



BUSINESS MODELS OF HOSPITALITY INDUSTRY ENTERPRISES: ECONOMIC AND MANAGERIAL ASPECT

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ABSTRACT

Purpose: The study examines the transformation of business models in the hospitality industry in response to digital technologies, platform integration, and changes in consumer behaviour. To identify patterns in business model development and to develop a methodological approach for assessing their effectiveness based on digital maturity and managerial factors.

Design/Methodology/Approach: The article combined elements of a systematic review with empirical research, thereby developing a comprehensive analytical framework for evaluating the effectiveness of business models in the hospitality industry, incorporating digital, financial, and behavioural metrics. The research is based on a combination of statistical analysis and economic-mathematical modelling. The empirical dataset includes 42 hospitality enterprises over the period 2021–2025. Indicators were normalised using min-max transformation, and integral indices of digital maturity and business model effectiveness were constructed through weighted aggregation. The relationships between variables were estimated using multiple regression analysis with control variables (enterprise size, occupancy rate, cost structure, and OTA share). Model validity was tested using R^2 , F-statistics, Durbin–Watson test, and multicollinearity diagnostics.

Research Limitation: The study is limited by the sample size and the focus on retrospective data from 2021–2025, which may restrict generalisation to other regions or future market conditions.

Findings: The results reveal a strong and statistically significant positive relationship between digital maturity and business model effectiveness. The regression model explains 73% of the variance in performance, confirming the dominant role of digital factors compared to traditional operational parameters. A 0.1-point increase in digital maturity leads to measurable improvements in performance indicators. Businesses with higher digital integration demonstrate increased profitability, higher conversion rates, and improved customer lifetime value. At the same time, growing dependence on platform channels affects revenue structure and margins.

Practical Implication: The proposed integrated evaluation model can be used by hospitality enterprises to optimise business models, improve management decisions, and enhance digital transformation strategies. It provides a tool for balancing platform dependence, operational efficiency, and customer-oriented innovation.



Social Implication: The development of digitally integrated and adaptive business models enhances service quality, accessibility, and sustainability in the hospitality sector, thereby supporting broader economic development and consumer welfare.

Originality/Value: The study introduces a comprehensive analytical framework that integrates digital, financial, and behavioural indicators into a unified model to assess business model effectiveness in the hospitality industry, offering both theoretical advancement and practical applicability.

Keywords: *Consumer behaviour. digital maturity. hospitality industry. platform integration. service personalization*

INTRODUCTION

The hospitality industry is changing faster than management approaches can stabilize. Digital platforms, new consumption formats and the growing role of customer experience are no longer trends; they form the basic logic of business operations. Online booking channels, personalised services, and networked ecosystems have radically restructured the mechanisms of value creation. At the same time, the pressure of environmental and social requirements is increasing, forcing businesses to rethink their own development models. In such circumstances, the study of business models is no longer a theoretical issue. It determines competitiveness and adaptability (Banyeva et al., 2025; Salun & Tymoshenko, 2024; Pavliuk et al., 2022).

The relevance of the topic is not only due to technological changes. There is a deeper transformation of the logic of interaction between the enterprise and the consumer. Data is becoming a key resource, and digital ecosystems are changing the way value is created and captured. Traditional approaches are losing their effectiveness. Instead, hybrid models are being formed that combine platform solutions, elements of the sharing economy, and service individualisation.

The research problem is the lack of a consistent understanding of the structure and evolution of business models in this area. Existing approaches are fragmented. They either focus on digitalisation or on sustainable development, without integrating the two into a single concept. The situation is further complicated by the diversity of industry segments, where models operate according to different logics (Deri et al., 2024). This limits the possibility of forming universal management solutions and creates the need for a systematic study of business models of hospitality industry enterprises (Deri et al., 2024; Sobirov et al., 2023; Pugachov et al., 2022).

LITERATURE REVIEW

Diaconu and Duțu (2017) and Zeqiri (2024) describe the transition from traditional models to open digital architectures. The focus is not on the product, but on the mechanism of value creation through interaction networks. The role of digital channels is increasing. However, the

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quantitative measurement of the effect of such changes remains uncertain. Nayak et al. (2022) and Zentner et al. (2022) shift the focus to the structure of electronic models. They detail sales channels, revenue logic, and interaction with platforms. The distinction between hotel operators and alternative accommodation formats is clearly visible. This clarifies the specifics of the segment, but there is no formalisation of the relationship between digitalisation levels and the financial performance of hospitality companies.

