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Leveraging Technology-Driven Revenue Management to Promote Sustainable Hospitality Practices in Sri Lanka Amidst Tourism Seasonality

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Abstract

This study examines the role of technology-driven revenue management strategies in promoting sustainable hospitality practices in Sri Lanka, where tourism demand is highly affected by seasonality. Guided by the Technology–Organization–Environment (TOE) framework and the Triple Bottom Line (TBL) framework, the study investigates how technology-driven pricing, demand management, and marketing strategies influence sustainable accommodation, transportation, and stakeholder engagement practices. A mixed-methods research design was adopted, combining a quantitative survey of 161 hospitality stakeholders with 10 qualitative interviews. The quantitative findings indicate a high level of adoption of technology-enabled revenue management practices within the hospitality sector. Regression analysis reveals that technology-driven pricing and demand management strategies have significant positive effects on sustainable accommodation practices, while technology-driven marketing strategies demonstrate a weaker but supportive relationship with sustainability outcomes. The qualitative findings further reveal that hotels increasingly utilize dynamic pricing, demand forecasting, data analytics, social media, and search engine optimization to improve occupancy management, revenue performance, customer engagement, and resource utilization. Participants emphasized that technology-supported pricing and forecasting tools help organizations respond effectively to seasonal demand fluctuations, optimize resource allocation, reduce operational inefficiencies, and support long-term sustainability objectives. The findings also indicate that digital marketing plays an important role in strengthening customer engagement, market visibility, and business performance. The study demonstrates that the integration of technology-driven revenue management and sustainability practices enhances economic performance, operational efficiency, and responsible resource management in the hospitality sector. The study contributes to the growing literature on sustainable tourism and revenue management in developing economies and provides practical insights for hospitality managers and policymakers seeking to address seasonality challenges while advancing sustainability goals.

Keywords: Hospitality sector; Technology-driven revenue management; Dynamic pricing; Demand forecasting; Digital marketing; Sustainable tourism practices; Tourism seasonality.

Introduction

Tourism has long been a cornerstone of Sri Lanka's economic and social development, leveraging the nation's rich cultural heritage, pristine beaches, and diverse ecosystems to attract international travelers (Gamage, Kuruppuge & Haq, 2017; Gamage & Kalinga, 2025). Sustainable Tourism Practices and Financial Performance in the Hospitality Industry: An Investigation into Classified Hotels in Sri Lanka (Gamage & Kalinga, 2025). Despite its relatively small geographic size, the island offers a unique combination of natural and cultural attractions, making it a key destination in South Asia (Kumar et al., 2024). Over recent decades, tourism has significantly contributed to employment generation, foreign exchange earnings, and broader economic growth (Ferguson, 2007; Li, Jin, & Shi, 2018). However, the sector continues to face a persistent challenge: pronounced seasonality in tourist arrivals. Peak periods, typically from December to April, often overwhelm infrastructure and services, whereas off-peak months witness underutilized resources, revenue fluctuations, and operational inefficiencies (Cisneros-Martínez & Fernández-Morales, 2018; Dwyer, Forsyth, & Spurr, 2004; Rosselló & Sansó, 2017).

Seasonality in tourism is shaped by natural, cultural, and economic factors. Climatic patterns, monsoons, and holiday calendars influence the timing of tourist flows, while pricing, marketing strategies, and product offerings determine demand responsiveness (Cheshmehzangi & Zou, 2025; Gössling et al., 2012; Jaroensutasinee et al., 2025). In Sri Lanka, seasonality is particularly pronounced due to regional climatic diversity and dual monsoon systems, affecting southern and western regions differently across the year (Huang et al., 2023: Shelton, Ogou, & Pushpawela, 2022; Shelton & Pushpawela, 2022). Empirical data from the Sri Lanka Tourism Ministry (2023) highlight that despite an increase in overall tourist arrivals, peak months remain concentrated, and off-peak periods continue to strain operational and financial capacities. Such fluctuations challenge the sustainability of tourism enterprises, reduce long-term planning capabilities, and hinder consistent revenue generation (Tyrrell & Johnston, 2008; Williams & Ponsford, 2009).

Emerging technology offers a potential solution to these challenges. Technology-enabled revenue management strategies (Wang et al., 2015) , including dynamic pricing algorithms (Angelini, Costa, & Guizzardi, 2025), demand forecasting models (Wu, Song, & Shen, 2017), and online market platforms (Hojeghan & Esfangareh, 2011), enable hospitality operators to adjust pricing and capacity in real-time, improving revenue optimization and operational

efficiency (Anwar, Kumar, & Manoharan, 2026; Buhalis & Leung, 2018; Kaul, 2023; Milton, 2024). While conventional revenue management in Sri Lanka often relies on static pricing and manual processes, advanced technologies,such as artificial intelligence (AI) and machine learning (ML),offer predictive insights into demand patterns and customer preferences, allowing for proactive management of seasonal fluctuations (Buhalis & Leung, 2018; Kaul, 2023; Sivakarthi & Vinora, 2025; Zajia, Díaz, & Cachipuendo,2025).

Sustainable tourism emphasizes long-term viability by balancing economic, environmental, and social outcomes (Li, Jin, & Shi, 2018; Padin, 2012). It seeks to minimize the negative impacts of tourism while maximizing benefits for local communities and ecosystems (Budeanu, 2005; Kumar et al., 2024). By integrating technology-enabled revenue management strategies with sustainability principles, hospitality providers can optimize resource use, enhance visitor experiences, and promote year-round tourism activities without compromising environmental or cultural integrity (Buhalis & Leung, 2018; Gamage & Kalinga, 2025; Kaul, 2023).

Despite growing recognition of technology's potential, empirical research examining its practical implementation in mitigating seasonality within Sri Lanka remains limited. Current literature highlights strategies for seasonal management, including market diversification, pricing and promotional tactics, and infrastructure improvements, but few studies have systematically analyzed the impact of technology-driven approaches on sustainable tourism outcomes in developing economies (Jaroensutasinee et al., 2025; Rosselló & Sansó, 2017; Anwar, Kumar, & Manoharan, 2026; Milton, 2024). Therefore, this study seeks to address this gap by investigating the role of technology-enabled revenue management strategies in mitigating tourism seasonality and promoting sustainable hospitality practices in Sri Lanka. It aims to evaluate the effectiveness of pricing, demand, and market strategies, explore factors influencing technology adoption, and capture insights from key stakeholders, including hotel managers and revenue specialists.

