

The Effect of Dynamic Pricing Strategy on Sales Performance through the Airbnb Platform: Evidence from Private Villas in Canggu, Bali

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ABSTRACT

This study investigates the impact of dynamic pricing strategy on sales performance in private villas listed on the Airbnb platform, focusing on the Canggu area of Bali. Market conditions were examined both as antecedent and moderating variables. Data were drawn from a population of 1,681 private villas in Canggu, with a sample of 323 villas selected using Slovin's formula ($e = 5\%$). Secondary data were obtained from Airbtics and AirDNA, leading platforms that provide analytics for Airbnb listings. The research applied Partial Least Squares Structural Equation Modeling (PLS-SEM) to evaluate relationships among variables. Key performance indicators included Average Daily Rate (ADR), Revenue per Available Room (RevPAR), occupancy rate, and total revenue. The findings reveal that dynamic pricing strategy significantly improves sales performance. Market conditions significantly affect sales performance and strengthen the effect of dynamic pricing as a moderator. However, market conditions do not have a significant direct effect on the adoption of dynamic pricing. These results highlight the adaptive nature of pricing strategies to market dynamics and suggest that villa managers should design responsive and context-based pricing policies to maximize revenue.

INTRODUCTION

The rapid growth of digital technology has transformed the hospitality industry, enabling peer-to-peer accommodation platforms such as Airbnb to reshape consumer experiences and property management. In Bali, Airbnb has become an important distribution channel for private villa owners, especially in Canggu, a hotspot for international tourists, digital nomads, and lifestyle travelers. Despite the growing market potential, competition among villa owners has intensified, requiring innovative pricing strategies. Dynamic pricing, which adjusts room rates in response to demand fluctuations, seasonality, and competitor activity, has emerged as a critical tool for revenue optimization (Abrate & Viglia, 2019). While global studies confirm its benefits, there remains limited research on the localized adoption of dynamic pricing within the unique context of Bali's tourism economy. This study addresses this gap by examining the effect of dynamic pricing on sales performance, considering the role of market conditions as both antecedent and moderator.

Despite the significant opportunities, villa owners face increasing competition due to the rapid expansion of accommodation supply and heightened expectations of travelers. Traditional fixed pricing models are often insufficient to respond to sudden fluctuations in demand, seasonal cycles, and competitor strategies. In this context, dynamic pricing—defined as the continuous adjustment of room rates based on demand patterns, seasonality, and market competition has become a central instrument for optimizing revenue and sustaining competitiveness (Abrate & Viglia, 2019). Evidence from global studies highlights its effectiveness in improving occupancy rates and revenue per available room, yet its adoption remains inconsistent, particularly among small-scale operators in emerging destinations like Bali.

This study responds to these challenges by investigating the effect of dynamic pricing on sales performance of private villas in Canggu, while also examining the moderating and antecedent role of market conditions. Tourism demand in Bali is highly dynamic, shaped by global travel trends, economic conditions, and external shocks such as pandemics or natural disasters. Such volatility emphasizes the need for villa managers to adopt adaptive and data-driven pricing policies. However, empirical evidence on how local hosts integrate market conditions into pricing decisions within the Airbnb ecosystem is still limited. By addressing this gap, the present research not only contributes to the theoretical development of revenue management and platform economy studies but also provides actionable insights for villa managers, policymakers, and industry stakeholders seeking to strengthen the sustainability and competitiveness of Bali's villa market.

LITERATURE REVIEW

a. Price Discrimination and Its Relevance to Dynamic Pricing

Price discrimination, which refers to selling the same product at different prices to different buyers, provides the conceptual grounding for dynamic pricing. Classical taxonomy distinguishes first, second, and third-degree price discrimination (Varian, 1989). In digital marketplaces, algorithmic systems

enable much finer segmentation, tailoring prices to consumer willingness to pay. This theory is directly relevant to Airbnb pricing dynamics, where nightly rates vary by season, demand, and listing features.

b. Dynamic Pricing Strategy: Definition, Mechanisms, and Objectives

Dynamic pricing is defined as a flexible pricing strategy that adjusts rates in response to demand, time, and competition (Chen & Gallego, 2019). In hospitality and sharing-economy contexts, operational forms include time-based pricing, demand-based pricing, and segment-based pricing. The two key indicators are price variability and frequency of price adjustment (Gibbs et al., 2018). The primary objective is to optimize revenue while balancing occupancy and perceived fairness.

c. Revenue Management and Performance Metrics

Revenue management emphasizes maximizing earnings through demand forecasting and capacity optimization (Talluri & van Ryzin, 2004). Commonly used performance indicators include Average Daily Rate (ADR), Revenue per Available Room (RevPAR), occupancy rate, and total revenue (Sainaghi et al., 2019). These measures allow comparisons across properties and are the dependent variables in this study.