A different view is taken by Troisi et al. (2023) and Wynn and Lam (2023). They consider business models by integrating data and IT strategies. Management is shifting towards analytics. The data-driven approach changes the revenue structure and decision-making logic. However, assessing the effectiveness of such transformations remains fragmented, particularly across industry segments (Ramirez et al., 2025; Amirulloh Anwar et al., 2024). They show how digital tools increase customer satisfaction and influence organisational culture. The connection with financial results is not detailed.

This limits the possibility of a comprehensive assessment. The technological impact is revealed by Chen (2024) and Sirivadhanawaravachara (2025). Artificial intelligence optimises operational processes. Costs are reduced and service speed increases. However, there is no systematic interpretation of how these changes restructure the business model as a whole.

The issue of sustainable development is studied by Pastor (2025) and Pergelova et al. (2026). They integrate ESG indicators into the value creation structure. The strategic logic of enterprises is changing. At the same time, the economic effect of such decisions remains insufficiently measured. Akintade and Adetola (2025) and Silber (2025) emphasise the innovation and flexibility of models in tourism. They emphasise the adaptability of management structures to environmental changes. However, the internal relationships between the model elements remain poorly formalised.

Makedon et al. (2025b) and Bondarenko et al. (2025) analyse the strategic level. Scientists have proven the need to synchronise marketing and management decisions in the digital environment. However, there is a lack of tools that allow quantifying the effectiveness of these transformations. The aggregate analysis forms a holistic but incomplete picture of the evolution of business models in the hospitality industry. The main gap is the lack of an integrated approach to performance measurement. This creates the basis for further research.

The aim of the article is to examine the peculiarities of business model formation in the hospitality sector and to develop a methodological approach to assessing their efficiency, taking into account management decisions and digital transformation.

MATERIALS AND METHODS

The empirical base is formed from data on enterprises operating in the hotel and combined services segments. The sample includes 42 entities with different levels of digitalisation. The

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data covers the period of 2021–2025 and reflects financial, operational and digital performance indicators. The information was collected from management reports, CRM systems, and internal analytical platforms.

The methodological approach is based on a combination of statistical analysis, economic and mathematical modelling, and normalisation of indicators. Variables are brought to a comparable form through a min-max transformation. To construct the integral indicators, weight aggregation was applied, taking into account the significance of individual parameters. The dependencies were estimated using the least squares method. The regression model includes digital and operational factors that characterise the activities of hospitality enterprises. Additionally, a correlation analysis was conducted to test the strength of the relationships between the variables. The quality of the model was assessed using the coefficient of determination, F-statistic, and the Durbin-Watson test.

RESULTS AND DISCUSSION

Transformation of business models in the hospitality industry

The digital transformation of the hospitality industry has changed the market structure faster than previous technological waves. Businesses lost their monopoly over the sales channel when online platforms took control of demand and customer communication. At the same time, the share of direct bookings has declined in many segments to 25–35%. Under the influence of this process, classic business models focused on physical assets began to transform into digitally oriented configurations.

The development of the platform economy has changed the logic of competition. Traditional hotels used to compete for location and service, but now they compete for visibility in the digital environment. OTA algorithms determine the supply position and influence demand. Hotel owners are forced to balance between dependence on platforms and the development of their own channels. With the growing role of digital channels, the structure of consumer behaviour has changed. Customers expect quick access to services, personalised offers and transparent information about the quality of service. According to industry reports, more than 70% of bookings in 2025 will be made via mobile devices. Most customers compare at least three options before making a decision. This behaviour necessitates integrating analytics into the business model. Hotels are gradually moving to value co-creation models (Canco et al., 2026; Kliuchnyk et al., 2023).

Today, the industry has a clear differentiation of working business models. Platform models provide scalability and access to global demand. Data-driven models use large amounts of data to predict customer behaviour. Smart models integrate IoT and process automation. Hybrid models combine offline services with digital channels.



The distribution of business models across the industry reflects varying levels of enterprise maturity. Large chains are integrating digital solutions faster, while small businesses are adapting more slowly due to limited resources (Manchanda, 2025). At the same time, it is small players that actively use platforms to enter international markets. This creates a situation where technological asymmetry determines competitive positions (Table 1).