By bridging the gap between technological innovation and sustainable tourism practice, this research offers both scholarly and practical contributions. Academically, it advances understanding of seasonality management and technology adoption in hospitality contexts within developing countries (Kaul, 2023; Kumar et al., 2024; Milton, 2024). Practically, it provides evidence-based recommendations for Sri Lankan hospitality operators and policymakers seeking to stabilize revenues, optimize capacity, and promote sustainability,

contributing to a resilient and equitable tourism industry capable of withstanding seasonal fluctuations (Li, Jin, & Shi, 2018; Williams & Ponsford, 2009).

Literature Review

Theoretical Framework

Technology-Organization-Environment (TOE) Framework

The TOE framework (Tornatzky & Fleischer, 1990) provides a comprehensive lens to understand technology adoption by examining technological, organizational, and environmental contexts. Technological factors include relative advantages, compatibility, complexity, and trialability of innovations. In the hospitality sector, it is focused on the availability and usefulness of digital tools such as dynamic pricing systems, demand forecasting applications, customer analytics platforms, and digital marketing technologies (Anwar, Kumar, & Manoharan, 2026; Milton, 2024; Bayoumi et al., 2013; Lei & Ouyang, 2017; Sato, 2021; Tian et al., 2018). These technologies enable hotels to make real-time decisions regarding pricing, demand planning, and customer engagement (Ivanov & Webster, 2017). Furthermore, these technological innovations allow real-time adjustments in inventory, improving occupancy rates during peak and off-peak seasons (Bayoumi et al., 2013; Lei & Ouyang, 2017; Sato, 2021; Tian et al., 2018).

Organizational factors encompass firm size, management support, structural flexibility, resource availability, and organizational readiness. They, influence the adoption and effectiveness of technology-enabled strategies (Kaul, 2023; Zajia, Díaz, & Cachipuendo, 2025). Hotels with strong leadership commitment and adequate resources are more capable of implementing technology-driven pricing, forecasting, and marketing practices effectively . Organizational readiness, including leadership commitment and resource slack, supports the integration of these tools (Anser et al., 2020; Ghazi et al., 2024).

Environmental factors include market competition, customer expectations, tourism trends, and government policies (Awa & Ojiabo, 2016; Awa, Ojiabo, & Orokor, 2017; Alkhawaldeh et al., 2024; Hanifah, Lee& Abdul, 2025). Increasing competition and changing customer preferences encourage hotels to adopt digital technologies to improve pricing decisions, forecast demand more accurately (Budeanu, 2009; Williams & Ponsford, 2009; Xiang & Formica, 2007) and strengthen market visibility through digital marketing (Buhalis & Sinarta,

2019). Therefore, the TOE framework provides a useful lens to understand how technology-driven revenue management strategies support sustainable tourism performance.

Triple Bottom Line (TBL) Framework

Sustainability in tourism is effectively conceptualized through the Triple Bottom Line (TBL) framework, which balances economic, social, and environmental dimensions (Lindell et al., 2022; Ozturkoglu et al., 2021; Stoddard et al., 2012). In the hospitality sector, technology-driven revenue management strategies contribute to all three dimensions.

Economic sustainability focuses on profitability and financial resilience. Revenue management strategies, particularly dynamic pricing and demand forecasting, enhance financial performance (Farahmand et al., 2025; Lima Santos et al., 2024). They involve optimizing occupancy and pricing strategies, reducing revenue losses during low-demand periods and ensuring long-term viability (Hayes & Miller, 2011).

Social sustainability addresses the impact of tourism on communities and stakeholders. Technology-driven strategies, such as CRM systems and social media marketing, enable engagement with stakeholders including guests and promote local tourism experiences (Kumar et al., 2025). Furthermore, social sustainability create employment opportunities during off-peak seasons, and support cultural preservation (Cherenkov et al., 2024; Yu et al., 2025). These practices support customer satisfaction, community participation, and destination attractiveness (Buhalis & Amaranggana, 2015).

Environmental sustainability emphasizes minimizing ecological impact. Smart revenue management can support energy efficiency in accommodation, reduce waste, and promote eco-friendly transportation options by improving occupancy management and operational efficiency (Bakshi & Singh, 2024; Karvounidi, Alexandropoulou, & Fousteris, 2024; Semwal et al., 2024). This helps reduce unnecessary energy consumption, food waste, and operational inefficiencies while supporting sustainable tourism practices (Gössling et al., 2018). By integrating TBL with TOE, hospitality organizations can align technology adoption with sustainability goals, optimizing revenue while mitigating seasonal and environmental challenges.

Sustainable Tourism Practices Amidst Seasonality

Tourism seasonality reflects fluctuations in tourist arrivals and demand across the different periods of the year (Butler, 2001). They are influenced by climatic, cultural, and economic factors (Duro & Turrión-Prats, 2019; Jaroensutasinee et al., 2025; Ridderstaat et al., 2014; Zhang et al., 2022). These fluctuations pose operational and financial challenges, often leading to underutilized capacity during off-peak periods, and overcrowding, inefficient resource utilization, and environmental strain during peak periods (Bisht et al., 2025; Dalir, 2024; Stojčić, Mikulić, & Vizek, 2022). Technology-driven revenue management strategies executed through sustainable means can mitigate these challenges. Sustainable accommodation reduces ecological impact through energy efficiency, waste management, and eco-certifications (Arbelo et al., 2025; Janjusevic & Perovic, 2020; Velaoras et al., 2025). Sustainable transportation promotes low-carbon travel through public transport, electric vehicles, and active mobility options (Gallo & Marinelli, 2020; Glazener & Khreis, 2019; Zhang et al., 2024). Sustainable engagement fosters responsible tourist behavior, community participation, and cultural preservation (Chauhan, 2025; Luekveerawattana, Taylor, & Poprateep, 2025; Tabatabaei, Oshriyeh, & Beldona, 2025). Studies indicate that integrating sustainability into seasonality management enhances environmental and economic outcomes, such as higher occupancy and better resource utilization in off-peak periods (Dalir, 2024). As a result, sustainable tourism practices can improve resource utilization, reduce environmental pressures, and enhance economic resilience throughout seasonal fluctuations.

Technology-Driven Revenue Management

Technology-driven revenue management refers to the use of digital technologies to optimize pricing, forecast demand, and improve market performance through data-driven decision-making (Bodea & Ferguson, 2014; Ernestivita, Kumar, & Subagyo, 2025; Karunakaran et al., 2024; Vives, Jacob, & Payeras, 2018).

Technology-driven pricing strategies use real-time data on occupancy levels, customer behavior, booking patterns, and market conditions to adjust room rates dynamically behavior (Bayoumi et al., 2013; Lei & Ouyang, 2017; Sato, 2021; Tian et al., 2018). Dynamic pricing enables hotels to maximize revenue during peak demand periods while attracting customers during low-demand periods through competitive pricing (Hayes & Miller, 2010). Furthermore,

dynamic pricing models can be combined with value based pricing models to align rates with customer perceptions (Awal et al., 2025; Tian, Liu, & Jiang, 2023).

