (0.28)	-0.03 (-0.03)
4	10	1.59 (0.72)	0.40 (0.45)
5	7	2.52 (1.05)	-1.28 (-2.01)
6	6	4.91 (3.05)	-0.29 (-0.77)

Source: authors' calculations. Changes relative to the hotel's average in the four quarters before launch, net of hotels without a programme in the same quarter; t statistics in parentheses.

The ten hotels that launched loyalty programmes show no significant change in either measure before launch. After launch their branded search index drifts upward, reaching 4.91 points above its pre-launch level after six quarters, but only that last point, based on six hotels, is individually significant. The BAR premium does not change; the single significant negative point, in the fifth quarter, is isolated and rests on seven hotels. Loyalty programmes may build attention slowly, but within the panel they do not build pricing power.

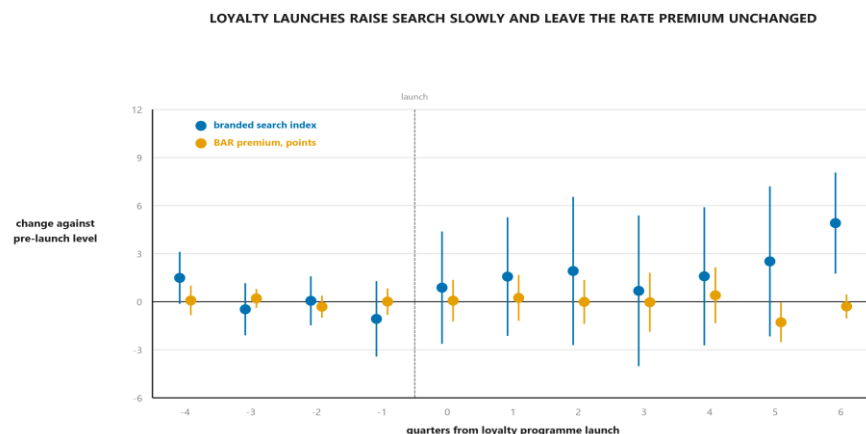


Figure 4. Branded search and BAR premium around loyalty programme launches.

4. Discussion

4.1 Three conclusions follow.

First, cross-sectional evidence on marketing and brand equity in hotels is misleading. The pooled associations between strategies and the rate premium are large and significant for all four strategies; within hotels, three of them disappear. Studies that relate a hotel's marketing mix to its equity at one point in time, including survey studies, measure what distinguishes strong hotels, not what builds strength.

Second, the two forms of equity respond to different strategies. Communication builds customer-based equity in the form of attention and fills rooms, but does not raise the rate premium. Service, through reviews, is the route to the premium. This matches the pattern in the brand value chain in which customer mindset does not translate automatically into product-market outcomes, and it suggests that in the review era a hotel's rate premium is earned in operations rather than in communication [19].

Third, promotion spends equity. The short-run gain in volume is real and, in this panel, larger than the long-run loss in rate premium, so promotion remains profitable at the margin. But its quarterly return overstates its long-run return by about two thirds,

consistent with the long-term effects of promotion documented for consumer goods [20], and the loss falls on a stock that recovers slowly.

5. Conclusion

This article estimated the effects of four marketing strategies on the brand equity of 72 hotels over sixteen quarters, using within-hotel variation and dynamic models.

Comparisons across hotels overstate all four strategies. Within hotels, promotion lowers the BAR premium by 0.071 points per point of promotional share in the quarter and 0.138 in the long run, while raising occupancy by 0.276 points; ten more points of promotional share raise RevPAR by 1.66 per cent in the quarter and 1.00 per cent in the long run. Brand communication raises branded search by 2.31 points per point of revenue in the quarter and 6.03 in the long run, and raises occupancy, but not the rate premium. Service training raises the review rating, which carries the rate premium at 1.42 points per rating point, although the total effect of training is not detected. Loyalty launches raise search slowly and leave the premium unchanged.

Four recommendations follow, each limited to what the evidence supports.

First, evaluate promotions over several quarters, not one. The quarterly RevPAR gain from promotion overstates its long-run gain by about two thirds, because the rate premium erodes after the quarter in which the promotion runs. Promotion budgets should be set on long-run returns, and hotels that rely heavily on promotion should expect their rate premium to be lower than it would otherwise be.

Second, do not expect brand communication to raise rates. Communication builds attention and fills rooms, which has value, but the evidence gives no support for justifying communication spending by a higher rate premium.

Third, invest in service quality as the route to pricing power, and measure it through reviews. The review rating, not branded search, carries the rate premium, and training moves the rating. Because the effect accumulates slowly, training should be sustained rather than episodic, and its return judged over years.

Fourth, treat loyalty programmes as a long-term investment in attention. Within six quarters of launch they show a slow rise in search and no change in the rate premium.

The natural extension is a longer panel that follows the review rating and rate premium over several years after changes in training, which would show whether the chain from service to pricing power, detected here in its links, also appears in its total.

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