Table 1: Comparison of Business Models in the Hospitality Industry

Model type	Revenue source	Level of digitalisation	Sales Channels	Level of personalisation	Main expenses	Level of scalability
Traditional	Direct sales	Low	Offline	Low	Infrastructure	Low
Platform	Fees, reservations	High	OTA, mobile apps	Medium	Marketing, commissions	High
Data-driven	Analytics, upselling	High	Digital channels	High	IT systems	High
Smart	Automated services	Very high	Integrated systems	High	Innovation	High
Hybrid	Combined revenue	Medium	Online + offline	Medium	Mixed	Medium
Sharing economy	Asset rental	High	Platforms	Medium	Commissions	High
Virtual tourism	Digital Services	Very high	Online	High	Technology	Very high

Source: Batchenko et al. (2023), Hotel Council Aotearoa (2021)

Data analytics is already determining the logic of hospitality management. Businesses track customer behaviour in real time. This allows them to quickly adjust prices, create personalised offers, and more accurately predict demand. Machine learning algorithms are increasingly integrated into revenue management processes. Their use has become a standard practice in large hotel chains. Technological changes have a direct impact on operations. Automated check-in systems, digital keys, and chatbots are changing the format of customer interaction. Service is becoming faster and less resource-intensive. In some segments, staff costs are reduced by 15–20%. At the same time, investments in digital infrastructure and support for IT solutions are growing (Sirivadhanawaravachara, 2025).

Another vector of change concerns sustainable development. Environmental standards are being integrated into business models as part of competitive positioning. Businesses are optimising energy consumption, reviewing approaches to resource use, and changing service logic. Customer behaviour is also transforming. In 2024, about 55% of consumers will consider environmental characteristics when choosing a hotel (Lesik et al., 2021). Industry dynamics confirm these trends. The post-crisis recovery is accompanied by the rapid growth of digital



interaction channels. Online platforms are becoming the dominant sales tool. Industry revenues have already exceeded pre-pandemic levels in 2024.

This indicates a structural restructuring of the market in which technology and sustainability are shaping a new development model (Comcast Business, 2025; Pavliuk et al., 2022).

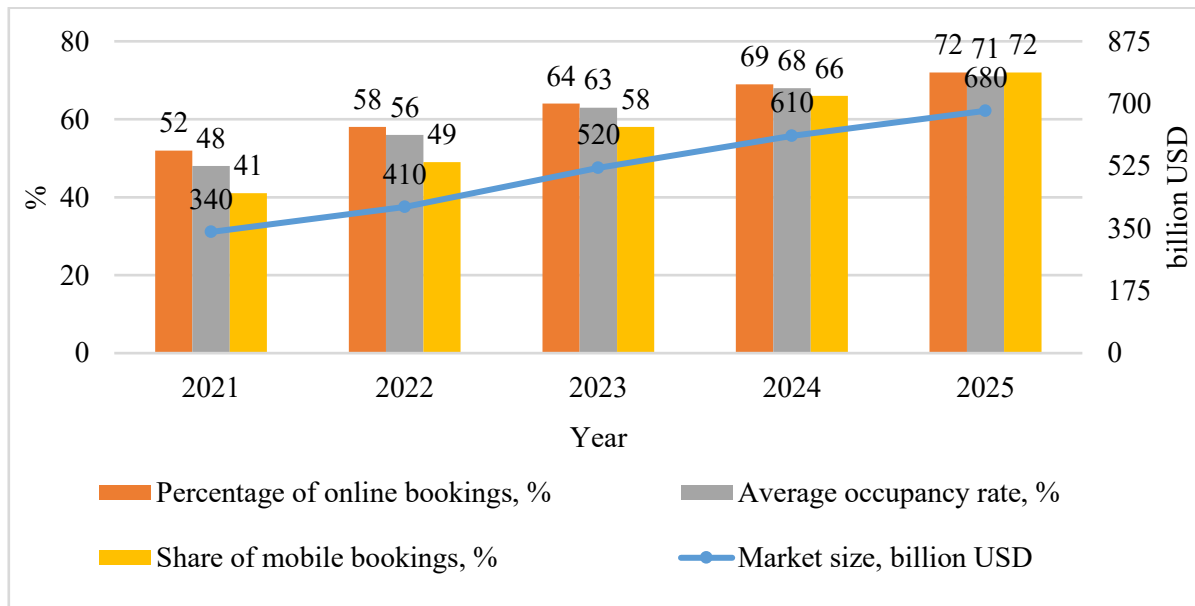


Figure 1: Trends in Key Metrics of the Global Hospitality Industry, 2021–2025
Source: Comcast Business (2025), Regent Financial (2025)

The growth of online channels is accompanied by increased competition. Companies are forced to invest in digital marketing. Advertising costs in some segments reach 18% of revenue. At the same time, there is a dependence on digital platforms. The share of bookings through third-party services exceeds 60% in many countries, creating risks to control over customer data. As a result, companies are looking for ways to return customers through their own channels (Radović et al., 2025).