Technology-driven demand management strategies utilize historical booking data, predictive analytics, and forecasting models to estimate future demand (Ampountolas & Legg, 2021; Hewapathirana, 2025; Law et al., 2019). Accurate forecasts assist hotels in workforce planning, inventory management, and capacity allocation, resulting in improved operational efficiency and resource utilization (Song & Li, 2008).

Technology-driven marketing strategies employ digital marketing platforms, social media, search engine optimization (SEO), customer analytics, and online booking channels to enhance customer engagement and market visibility (Selvakumar, 2025; Sigala, 2018; Theodorakopoulos, Theodoropoulou, & Bakalis, 2024). These technologies allow hotels to reach targeted customer segments, evaluate marketing effectiveness, and improve customer acquisition and retention (Buhalis & Law, 2008).

Hence, empirical studies show that tech-driven revenue management strategies improves occupancy, reduces waste, and supports sustainability investments (Adediran, Mohd Aini, & Ajibade, 2025; Basu, 2024; Turban, Pollard, & Wood, 2018).

Empirical Relationships

Studies reveal that technology-driven revenue management strategies positively influence sustainable tourism outcomes. Dynamic pricing improves occupancy management and resource allocation toward eco-friendly practices (Keswani, 2025; Gao et al., 2017; Rospigliosi, 2020; Xu, Xiao, & Gursoy, 2017). Demand forecasting supports sustainable transportation planning, while analytics tools promote responsible tourist behavior and community engagement (Adewuyi et al., 2024; McKenna & Hanrahan, 2024; Patrichi, 2024). Eco-certifications and value-based pricing incentivize sustainability, improving financial performance and loyalty (Bhajon & Akhi, 2025; Vironika & Maulida, 2025; Vujko et al., 2025)

Literature Gap

Despite extensive international research on tourism seasonality, sustainable tourism practices, and technology-driven revenue management, there remains a significant contextual and

empirical gap within the Sri Lankan hospitality sector. While prior studies have examined seasonality drivers (Dwyer et al., 2004; Rosselló & Sansó, 2017; Jaroensutasinee et al., 2025) and the financial benefits of revenue management technologies (Bayoumi et al., 2013; Lei & Ouyang, 2017; Tian et al., 2018), most evidence is derived from developed tourism markets, with limited focus on developing economies such as Sri Lanka (Kaul, 2023; Milton, 2024). Furthermore, although sustainable tourism frameworks emphasize economic, social, and environmental balance (Budeanu, 2005; Williams & Ponsford, 2009; Lindell et al., 2022), existing studies rarely integrate these sustainability dimensions with technology-enabled revenue strategies in a unified analytical model. Current Sri Lankan literature primarily addresses traditional seasonality management approaches, such as pricing and promotions, without systematically assessing the role of advanced technologies such as AI-driven pricing, predictive analytics, and CRM systems in mitigating seasonal fluctuations (Anwar et al., 2026; Rosselló & Sansó, 2017). Additionally, limited empirical attention has been paid to organizational and environmental determinants of technology adoption using theoretical lenses such as TOE (Awa & Ojiabo, 2016; Ghazi et al., 2024). Consequently, there is a clear research gap regarding how technology-enabled revenue management strategies influence sustainable tourism performance under seasonal demand conditions in Sri Lanka, necessitating context-specific empirical investigation to inform both theory and practice (Gamage & Kalinga, 2025; Kumar et al., 2024).

Conceptual Framework and Hypotheses

The conceptual framework links independent variables (Pricing Strategies, Demand Strategies, Market Strategies) with dependent variables (Sustainable Accommodation, Sustainable Transportation, Sustainable Engagement) (See Figure 01).

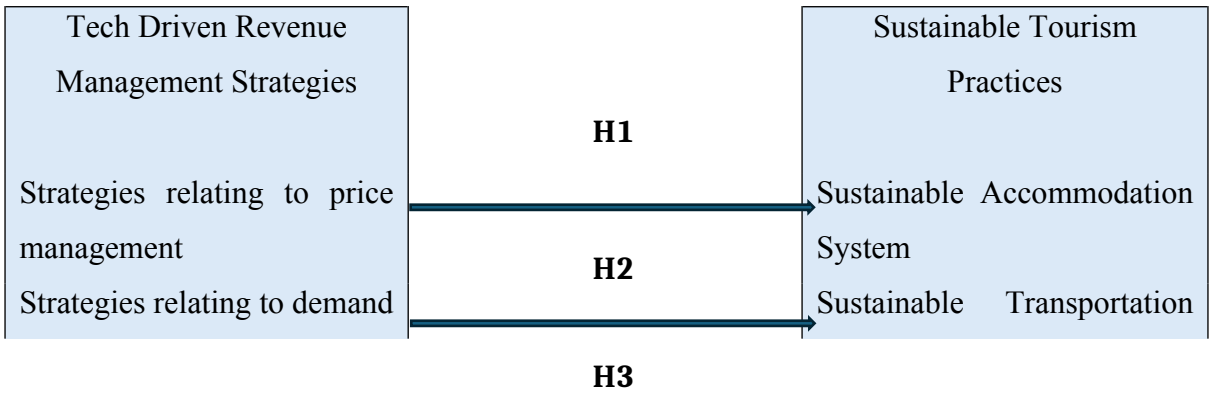

Figure 01: Conceptual Framework

The hypotheses guiding this research are:

1. H1: Pricing strategies significantly influence sustainable tourism seasonality in Sri Lanka.
2. H2: Demand strategies significantly influence sustainable tourism seasonality in Sri Lanka.
3. H3: Market strategies significantly influence sustainable tourism seasonality in Sri Lanka.

The literature indicates that technology-driven revenue management strategies can effectively mitigate seasonality challenges while promoting sustainable tourism in Sri Lanka. Dynamic pricing, demand forecasting, and market analytics not only optimize revenue but also enhance environmental, social, and economic sustainability. However, there is a notable gap in understanding the specific contextual factors affecting adoption in Sri Lanka. This study addresses this gap, providing insights to support informed policy-making and strategic planning for sustainable hospitality practices.