d. Market Conditions as Antecedent and Moderator

Market conditions consist of local demand, competitor pricing, and seasonality. These external factors shape the opportunities and constraints for revenue (Kotler & Keller, 2016). Prior studies show mixed evidence. Some suggest that competitive intensity drives dynamic pricing adoption (Ma et al., 2020), while others highlight that local hosts may not respond directly to market pressures. Instead, market conditions often play a stronger moderating role that influences how effective dynamic pricing is in generating revenue (Li et al., 2018).

e. Airbnb and the Platform Economy

Airbnb operates as a two-sided platform, enabling peer-to-peer transactions and providing algorithmic support through features such as Smart Pricing (Zervas et al., 2017). While the platform facilitates dynamic pricing, adoption varies among hosts due to perceptions of fairness, limited technical knowledge, or preference for manual control (Guttentag, 2015). This explains why market conditions may not always translate into dynamic pricing adoption.

f. Empirical Evidence and Research Gap

Empirical evidence largely supports the positive effect of dynamic pricing on revenue (Abrate & Viglia, 2019; Gibbs et al., 2018). Market conditions are also consistently shown to affect sales performance directly (Aguiar et al., 2018). However, the relationship between market conditions and the adoption of dynamic pricing remains unclear. Few studies have tested both roles simultaneously, antecedent versus moderator, and even fewer have examined the Airbnb context in Bali. This study addresses these gaps.

METHODOLOGY

This research employed a quantitative approach with PLS-SEM for hypothesis testing. The study population comprises 1,681 private villas in the Canggu area of Bali. The final sample consists of 323 villas, calculated using Slovin's formula with a 5% margin of error. Data Source is secondary data were collected from Airbtics and AirDNA, which provide listing-level and market-level performance data. This research contains variable:

1. Dynamic Pricing Strategy (price variability, frequency of adjustment).
2. Sales Performance (ADR, RevPAR, occupancy rate, total revenue).
3. Market Conditions (local demand, competitor pricing, seasonality).

Measurement by model reliability and validity and structural model path coefficients, t-statistics, and R^2 were tested using PLS-SEM.

RESEARCH RESULT AND DISCUSSION

a. Overview of key results

The structural model explains a large share of variance in the dependent construct ($R^2 \approx 0.748$), indicating good explanatory power for the set of predictors in the model. The hypothesis tests show: Dynamic Pricing \rightarrow Revenue ($\beta = 0.468$, $t = 12.119$, $p < 0.001$), Market Conditions \rightarrow Revenue ($\beta = 0.377$, $t = 10.838$, $p < 0.001$), Market Conditions \rightarrow Dynamic Pricing ($\beta = -0.062$, $t = 1.033$, not significant), and the interaction (Market Conditions \times Dynamic Pricing) \rightarrow Revenue ($\beta = 0.531$, $t = 16.427$, $p < 0.001$).

b. Dynamic pricing positively affects revenue (H1)

The positive and strongly significant path from Dynamic Pricing to Revenue indicates that villas that implement more adaptive pricing, higher price variability and more frequent adjustments, achieve higher revenue outcomes (ADR, RevPAR, total revenue). Figures 4.1–4.3 in the thesis show a clear positive linear trend between the dynamic pricing composite score and revenue indicators. In practice, this means that increasing the aggressiveness or sophistication of price adjustments, when done properly, translates into measurable revenue gains for private villas on Airbnb.

c. Market conditions directly increase revenue (H2)

Market conditions, measured by local demand, competitor pricing, and seasonality, have a positive and significant direct effect on Revenue. This finding confirms that a favorable market environment, such as high local demand, supportive seasonality, or relatively weak competitive pressure, raises achievable revenue levels for villas.

d. Why market conditions do not significantly predict dynamic pricing adoption (H3 rejected)

Although theory and prior studies anticipate that market signals would prompt hosts to adopt dynamic pricing, the analysis finds no significant direct effect of Market Conditions on Dynamic Pricing. Two explanations arise. First, many price adjustments are influenced by platform-level predictive algorithms that rely on global and historical data rather than immediate local fluctuations. Second, villa owners and small managers often lack resources, time, or trust to continuously adjust pricing strategies, leading to weaker