Innovative technologies create new service formats. Virtual reality is used to showcase rooms, while AI optimises prices and recommendations. The Internet of Things automates resource management. As a result, the structure of the value the customer receives is changing. Changes in business models affect the financial performance of enterprises. Profitability depends on the level of digital integration (Makedon et al., 2025a). Companies with a high level of digitalisation demonstrate higher profitability, which is confirmed by the following comparative analysis (Table 2).



Table 2: Assessment of the effectiveness of business models in the hospitality industry

Model type	Profitability, %	Share of online sales, %	Marketing expenses, %	Customer satisfaction level
Traditional	12	28	10	Medium
Platform	18	65	16	High
Data-driven	24	72	14	Very high
Smart	26	75	15	Very high
Hybrid	20	55	13	High
Sharing economy	22	80	12	High
Virtual	28	90	11	Very high

Source: *Business Research Insights (2025), PwC Middle East (2025)*

The analysis shows that the most efficient models are those with a high level of digitalisation. They demonstrate higher profitability and better adaptability to changes in demand. Platform solutions provide scalability but reduce customer control. Data-driven models create long-term competitive advantages. At the same time, the role of strategic planning is growing, with businesses having to take into account both technological and behavioural factors.

Adaptive Business Models for Hospitality Companies

Adaptation of the business model in the hospitality industry is unfolding through revisions to internal processes and ways of interacting with clients. Companies are changing the structure of their value proposition. They are shifting the focus towards fast service and personalisation of service. These changes cover both the operational circuit and the digital infrastructure. The adoption of CRM solutions exceeded 65% among enterprises in 2025, indicating the systemic digitalisation of customer interaction.

The structure of the business model is gaining a clearer architecture. It integrates several interconnected elements that function as a single system. The value proposition is formed at the intersection of service characteristics and digital functions. Service creation and delivery processes are being transformed by automation and platform solutions. Monetisation mechanisms are becoming more complex. Companies are combining direct sales with commission channels, which changes the revenue structure and affects margins. Additional services, such as mobile applications, booking systems, and personalised recommendations, expand the scope of the offer and enhance customer interaction (Zaharia et al., 2025).

Management logic is gradually shifting to integrated models. Businesses are synchronising the work of different sales channels. Online booking is combined with offline service as part of a single customer experience. This approach reduces losses at the selection stage and increases the likelihood of booking completion. At the same time, the internal organisation of activities



is changing. Functions are distributed among separate blocks, each of which plays a specific role in creating value and maintaining a competitive position (Silber, 2025) (Table 3).

Table 3: Architecture of the Hospitality Enterprise Business Model

Component	Function	Key Tools	Revenue Source	Responsible Departments	Expected Effect
Value proposition	Service development	CRM, mobile apps	Direct sales	Marketing	Growing demand
Creating value	Service delivery	PMS, ERP	Core Services	Operations Department	Quality Improvement
Delivering Value	Customer Communication	OTAs, Web Platforms	Online Sales	Sales	Market expansion
Monetization	Revenue management	Revenue Management	Additional services	Finance	Revenue growth
Analytics	Data processing	BI systems	Upselling	IT	Decision Optimization
Partnership	Interaction with platforms	APIs, Integrations	Commission Income	Business development	Scaling
Quality control	Service evaluation	Reviews, ratings	Repeat sales	Customer service	Customer loyalty
Innovation	Technology adoption	AI, IoT	New products	R&D	Competitive Advantages

Source: Compiled by the authors

The adaptive model requires a combination of digital and service solutions. The digital layer forms the basis for data collection and processing. Companies use online channels to attract customers. CRM systems record behavioural characteristics and interaction history to generate personalised offers. The service layer determines the quality of service and the structure of services. Businesses implement service standards that ensure quality stability (OG Analysis, 2025). Integration with platforms changes sales channels. Businesses connect to OTAs via APIs. They automate data exchange between systems.