Research Methodology

This study employs a quantitative research design guided by the Research Onion framework (Abdelhakim, 2021; Saunders et al., 2019) to examine the impact of technology-enabled revenue management strategies on sustainable tourism practices in Sri Lanka. A positivist philosophy underpins the quantitative component, facilitating structured data collection through Likert-scale questionnaires to test hypotheses derived from the Technology-Organization-Environment (TOE) (Tornatzky & Fleischer, 1990) and Triple Bottom Line (TBL) frameworks (Lindell et al., 2022; Ozturkoglu et al., 2021; Stoddard et al. 2012)This operationalization table of the above is provided below in Table 01. The quantitative data, gathered from 161 stakeholders across diverse hospitality establishments via purposive-convenience sampling (Etikan et al., 2016; Mason et al., 2010), are analyzed using descriptive

statistics (Reid & Andereck, 1989), correlation (Kafle, 2019), and regression analyses in SPSS to evaluate relationships (Lee & Manorungrueangrat, 2018) between independent variables,pricing, demand, and market strategies and dependent variables, including sustainable accommodation, transportation, and community engagement. Ethical considerations, including participant consent and confidentiality, are strictly maintained. The study uses a cross-sectional time horizon and integrates primary (survey) and secondary (industry reports, SLTDA data) data sources, ensuring robust triangulation, reliability (Cronbach's alpha), and validity (pre-testing and expert review) of the findings (Rheeders & Meyer, 2022).

This study adopts a mixed-methods research design grounded in a pragmatist research philosophy, which emphasizes the use of appropriate methods to address practical research questions (Saunders et al., 2019; Abdelhakim, 2021). This philosophical stance supports the integration of quantitative and qualitative evidence to explore complex organizational and sustainability issues within the hospitality sector. The research draws upon the Technology-Organization-Environment (TOE) framework and the Triple Bottom Line (TBL) framework as its theoretical foundations. The TOE framework explains technology adoption through technological, organizational, and environmental factors (Tornatzky & Fleischer, 1990), while the TBL framework evaluates sustainability through economic, social, and environmental dimensions (Lindell et al., 2022; Ozturkoglu et al., 2021; Stoddard et al. 2012). A survey strategy was employed to collect quantitative data, complemented by semi-structured interviews to obtain qualitative insights (Saunders et al., 2019). Quantitative survey questionnaire operationalized in Table 01. A purposive-convenience sampling technique was used to identify participants with relevant industry experience and knowledge comprised of hotel managers, revenue managers, and tourism professionals (Etikan et al., 2016; Mason et al., 2010). The quantitative component included 161 valid survey responses, and reported 80.5% response rate, while the qualitative phase involved 10 semi-structured interviews with hotel managers.

Quantitative data were analyzed using IBM SPSS Statistics. Descriptive statistics were used to summarize respondent characteristics and study variables. Reliability of the quantitative measures was assessed using Cronbach's alpha coefficients, with all constructs exceeding acceptable threshold levels. Pearson correlation analysis examined associations among variables, while multiple regression analysis assessed the influence of pricing, demand management, and market strategies on sustainable tourism outcomes. Prior to hypothesis

testing, assumptions relating to normality, multicollinearity, and linearity were assessed. To reduce the potential effects of common method bias, respondents were assured of anonymity, questionnaire items were carefully structured, and statistical diagnostics were examined during data analysis. Qualitative data were analyzed using thematic analysis following the procedures proposed by Braun and Clarke (2006). Interview transcripts were manually coded to identify recurring themes related to technology adoption and sustainability practices. AI-assisted text analysis tools were used as a supplementary validation mechanism to support pattern recognition and enhance analytical consistency. Ethical standards were strictly maintained throughout the research process. Participants received information regarding the purpose of the study and provided informed consent before participation. Confidentiality and anonymity were assured, and all survey responses and interview recordings were securely stored and used solely for academic purposes.

Table 01: Operationalisation

Variable Type	**Variable**	**Attributes / Dimensions**	**Survey Questions (Likert 1–5)**	**Source in Literature Review**
Tech-Driven Revenue Management Strategies	**Tech-Driven Pricing Strategies (AVG_PS)**	Dynamic Pricing, Open Pricing, Value-Based Pricing	PS1: I believe dynamic pricing strategies can optimize revenue during peak and off-peak seasons. PS2: I am confident in my understanding of how dynamic pricing strategies work. PS3: Dynamic pricing	Bayoumi et al., 2013; Lei & Ouyang, 2017; Sato, 2021; Tian et al., 2018; Buhalis & Leung, 2018; Kaul, 2023; Sivakarthi & Vinora, 2025

			strategies are effective in adjusting room rates based on demand fluctuations.	
	Tech-Driven Demand Strategies (AVG_DS)	Forecasting Models, Machine Learning, Time-Series Analysis	DS1: Demand forecasting strategies help in predicting tourist arrivals accurately. DS2: I consider demand forecasting strategies essential for managing inventory effectively. DS3: Using demand forecasting strategies improves operational efficiency in my establishment.	Wu, Song, & Shen, 2017; Anwar, Kumar, & Manoharan, 2026; Milton, 2024; Buhalis & Leung, 2018; Zajia, Díaz, & Cachipuendo, 2025
	Tech-Driven Market Strategies (AVG_MS)	Data Analytics, CRM, Market Segmentation, Competitive	MS1: Data analytics provide valuable insights into customer	Selvakumar, 2025; Sigala, 2018; Theodorakopoulos, Theodoropoulou, & Bakalis, 2024;

		Analysis	behavior and preferences. MS2: I use data analytics to tailor marketing strategies to different customer segments. MS3: Data-driven decisions based on analytics contribute to sustainability efforts in my business.	Buhalis & Leung, 2018; Kaul, 2023
Sustainable Tourism Practices Amidst Seasonality	**Sustainable Accommodation Systems (AVG_SA)**	Eco-friendly Amenities, Energy Efficiency, Waste Management, Certifications	SA1: Offering sustainable accommodation options is important for sustainable tourism. SA2: Sustainable accommodation practices attract environmentally conscious tourists. SA3: Sustainable	Agnihotri & Tripathi, 2025; Arbelo et al., 2025; Janjusevic & Perovic, 2020; Velaoras et al., 2025; Buhalis & Leung, 2018; Gamage & Kalinga, 2025

			accommodation practices benefit the local environment and community.	
	Sustainable Transportation Systems (AVG_ST)	Public Transit, EVs, Bike-Sharing, Walking Tours	ST1: Sustainable transportation options reduce tourism's carbon footprint. ST2: Promoting sustainable transportation aligns with responsible tourism. ST3: Sustainable transportation enhances the overall tourism experience.	Gallo & Marinelli, 2020; Glazener & Khreis, 2019; Zhang et al., 2024; Buhalis & Leung, 2018
	Sustainable Engagement Systems (AVG_SE)	Community Participation, Local Partnerships	SE1: Engaging with local communities enhances the tourism experience. SE2: Community engagement positively	Chauhan, 2025; Luekveerawattana, Taylor, & Poprateep, 2025; Tabatabaei, Oshriyeh, & Beldona, 2025; Buhalis & Leung, 2018; Gamage & Kalinga, 2025

			impacts the reputation of my/our establishment. SE3: Supporting local communities is important for sustainable tourism development.	