- responsiveness to local signals. This explains why market conditions may influence revenue but not necessarily dynamic pricing adoption.
- e. Market conditions amplify the effect of dynamic pricing (H4 moderation) Although market conditions do not directly predict adoption of dynamic pricing, they significantly moderate the effect of dynamic pricing on revenue. The revenue gains from dynamic pricing are context-dependent. Dynamic pricing produces greater revenue when market conditions are favorable, and provides less benefit or may even be harmful when demand is weak or competition is intense. This shows that dynamic pricing must be applied in alignment with market signals.
 - f. Theoretical and managerial implications Theoretically, the results clarify that dynamic pricing is effective, but its strength depends on contextual market conditions. The absence of a direct link from market conditions to dynamic pricing suggests that platform algorithms and managerial practices mediate the process. Managerially, villa managers should not treat dynamic pricing as a plug-and-play solution. They should monitor algorithmic tools, combine them with local insights, and actively track demand signals such as festivals and flight patterns. They should integrate automated systems with human judgment to achieve optimal results.
 - g. Limitations and future research The study is limited to Canggu and Airbnb listings. Future research should extend across Bali regions, include other platforms, and explore host heterogeneity such as differences in automation use and managerial capacity.
 - h. Concluding remark Dynamic pricing is a robust lever for revenue improvement, market conditions directly affect revenue, and market conditions amplify the effect of dynamic pricing. However, market conditions do not automatically lead to adoption of dynamic pricing. Pricing behavior in platform contexts is shaped by algorithms and managerial decisions, which underscores the importance of context-aware and data-driven strategies.

CONCLUSIONS AND RECOMMENDATIONS

This study concludes that dynamic pricing strategy plays a critical role in enhancing sales performance among Airbnb private villas in Canggu, Bali. Villas that implement dynamic pricing more effectively, through higher price variability and more frequent adjustments, are shown to achieve better performance outcomes such as ADR, RevPAR, occupancy rate, and total revenue. Furthermore, market conditions significantly influence sales performance and serve as a powerful moderator that amplifies the effectiveness of dynamic pricing. However, the findings also reveal that market conditions do not directly determine the adoption of dynamic pricing, suggesting that adoption is more closely related to managerial decisions and platform-driven algorithms rather than purely external signals.

Theoretically, this research contributes to the body of knowledge in revenue management by clarifying the dual role of market conditions, both as a direct

performance driver and as a contextual factor that strengthens the impact of pricing strategies. This dual role highlights the importance of integrating external market analysis into existing revenue management frameworks.

From a managerial perspective, villa owners and managers should recognize that dynamic pricing is not a one-size-fits-all approach. Successful implementation requires the combination of automated pricing tools with local insights, allowing managers to respond to demand fluctuations, seasonality, and competitive pressures more strategically. Data-driven decision-making, when supported by continuous monitoring of market conditions, can help maximize revenue potential and sustain competitiveness in Bali's increasingly saturated villa market.

At the policy level, the findings suggest that tourism authorities and industry stakeholders could play a supportive role by facilitating training programs and workshops on revenue management for villa owners and small-scale operators. This would not only enhance managerial capabilities but also contribute to the long-term sustainability of the local tourism economy.

Overall, the study emphasizes the importance of context-aware pricing practices. While dynamic pricing clearly improves performance, its success depends on the alignment with favorable market conditions and informed managerial intervention. Future studies are recommended to extend this research beyond Canggu to other Bali destinations, compare performance across multiple platforms beyond Airbnb, and integrate additional factors such as customer satisfaction and host heterogeneity. Such expansions would provide a more holistic understanding of dynamic pricing and its broader implications for the sharing economy in hospitality.

ADVANCED RESEARCH

Future studies are recommended to expand the geographical scope, for example by comparing Canggu with other regions such as Ubud, Seminyak, or Nusa Dua. Each of these destinations represents a different tourism profile, with Ubud being more associated with cultural and wellness tourism, Seminyak known for its nightlife and upscale market, and Nusa Dua characterized by large resort complexes and family-oriented travelers. By conducting comparative analyses across these areas, researchers will be able to determine whether the effectiveness of dynamic pricing strategies is consistent or varies according to differences in visitor characteristics, travel motivations, and competitive intensity. Such an approach would provide deeper insights into the adaptability of dynamic pricing within Bali's diverse hospitality landscape and strengthen the generalizability of the findings.

In addition, future research could also consider other variables beyond those used in this study. While this research focused on dynamic pricing strategy, market conditions, and sales performance, other factors may play an important role in shaping outcomes. Customer satisfaction, perceived fairness of pricing, host managerial capacity, and the level of technology adoption (such as the use of automated pricing tools or revenue management software) could provide a

richer understanding of how pricing strategies affect both revenue and guest experiences. Including these variables would not only broaden the theoretical contributions but also offer more practical insights for villa owners and policymakers in the tourism sector.

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