This approach reduces reservation processing time and operating costs. The share of automated operations in some networks exceeds 70%. Sustainability is incorporated into the business model through resource optimisation. Businesses are reducing energy and water costs. They



are implementing consumption control systems, which reduce costs and improve basic business performance indicators (Figure 2) (van der Meulen & de Vries, 2025).

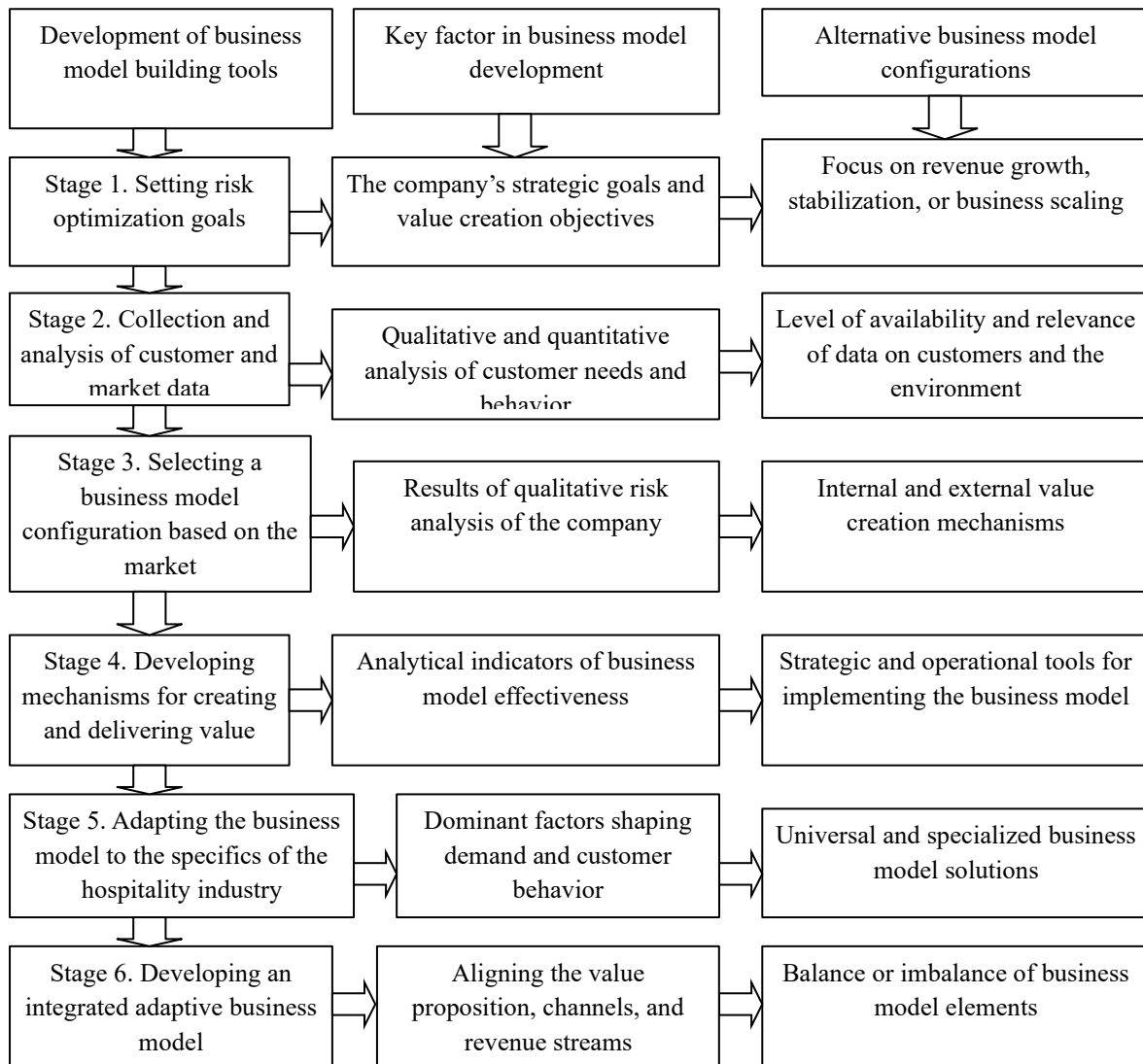


Figure 2: Implementation of an adaptive business model for a hospitality industry enterprise based on the phased integration of the value proposition
Source: Developed by the authors

This is the basis for the digital hotel model, with full process automation. Customers are registered through mobile applications. Service is supported by digital services, which reduces staff costs and speeds up service. In such models, the share of digital operations exceeds 80%. The platform operator focuses on integration with market aggregators. It uses them as the main



sales channel (Akintade & Adetola, 2025). At the same time, the company focuses on supply management and pricing.