Quantitative Data Analysis

The descriptive statistics demonstrate a consistently high level of agreement across all constructs, indicating strong adoption and perceived importance of both technology-driven revenue management and sustainability practices in Sri Lanka's hospitality sector. Pricing Strategies report a high mean (M = 4.47, SD = 0.50), reflecting strong consensus on the value of dynamic and technology-enabled pricing in managing seasonal demand fluctuations. Demand Strategies also show a high mean (M = 4.52, SD = 0.40), suggesting widespread confidence in forecasting and predictive analytics as tools for aligning operational capacity with demand variability. Market Strategies record a similarly strong mean (M = 4.56, SD = 0.40), indicating positive perceptions of data-driven marketing, albeit with slightly greater variation across establishments. With regard to sustainability outcomes, Sustainable Accommodation reports the highest mean (M = 4.59, SD = 0.38), highlighting a strong commitment to eco-friendly accommodation practices, while Sustainable Transportation (M = 4.57, SD = 0.39) reflects consistent support for low-impact mobility initiatives. Sustainable Engagement also records a high mean (M = 4.58, SD = 0.41), underscoring the importance placed on community involvement and stakeholder partnerships. Overall, the relatively low standard deviations across all constructs indicate a high degree of agreement among respondents, reinforcing the view that technology-enabled revenue management practices are

well institutionalised and closely aligned with sustainability objectives in a seasonally sensitive tourism context.

Table 02 below shows that technology-driven revenue management strategies are positively and significantly associated with sustainability outcomes in the hospitality sector (N = 161). Pricing strategies display moderate positive correlations with sustainable accommodation ($r = 0.440$, $p < .001$) and sustainable transportation ($r = 0.443$, $p < .001$), and a stronger association with sustainable engagement ($r = 0.510$, $p < .001$). Demand strategies demonstrate moderate to strong relationships across all sustainability dimensions, with correlations of $r = 0.396$ ($p < .001$) for accommodation, $r = 0.499$ ($p < .001$) for transportation, and the strongest observed relationship with sustainable engagement ($r = 0.584$, $p < .001$). Market strategies show weaker but statistically significant effects, particularly with sustainable accommodation ($r = 0.229$, $p = .022$), while exhibiting moderate relationships with sustainable transportation ($r = 0.393$, $p < .001$) and sustainable engagement ($r = 0.501$, $p < .001$). Overall, the results indicate that pricing and demand-oriented revenue management practices exert stronger and more consistent influences on sustainability performance than market strategies, highlighting the central role of dynamic pricing and demand forecasting in supporting environmental and social sustainability in hospitality operations.

Table 02: Correlation Statistic

Correlations		AVG_SA	AVG_ST	AVG_SE
AVG_PS	Pearson Correlation	.440**	.443**	.510**
	Sig. (2-tailed)	<.001	<.001	<.001
	N	161	161	161
AVG_DS	Pearson Correlation	.396**	.499**	.584**
	Sig. (2-tailed)	<.001	<.001	<.001
	N	161	161	161
AVG_MS	Pearson Correlation	.229*	.393**	.501**
	Sig. (2-tailed)	.022	<.001	<.001
	N	161	161	161

Source: SPSS Generated

The regression assumptions analysis confirms that the model satisfies all key diagnostic requirements, supporting the robustness and validity of the regression results. Normality of

residuals is evidenced by the histogram, which closely follows a bell-shaped curve with a near-zero mean, a standard deviation of 0.985, and a sample size of 100, indicating that residuals are symmetrically distributed around zero. The standardized residual and scatter plots further demonstrate that residuals are randomly dispersed with no systematic patterns, confirming linearity and the absence of heteroscedasticity, as the variance of errors remains constant across levels of the independent variables. Autocorrelation was assessed using the Durbin–Watson statistic, which yielded a value of 2.434; although this indicates a slight negative autocorrelation, the value is sufficiently close to the ideal benchmark of 2, suggesting that residuals are largely independent and do not violate regression assumptions. Additionally, multicollinearity diagnostics show strong model stability, with tolerance values ranging from 0.577 to 0.606 and Variance Inflation Factor (VIF) values between 1.651 and 1.733, all well within acceptable thresholds (tolerance > 0.2; VIF < 5). Collectively, these diagnostics demonstrate that the regression model is free from major assumption violations, ensuring reliable coefficient estimates and reinforcing the credibility of the relationship between pricing, demand, and market strategies and sustainable accommodation outcomes.

The regression analysis was conducted to examine the impact of technology-driven revenue management strategies on Sustainable Accommodation (AVG_SA) within Sri Lanka's hospitality sector. The independent variables included Pricing Strategies (AVG_PS), Demand Strategies (AVG_DS), and Market Strategies (AVG_MS), while Sustainable Accommodation served as the dependent variable. This analysis evaluates both the overall explanatory power of the model and the individual contribution of each predictor.

The Table 03 below explains 23.1% ($R^2 = 0.231$) of the variance in Sustainable Accommodation, indicating a moderate explanatory power for a behavioural and organisational study. The Adjusted R^2 of 0.206 confirms that the model retains explanatory strength after accounting for the number of predictors. The standard error of 0.339 suggests reasonable predictive accuracy. The Durbin–Watson statistic of 2.434, being close to the ideal value of 2, indicates minimal autocorrelation among residuals, supporting the independence assumption and overall reliability of the regression results.

Table 03: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin–Watson

1	.480	.231	.206	.33916	2.434

Predictors: (Constant), AVG_MS, AVG_PS, AVG_DS

Dependent Variable: AVG_SA

Source: SPSS Generated

The ANOVA test assesses whether the regression model as a whole is statistically significant, that is, whether the independent variables jointly explain variation in Sustainable Accommodation. The ANOVA results indicate that the regression model is highly significant ($F = 9.587$, $p < .001$), confirming that the three revenue management strategies collectively exert a statistically meaningful influence on Sustainable Accommodation. This finding validates the suitability of the model and demonstrates that technology-driven revenue management strategies play an important role in shaping sustainability-oriented accommodation practices (See Table:04)

Table 04: ANOVA Statistic Summary

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	3.308	3	1.103	9.587	< .001
Residual	11.043	96	.115		
Total	14.351	99			

Dependent Variable: AVG_SA

Predictors: (Constant), AVG_MS, AVG_PS, AVG_DS

Source: SPSS Generated

The coefficients table provides insight into the direction, magnitude, and significance of each independent variable's effect on Sustainable Accommodation. The regression results show that Pricing Strategies (AVG_PS) have a significant positive effect on Sustainable Accommodation ($\beta = 0.353$, $p = .003$), indicating that greater adoption of dynamic and technology-enabled pricing is associated with stronger implementation of sustainable accommodation practices. Demand Strategies (AVG_DS) also exhibit a significant positive

influence (β = 0.253, p = .034), suggesting that accurate demand forecasting and predictive analytics enable hotels to optimise resource use, reduce waste, and support environmentally responsible operations. In contrast, Market Strategies (AVG_MS) display a negative but statistically insignificant effect (β = −0.108, p = .348), implying that while data-driven marketing may influence other sustainability dimensions, it does not directly contribute to accommodation-related sustainability outcomes in a meaningful way (See Table:05)

Table 05: Regression Coefficients Statistic Summary

Predictor	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	2.775	.443	–	6.266	< .001	–	–
AVG_PS	.268	.088	.353	3.038	.003	.594	1.684
AVG_DS	.242	.113	.253	2.146	.034	.577	1.733
AVG_MS	-.104	.110	-.108	-.942	.348	.606	1.651

Dependent Variable: AVG_SA

Source: SPSS Generated

This regression equation highlights that pricing and demand strategies are the primary drivers of Sustainable Accommodation within the model. Accordingly, Based on the standardized coefficients, the regression model is expressed as:

$$AVG\_SA = 2.775 + 0.353(AVG\_PS) + 0.253(AVG\_DS) - 0.108(AVG\_MS)$$

The hypothesis testing results indicate that all three independent variables show statistically significant relationships with sustainability when tested individually ($p < .05$). However, when considered simultaneously within the regression model, only Pricing Strategies and Demand Strategies retain significant explanatory power for Sustainable Accommodation. This suggests that core revenue optimisation and forecasting functions exert a stronger and more direct influence on accommodation sustainability than marketing-driven strategies (see Table 06)

Table 06: Linear Regression Hypothesis Testing

Hypothesis	Independent Variable	B	Sig.	Decision

H1	PS	0.334	< .001	Accepted
H2	DS	0.379	< .001	Accepted
H3	MS	0.219	.022	Accepted

Source: SPSS Generated

Qualitative Data Analysis

The word cloud below provides an analysis of tech-driven pricing techniques used in Sri Lanka's hotel industry (see Figure 02). The use of phrases like "smart pricing," "demand forecasting," and "technology" implies a dynamic approach that automatically modifies the cost of goods and services. Participants believe that technology-driven pricing choices are crucial for enhancing operational effectiveness and financial success, as shown by “revenue management”, “occupancy”, and “profitability”. Frequently frequent terms pertaining to “data analytics”, “consumer preferences”, and “market trends” imply that real-time data, rather than conventional set pricing strategies, are increasingly influencing price choices. Terms like “sustainability”, “resource utilization”, and “efficiency” are included, which further suggests that respondents understand how smart pricing helps to maximise resource consumption and promote sustainable tourism goals.

Figure 02: Word Cloud Analysis for Tech Driven Pricing Strategies

Interview participants consistently emphasized the importance of technology-enabled pricing strategies in responding to market fluctuations and changing market conditions.

> *"Ah… we actually use a system that changes prices… based on demand. however this is not fully automated. So, during low season, we lower prices… and, ah, that helps bring in more guests… otherwise, rooms stay empty."*
>
> Interviewee 3

> *"In order to analyse pricing data, we use Excel. I mean Excel modelling tools. Here, we assess pricing scenarios…. This supports successful price management. This allowed us to systematically analyse costs, market trends, and pricing consequences, since we do not have any in-house technology."*
>
> Interviewee 6

Several participants highlighted that dynamic pricing tools and strategies assist hotels in adjusting room rates according to customer booking behavior, occupancy levels, and seasonal trends. Additionally, respondents pointed out that improved forecasting capabilities maximise revenue during peak seasons while minimising revenue losses during times of low demand. As a result, this helps profit optimization. However, they stressed that there are currently insufficient resources to create robust automated systems since the majority of current systems rely on both technology and human labour. These findings suggest that technology-supported pricing strategies play a significant role in promoting both business performance and sustainable hospitality management practices.

Then, the word cloud analysis identifies the themes covered under the tech-driven demand management strategies (see Figure 03). Frequently occurring terms such as "historical data", "predictive models", "data analytics", and "sales forecast" indicate the importance of cleaning raw data to uncover actionable patterns. The presence of terms including "seasonality", "market trends", "customer behavior", and "real-time data" suggests that hotels rely on variety of data-information sources to predict future demand. Additionally, concepts such as "resource allocation", "capacity planning", "revenue optimization", and "operational efficiency" demonstrate that demand forecasting supports strategic, financial and operational decision-making. These findings indicate that forecasting capabilities are increasingly recognized as an essential component of technology-enabled revenue management and sustainable business performance.

Figure 03: Word Cloud Analysis for Tech Driven Demand Management Strategies

Interview participants consistently emphasized the value of demand forecasting in improving organizational decision-making.

> *"We rely on, ah… forecasting tools… to understand demand. So, we kind of know… when guests are coming… and then we plan everything better… staff, food, everything… so we don't overuse or waste resources."*

Interviewee 4

> *"To find out what our customers like and don't like, our marketing team studies their conduct. You know they perform customer behaviour analysis…They analyse past booking records. I think this supports accurate demand forecasting. This also helps inventory planning. We can decide staff requirement"*

Interviewee 1

Several respondents noted that historical booking patterns, seasonal fluctuations, and customer trends are regularly analyzed to predict future demand levels. Participants further highlighted that forecasting tools assist managers in optimizing room inventory and staffing requirements. Many interviewees reported that accurate forecasts reduce uncertainty and improve resource utilization, leading to greater operational efficiency and revenue performance. The findings suggest that technology-supported demand forecasting enables hospitality establishments to respond proactively to market changes while supporting long-term sustainability objectives.

The word cloud highlights the key dimensions of digital marketing (see Figure 04). The largest terms, such as "Digital Marketing", "SEO" (Search Engine Optimization), "Social Media", "Content Marketing", and "Data Analytics", indicate the most frequently emphasized concepts. The prominence of these words suggests that digital marketing is strongly associated with online presence, content creation and audience engagement. Other terms, including "ROI", (Return on Investment), "Conversion", "Target Audience", and "Brand Awareness", show that achieving measurable business outcomes remains a central objective. Overall, the word cloud demonstrates that successful digital marketing relies on integrating technology, analytics, and customer-focused communication strategies.