The experience-centred model changes the focus from services to customer experience. Businesses create unique offers through additional services.

They combine accommodation with events and personalised activities. The choice of scenario depends on the available resources. Large chains choose combined approaches. Small businesses are more likely to use platform models. This is due to limitations in funding and technology (Table 4).

Table 4: Comparison of Scenarios for Implementing a Hospitality Business Model

Scenario	Level of digitalisation	Main costs	Share of online sales	Model flexibility	Growth potential
Digital hotel	Very high	Technology	85%	High	High
Platform operator	High	Commissions	78%	Medium	High
Experience model	Medium	Service	60%	High	Medium
Hybrid model	Average	Mixed	65%	High	High
Local model	Low	Infrastructure	30%	Low	Low
Network model	High	Marketing	70%	Medium	High
Innovative model	Very high	R&D	82%	High	Very high

Source: Jonathan (2025), Oracle (2025)

Different scenarios generate different results. Businesses with a high level of digitalisation show faster revenue growth. At the same time, they incur higher investment costs. The balance between investments and results determines the effectiveness of the business model. Managing an adaptive model requires constant adjustment (Pastor, 2025). Businesses analyse data and adjust their operating parameters, creating an individualised response to market conditions.

Economic and Mathematical Modelling of the Dependence of the Efficiency of the Business Model of A Hospitality Enterprise on the Level of Digital Maturity

The empirical estimation is based on data from hospitality and mixed service enterprises (Regent Financial, 2025). The sample includes 42 entities operating in different segments of the hospitality industry. The data structure reflects the variation in scale, sales channels, and levels of digitalisation. In the period 2021–2025, enterprises exhibit heterogeneous dynamics in revenue and workload, providing an adequate basis for modelling. Digital maturity in the

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hospitality industry is determined not only by the availability of technology but also by its integration into operational processes. The choice of indicators accounts for the share of online bookings, the level of CRM integration, the use of personalisation algorithms, and the degree of service automation. To avoid large-scale distortions, all variables are normalised (Makedon et al., 2025c):

$$xi^* = \frac{xi - x_{min}}{x_{max} - x_{min}}, \quad (1)$$

where: xi^* – normalised value; x_{min} , x_{max} – the minimum and maximum values, respectively.

The integrated digital maturity index is calculated using weighting factors that reflect the contribution of each element to the enterprise's overall digital architecture:

$$DMI = \sum_{i=1}^n w_i xi^*, \quad (2)$$

where:

w_i – the weighting coefficient of the i -th digital maturity indicator; it indicates the relative importance of a specific component within the overall structure of the enterprise's digital development;

xi^* – the normalised value of the i -th digitalisation indicator; a dimensionless quantity ranging from 0 to 1, which allows for the comparison of heterogeneous indicators.

In the sample, the average index value is 0.56. The maximum value reaches 0.82, and the minimum value is fixed at 0.21. This indicates a significant differentiation of enterprises by the level of digital development.

The effectiveness of the business model is assessed using a combination of financial and behavioural indicators directly related to the operations of hospitality enterprises. The indicator includes sales profitability, revenue per room, customer lifetime value, and conversion rate.

$$EBM = 1 \cdot ROS + 2 \cdot RevPAR + 3 \cdot CLV + 4 \cdot CR, \quad (3)$$

where:

1, 2, 3, 4 – weighting coefficients of the respective efficiency components; they determine the analytical significance of each indicator in the overall assessment;

ROS (*Return on Sales*) – return on sales; measures the proportion of profit in the total revenue from services provided by a hospitality business;

RevPAR (*Revenue per Available Room*) – revenue per available room; one of the key performance indicators in the hotel industry, combining the impact of price and occupancy;

CLV (*Customer Lifetime Value*) – customer lifetime value; shows the total revenue a company receives from a single customer over the entire period of interaction;



CR (*Conversion Rate*) – conversion rate; reflects the proportion of potential customers who made a reservation or purchased a service after contacting the company.