Figure 03. Word Cloud Analysis for Tech Driven Marketing Strategies

The qualitative findings reveal that digital marketing is perceived as a strategic approach for enhancing customer engagement and business performance

> *"Ah… we use digital marketing a lot… like social media and booking sites. During off-season, we target, ah… different types of travelers… and that helps us keep a steady flow of guests."*
>
> Interviewee 7

> *"Our digital marketing team performs Search engine optimization (SEO). This is achieved by metadata analysis and optimizing website content. You know... this improves our technical performance and visibility. Hmm... The marketing results of this are then assessed using ROI measures."*

Interviewee 4

Participants frequently emphasized the importance of social media platforms, content creation, SEO in reaching target audiences. Many respondents also stressed the role of analytics in understanding customer behavior and improving marketing and financial outcomes. Overall, the interview data suggests that continuous learning, adaptability, and data-driven strategies are essential for achieving effective digital marketing performance.

Discussion

The descriptive statistics indicate a consistently high level of agreement across all constructs, reflecting widespread adoption and recognition of technology-driven revenue management and sustainable tourism practices within Sri Lanka's hospitality sector. Pricing Strategies (AVG_PS) exhibit a high mean (M = 4.47, SD = 0.50), suggesting strong consensus on the value of dynamic, open, and value-based pricing in managing seasonal demand fluctuations, consistent with literature highlighting the role of real-time, technology-enabled pricing in optimizing revenue during both peak and off-peak periods (Bayoumi et al., 2013; Lei & Ouyang, 2017; Sato, 2021; Tian et al., 2018; Buhalis & Leung, 2018; Kaul, 2023; Sivakarthi & Vinora, 2025). Similarly, Demand Strategies (AVG_DS; M = 4.52, SD = 0.40) reflect confidence in predictive analytics and forecasting models for aligning operational capacity with variable tourist arrivals, supporting prior studies emphasizing that machine learning and time-series analyses enhance both operational efficiency and sustainability outcomes (Wu, Song, & Shen, 2017; Anwar, Kumar, & Manoharan, 2026; Milton, 2024; Buhalis & Leung, 2018; Zajia, Díaz, & Cachipuendo, 2025). Market Strategies (AVG_MS; M = 4.56, SD = 0.40) also receive high ratings, indicating positive perceptions of data-driven marketing and customer analytics, although the slightly larger standard deviation suggests variability in adoption across establishments, consistent with research noting uneven maturity of CRM and analytics integration in hospitality firms (Selvakumar, 2025; Sigala, 2018; Theodorakopoulos, Theodoropoulou, & Bakalis, 2024; Buhalis & Leung, 2018; Kaul, 2023).

Regarding sustainability outcomes, Sustainable Accommodation (AVG_SA) reports the highest mean (M = 4.59, SD = 0.38), demonstrating strong sectoral commitment to eco-friendly lodging practices, including energy efficiency, waste management, and eco-certifications (Agnihotri & Tripathi, 2025; Arbelo et al., 2025; Janjusevic & Perovic, 2020; Velaoras et al., 2025; Buhalis & Leung, 2018; Gamage & Kalinga, 2025). Sustainable Transportation

(AVG_ST; M = 4.57, SD = 0.39) reflects consistent support for low-impact mobility initiatives, such as public transit, electric vehicles, and active travel, indicating alignment with low-carbon tourism strategies (Gallo & Marinelli, 2020; Glazener & Khreis, 2019; Zhang et al., 2024; Buhalis & Leung, 2018). Sustainable Engagement (AVG_SE; M = 4.58, SD = 0.41) demonstrates strong endorsement of community participation and stakeholder collaboration, supporting literature that emphasizes the importance of socio-cultural engagement for responsible and resilient tourism (Chauhan, 2025; Luekveerawattana, Taylor, & Poprateep, 2025; Tabatabaei, Oshriyeh, & Beldona, 2025; Buhalis & Leung, 2018; Gamage & Kalinga, 2025). Overall, the relatively low standard deviations suggest high agreement across constructs, reinforcing that technology-driven strategies are well institutionalized and closely linked to sustainability objectives in a seasonally sensitive context.

Correlation analyses further support these findings, revealing positive and significant relationships between revenue management strategies and sustainability outcomes. Pricing Strategies are moderately correlated with Sustainable Accommodation ($r = 0.440$, $p < .001$) and Sustainable Transportation ($r = 0.443$, $p < .001$), and more strongly associated with Sustainable Engagement ($r = 0.510$, $p < .001$). Demand Strategies demonstrate moderate to strong correlations across all sustainability dimensions- $r = 0.396$ ($p < .001$) for accommodation, $r = 0.499$ ($p < .001$) for transportation, and $r = 0.584$ ($p < .001$) for engagement—highlighting the pivotal role of accurate forecasting in promoting both environmental and social sustainability. Market Strategies exhibit weaker correlations with accommodation ($r = 0.229$, $p = .022$) but moderate associations with transportation ($r = 0.393$, $p < .001$) and engagement ($r = 0.501$, $p < .001$), suggesting that data-driven marketing supports sustainability indirectly, complementing core revenue management functions (Buhalis & Leung, 2018; Kaul, 2023; Selvakumar, 2025). Collectively, these results indicate that Pricing and Demand Strategies exert stronger and more consistent influences on sustainability outcomes than Market Strategies, aligning with prior studies linking dynamic pricing and forecasting to optimized resource allocation, waste reduction, and community engagement (Wu, Song, & Shen, 2017; Anwar, Kumar, & Manoharan, 2026; Milton, 2024).

Regression diagnostics confirm the robustness of the model. Residuals approximate a normal distribution with a near-zero mean and standard deviation of 0.985; standardized residual and scatter plots indicate linearity and homoscedasticity. The Durbin–Watson statistic (2.434) suggests minimal autocorrelation, and multicollinearity diagnostics (tolerance 0.577–0.606;

VIF 1.651–1.733) fall within acceptable ranges, supporting the reliability of regression estimates linking technology-driven revenue management to Sustainable Accommodation.

The regression model explains 23.1% of the variance in Sustainable Accommodation (R^2 = 0.231; Adjusted R^2 = 0.206), with a standard error of 0.339, reflecting moderate explanatory power appropriate for behavioral and organizational studies. ANOVA results indicate statistical significance ($F = 9.587$, $p < .001$), validating that Pricing, Demand, and Market Strategies collectively influence sustainable accommodation practices. Coefficient analysis shows that Pricing Strategies ($\beta = 0.353$, $p = .003$) and Demand Strategies ($\beta = 0.253$, $p = .034$) have significant positive effects, underscoring the central role of dynamic pricing and forecasting in promoting sustainable practices, which aligns with literature demonstrating that revenue management tools are key drivers of environmental efficiency in hospitality. Market Strategies ($\beta = -0.108$, $p = .348$) are negative and insignificant for accommodation outcomes. This may be because traditional marketing mainly focuses on attracting more visitors and increasing consumption, which can conflict with sustainability goals such as reducing environmental impacts and controlling destination overcrowding. Therefore, traditional marketing may contribute less to sustainable accommodation performance. Instead, it may have a greater influence on other sustainability areas, such as stakeholder engagement and sustainable transportation.

The regression equation is expressed as:

$$\mathbf{AVG\_SA = 2.775 + 0.353(AVG\_PS) + 0.253(AVG\_DS) - 0.108(AVG\_MS)}$$

Hypothesis testing confirms that all three strategies are significantly related to sustainability individually ($p < 0.05$), though only Pricing and Demand Strategies remain significant in multivariate regression, highlighting their more direct influence on Sustainable Accommodation. These findings align with prior research emphasizing that technology-enabled pricing and forecasting provide operational flexibility necessary for implementing eco-friendly accommodation while managing seasonal demand fluctuations (Bayoumi et al., 2013; Lei & Ouyang, 2017; Sato, 2021; Tian et al., 2018; Buhalis & Leung, 2018; Kaul, 2023; Sivakarthi & Vinora, 2025).

In conclusion, the quantitative analysis demonstrates that technology-driven revenue management strategies are widely adopted and well-perceived in Sri Lanka's hospitality sector and meaningfully contribute to sustainable tourism practices. Dynamic pricing and demand forecasting emerge as critical levers for balancing profitability and sustainability, while market strategies play a complementary role in supporting stakeholder engagement and sustainable transportation initiatives.

The qualitative findings strongly support the existing literature on technology-driven revenue management in the hospitality industry. Consistent with the TOE framework, participants highlighted the importance of technological capabilities such as dynamic pricing systems, forecasting tools, data analytics, and digital marketing platforms in improving pricing decisions, demand planning, and customer engagement (Anwar, Kumar, & Manoharan, 2026; Awa, Ojiabo, & Orokor, 2017; Díaz, & Cachipuendo, 2025; Tornatzky & Fleischer, 1990). The findings align with Bayoumi et al. (2013); Lei & Ouyang (2017); Sato (2021); Tian et al. (2018) who argue that technology-supported pricing strategies enhance occupancy levels, revenue generation, and profitability through real-time price adjustments based on demand conditions. Similarly, the emphasis on historical data, predictive models, customer behaviour analysis, and forecasting capabilities supports the literature (Ampountolas & Legg, 2021; Hewapathirana, 2025; Law et al., 2019). Accordingly, demand forecasting identified as a critical tool for improving operational planning, resource allocation, and revenue performance. The findings also confirm assertion that digital marketing technologies, including social media, SEO, and customer analytics, strengthen market visibility, customer engagement, and business performance (Selvakumar, 2025; Sigala, 2018; Theodorakopoulos, Theodoropoulou, & Bakalis, 2024).

Furthermore, the reported benefits of improved resource utilization, reduced waste, and efficient capacity management support the Triple Bottom Line perspective. It demonstrates that technology-driven pricing, demand management, and marketing strategies contribute not only to economic sustainability through enhanced profitability but also to environmental sustainability through more efficient use of resources and better management of tourism seasonality (Bakshi & Singh, 2024; Cherenkov et al., 2024; Farahmand et al., 2025; Karvounidi, Alexandropoulou, & Fousteris, 2024; Lima Santos et al., 2024; Semwal et al., 2024; Yu et al., 2025). However, the participants' concerns regarding limited automation and resource constraints suggest that organizational readiness remains an important factor

influencing the effective implementation of technology-enabled revenue management practices.

Conclusion

The findings of quantitative analysis demonstrate that technology-driven revenue management strategies play a pivotal role in fostering sustainable hospitality practices in Sri Lanka. Dynamic pricing and demand forecasting emerge as primary drivers of sustainable accommodation, enabling hotels to optimize occupancy, reduce waste, and improve resource utilization during both peak and off-peak seasons. Market strategies, while less influential on accommodation sustainability, contribute to broader sustainability outcomes, particularly in transportation and community engagement, supporting socio-environmental initiatives. High levels of consensus among respondents indicate that technology adoption is well institutionalized, and correlations between revenue management strategies and sustainability outcomes underscore the operational and strategic alignment of technology with Triple Bottom Line objectives. The regression results confirm that pricing and demand strategies exert stronger and more consistent impacts than market strategies, emphasizing the centrality of core revenue optimization and forecasting functions in promoting eco-friendly practices.

Qualitative study indicated that hotels use dynamic pricing strategies based on demand, customer behavior, occupancy levels, and market trends. Demand forecasting tools supported by historical data, predictive analytics, and customer trend analysis. Furthermore, hotels increasingly rely on digital marketing tools such as social media, SEO, content marketing, and data analytics. Combination of these tools are used to optimize room rates, improve revenue generation, improve brand visibility, enhance customer engagement, and achieve measurable outcomes. However, most strategies still involve a combination of technology and human judgment due to limited automation capabilities. These findings indicate that technological capabilities, managerial adoption and decision-making practices, and market dynamics and customer behaviour collectively support economic performance, operational efficiency, and sustainable resource utilization, thereby aligning with both the TOE framework and the Triple Bottom Line dimensions of economic, environmental, and social sustainability.

The study is limited by its design where the findings rely on participants' perceptions and experiences, which may be subject to personal bias and organizational context. Amidst this

limitation this study contributes to existing literature by extending the application of the TOE framework and Triple Bottom Line perspective within the context of technology-driven revenue management practices in the hospitality industry. It provides empirical insights into how digital pricing, demand forecasting, and marketing strategies support sustainable business performance and organizational competitiveness. The findings offer valuable guidance for hotel managers and practitioners by demonstrating how technology-enabled pricing, forecasting, and marketing tools can improve revenue optimization, operational efficiency, resource utilization, and customer engagement. The study provides evidence for policymakers and tourism authorities to promote digital transformation initiatives within the hospitality sector through technological infrastructure development, training programs, and incentives for technology adoption.

Conflict of Interest

The author declares that they have no conflict of interest.

Availability of Data and Materials

All data and materials as well as software applications support the published claims and comply with field standards. Data can be made available on request by interested parties.

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