The average value of the performance indicator in the sample is 0.61. Companies with a high level of digitalisation have values above 0.70, while those with a low level of digitalisation have values below 0.45. A multivariate regression model was constructed to quantitatively assess the relationship. It takes into account both digital maturity and the operational characteristics of hospitality businesses, which directly influence performance.

$$EBMt = 0 + 1 \cdot DMIt + 2 \cdot SIZEt + 3 \cdot OCCt + 4 \cdot COSTt + 5 \cdot OTAt + t, \quad (4)$$

where:

0 – the intercept of the regression model; the baseline level of business model effectiveness when the explanatory variables are zero;

1, 2, 3, 4, 5 – regression parameters; reflect the strength and direction of the influence of the respective factors on the effectiveness of the business model.

DMIt – the enterprise's digital maturity index during period t;

SIZEt – the scale of the enterprise in period t; can be measured by revenue, number of rooms, number of seats, or average annual turnover;

OCCt (*Occupancy Rate*) – occupancy rate during period t; indicates the proportion of actually sold rooms or seats out of the total available capacity;

COSTt – the enterprise's operating expenses during period t; these include costs for personnel, energy, digital infrastructure, marketing, and other current expenses;

OTAt – the share of sales through online travel agencies during period t; reflects the intensity of use of platform-based sales channels;

t – random error of the model during period t;

t – observation period.

A correlation analysis was conducted prior to model estimation. It revealed a strong correlation between digital maturity and RevPAR ($r=0.64$), as well as between digital maturity and the conversion rate ($r=0.59$). This confirms the appropriateness of including the DMI index as a key explanatory variable (Table 5).



Table 5: Variables of the model for evaluating the effectiveness of hospitality business models

Indicator	Designation	Type	Unit	Source	Expected impact
Business model effectiveness	EBM	dependent	index	calculation	–
Digital maturity	DMI	independent	index	calculation	+
Scale	SIZE	control	million USD	reporting	+
Workload	OCC	control	%	PMS	+
Costs	COST	control	million USD	reporting	–
OTA share	OTA	Independent	%	CRM	+

Analysis of the variables shows that companies with a high share of OTAs have higher sales volumes but lower margins, requiring a balance across sales channels. Model parameters were estimated using the least squares method. The calculations yielded the following coefficient values (Table 6).

Table 6: Regression Model Parameters

Variable	Coefficient	Std. error	t-statistic	p-value	Effect
Constant	0.198	0.047	4.21	0.000	Baseline
DMI	0.512	0.069	7.42	0.000	strong positive
SIZE	0.118	0.034	3.47	0.001	moderately positive
OCC	0.276	0.058	4.76	0.000	positive
COST	–0.161	0.052	–3.09	0.004	negative
OTA	0.143	0.061	2.34	0.021	moderately positive

The coefficient calculations demonstrate the dominance of the digital maturity variable. A 0.1 increase in DMI increases the business model's effectiveness by 0.0512. This exceeds the impact of other factors. The quality of the model is assessed using the coefficient of determination:

$$R^2 = \frac{1}{T} \frac{\sum (y_t - \bar{y})^2}{\sum (y_t - \bar{y})^2} \quad (5)$$

The calculation yielded the following value: $R^2 = 0.73$.

This means that the model explains 73% of the variation in effectiveness. The F-test was used to verify significance:

$$F = \frac{ESS}{RSS} \frac{n-k-1}{k-1} \quad (6)$$



where:

ESS (*Explained Sum of Squares*) – the explained sum of squares; reflects the portion of the variation in the dependent variable (business model effectiveness) that is explained by the factors included in the model, specifically digital maturity, workload, and sales structure;

RSS (*Residual Sum of Squares*) – residual sum of squares; characterises the portion of the variation that is not explained by the model and is associated with the influence of unaccounted factors, such as local market conditions, seasonal fluctuations, or individual characteristics of enterprise management;

k – the number of independent variables in the model; in this study, these are factors describing the digital and operational structure of hospitality enterprises (DMI, SIZE, OCC, COST, OTA);

n – the number of observations; the total number of enterprises or time periods included in the sample.

(n-k-1) – the number of degrees of freedom of the residual variance; accounts for the sample size and the number of model parameters.

Let's calculate the basic indicator from formula (6):

$$ESS = 5.84; RSS = 2.16; k = 5; n = 42.$$

$$F = 5.8452.1642 - 5 - 1 = 1.1680.060 = 19.47.$$

The obtained value exceeds the critical value (2.45), which confirms the statistical significance of the model.

The Durbin–Watson statistic is calculated to check for autocorrelation of the residuals in the regression model, which is critical for the correct analysis of results in the hospitality sector, where time dependencies may arise due to seasonal demand and the repeatability of customer flows:

$$DW = \frac{e_t - e_{t-1}}{e_t + e_{t-1}}, \quad (7)$$

where: e_t – regression residual at period t ; e_{t-1} – residual in the previous period; T – number of observations.

For the applied calculation, a segment of the residual series was used (notional values for a sample of hospitality enterprises):

$$e_1 = 0.12; e_2 = 0.08; e_3 = -0.05; e_4 = -0.02; e_5 = 0.04.$$

Thus, the values of the indicator:



$$DW=0.0230.0253=0.91.$$

We will summarise the main and additional indicators in Table 7.

Table 7: Quality indicators of the regression model for hospitality enterprises

Indicator	Value	Standard	Interpretation	Conclusion	Level
R ²	0.73	>0.6	high explanatory power	acceptable	high
Adjusted R ²	0.70	>0.5	stable	acceptable	high
F	19.47	>2.45	significant	confirmed	0.01
DW	1.92	1.5–2.5	no autocorrelation	ok	–
VIF	2.1	<5	no multicollinearity	OK	–
p-value	<0.01	<0.05	significant coefficients	confirmed	0.01

An evaluation of the indicators presented in Table 7 demonstrates the high quality of the regression model developed for hospitality businesses. The coefficient of determination, at 0.73, indicates that the model explains most of the variation in business model effectiveness. The adjusted R-squared also remains stable, indicating that the variables are not overestimated. The F-test results exceed the critical level by more than seven times, confirming the statistical significance of the entire model. The Durbin–Watson statistic falls within the acceptable range, ruling out the presence of autocorrelation in the residuals. This ensures the correct interpretation of the coefficients. An analysis of the inflation factors of variation shows a low level of multicollinearity, so the variables do not duplicate each other’s information content. The p-values for all coefficients are all less than 0.01, confirming their statistical significance even at a strict confidence level.

Discussion

The reorientation of business models in the hospitality sector has a clear digital logic. The results of the study confirm the conclusions of Diaconu and Duțu (2017) on the transition from closed to open architectures. At the same time, the estimates detail this process by measuring the economic effect. A strong link between the level of digitalisation and the growth of operational efficiency was found. This clarifies the previous theoretical positions and gives them an applied content. The typologies of electronic models proposed by Nayak et al. (2022) and Zentner et al. (2022) are further developed. The study found that their efficiency is not uniform. It varies depending on the revenue structure and the configuration of sales channels. Some models demonstrate higher margins due to hybrid monetisation mechanisms. This expands the classification approach by introducing quantitative criteria.



Data-driven management confirms its key role. The conclusions are consistent with those of Troisi et al. (2023) and Wynn and Lam (2023), but the results provide a deeper interpretation. Data analytics directly affects financial performance, not just the quality of management decisions. Similarly, the results of Chen (2024) and Sirivadhanawaravachara (2025) are confirmed, but the effect of artificial intelligence depends on the level of integration into the business model. Technology alone does not shape the result. Digitalisation and sustainability form a single system. The approaches of Pastor (2025) and Pergelova et al. (2026) are complemented by the inclusion of ESG parameters in the evaluation model. This fact changes the balance of costs and income. At the same time, the importance of strategic synchronisation is confirmed, as emphasised by Makedon et al. (2025) and Bondarenko et al. (2025). The use of economic and mathematical tools allowed us to formalise these relationships.

The scientific contribution of this study lies in the presentation of a comprehensive analytical framework that integrates digital, financial, and behavioural indicators into a single model for evaluating the effectiveness of business models in the hospitality industry, which is suitable for practical application. The proposed approach enables assessment of a business model's effectiveness as an integrated entity. The practical value is manifested in the ability to adapt management decisions to environmental changes.

CONCLUSION

The hospitality market is changing the structure of competition. The centre of gravity is shifting from resources to algorithms and platforms. Businesses are losing some control over sales channels. At the same time, they gain access to wider markets. This transforms the financial logic of operation. Customer behaviour is becoming more rationalised. They compare, evaluate, and make decisions quickly. Personalisation and speed are becoming basic requirements. In response, companies are integrating digital and service components into a single system. A multi-tiered architecture is formed where analytics, platforms, and operational processes interact in real time.

The modelling results demonstrate a clear correlation between digital maturity and performance. Regression analysis indicates that digital factors dominate traditional operational parameters. This is changing management approaches. Businesses that integrate technology faster gain a sustainable competitive advantage.

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