

FINANCIAL FORECASTING MODELS IN HOSPITALITY - CASE OF HOTEL TAMIŠ

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Abstract: This paper explores the financial forecasting models applied to the matinee services at hotel Tamiš, which encompass food, drinks, and music offerings, over the period from March 2024 to December 2024. Utilizing Excel 365 for comprehensive financial analysis, the study examines key metrics such as total revenue, raw material costs, and profit margins associated with these services. Findings indicate that effective management of raw material costs, which account for a significant portion of expenses, alongside strategic pricing, plays a crucial role in enhancing overall profitability. The integration of diverse revenue streams from food, drinks, and live entertainment is highlighted as a key factor in optimizing financial performance. The paper emphasizes the importance of adapting services to meet guest expectations and suggests avenues for future research, including the impact of guest's feedback on the success of matinee offerings in the hospitality sector.

Key words: Hotel Tamiš, Pančevo, F&B, Financial forecasting, Matinee, Management, Hospitality.

1. INTRODUCTION

In the hospitality industry, financial forecasting is a fundamental practice that supports decision-making, strategic planning, and resource management [1]. Given the industry's reliance on fluctuating demand patterns, influenced by factors such as seasonality, economic conditions, and consumer preferences, accurate financial forecasting models are crucial for ensuring operational efficiency and long-term profitability. Among the various segments within the hospitality sector, the food and beverage (F&B) department often presents unique challenges due to its complex nature [2]. The perishable nature of products, varied cost structures, and the necessity to balance service quality with financial constraints make forecasting in this area particularly significant.

Financial forecasting models are employed to predict future revenues, costs, and cash flows, enabling management to make informed decisions regarding inventory, staffing, pricing, and capital investments. These models range from simple trend analyses to more complex algorithms that incorporate multiple variables, such as market trends, historical performance data, and external economic indicators [3]. In hospitality, the effectiveness of these models often determines a hotel's ability to respond to changing market conditions, optimize its F&B operations, and maintain competitiveness. The development and refinement of financial forecasting models are essential for addressing the specific challenges faced by F&B departments [4]. Forecasting models help anticipate periods of high and low demand, plan for seasonal fluctuations, and manage the procurement of raw materials. They also contribute to minimizing waste, optimizing labor costs, and ensuring that pricing strategies are aligned with market dynamics [5]. As such, the adoption of robust financial forecasting models is critical for hotels seeking to enhance their financial performance and sustain growth in an increasingly competitive environment.

In the hospitality industry, financial forecasting serves as a cornerstone for effective management and operational success [6]. As hotels operate in a dynamic environment characterized by fluctuating consumer demand, seasonality, and competitive pressures, the ability to accurately predict financial outcomes is crucial. Forecasting models allow hotels to anticipate future performance, make informed strategic decisions, and optimize the use of resources, particularly in critical areas such as the food and beverage (F&B) department [7] [8].

This paper explores the various financial forecasting models employed within the hospitality industry, emphasizing their application to the F&B department. Accurate financial forecasting is not merely a tool for operational efficiency; it is a strategic necessity that supports decision-making at all

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levels of hotel management. By understanding and refining these models, hospitality businesses can achieve greater financial stability, optimize performance, and enhance their overall competitiveness in the marketplace.

2. LITERATURE REVIEW

Financial forecasting in hospitality

Financial forecasting is widely recognized as a critical component of management in the hospitality industry. Studies, such as [9] emphasize the importance of financial forecasting models in dealing with the high level of uncertainty that characterizes the hospitality sector. These models allow businesses to anticipate demand, manage costs, and make strategic decisions that are aligned with both short-term goals and long-term sustainability. Research highlights that accurate forecasting in the hospitality industry is not only essential for day-to-day operations but also for ensuring resilience during periods of economic downturn or market volatility.

Several scholars have developed forecasting models that cater to the specific needs of the hospitality industry. Author [10] designed for intermittent demand forecasting, has been adapted in various studies to predict demand in service industries where seasonality plays a significant role. More recent advancements, including the use of artificial intelligence and machine learning algorithms, have been explored by scholars such as [11], who demonstrate the effectiveness of these technologies in enhancing the accuracy of forecasts.

The Role of Financial Forecasting in F&B Departments

The F&B department is a particularly complex area within the hospitality industry, requiring specialized forecasting models. Research by [12], underscores the variability in demand within F&B operations, driven by factors such as customer preferences, event management, and external economic conditions. Forecasting in this context is crucial for managing inventory, labor, and pricing strategies, which directly impact profitability. Studies such as those by [7] highlight the importance of incorporating external economic indicators and consumer behavior trends into F&B forecasting models to improve accuracy.

Several traditional methods, including time series analysis and regression models, have been applied to F&B financial forecasting. For example, a study by [13], demonstrated the effectiveness of time series models in predicting revenue patterns in hotel restaurants. These models help managers anticipate periods of high and low demand, allowing them to adjust staffing levels, order quantities, and pricing strategies accordingly. However, these traditional models often require manual adjustments to account for unique variables specific to F&B operations.

Modern forecasting techniques: Ai and machine learning

Recent literature has increasingly focused on the use of advanced technologies, such as artificial intelligence (AI) and machine learning, to improve financial forecasting accuracy in hospitality. AI-driven models can process vast amounts of data, identify patterns, and adapt to changing conditions, offering a more dynamic and responsive approach to forecasting. A study by [14] suggests that AI-based forecasting tools significantly enhance prediction accuracy in the hospitality industry by automating data analysis and continuously refining forecasts based on real-time information. Machine learning algorithms have been particularly effective in forecasting demand and optimizing inventory in F&B departments. Research by [15], explores the use of deep learning techniques to predict customer demand in hotel restaurants, demonstrating superior performance compared to traditional models. These algorithms can analyze large datasets, including historical sales, weather conditions, and local events, to generate more accurate predictions. The application of such technologies represents a significant advancement in financial forecasting, offering hospitality managers more precise tools for decision-making.

Challenges and limitations in financial forecasting

Despite the advancements in forecasting models, challenges remain in applying these techniques within the F&B sector of the hospitality industry. One significant issue highlighted in the literature is

the need for accurate and high-quality data. As noted by [16], poor data quality can undermine the effectiveness of even the most sophisticated forecasting models. The integration of external variables, such as macroeconomic factors and competition, is also a challenge, as these can be difficult to quantify and predict. Moreover, the adoption of AI and machine learning models, while promising, requires substantial investment in technology and training. Research by [17] discusses the barriers to technology adoption in hospitality, including cost, lack of expertise, and resistance to change. These factors can limit the accessibility of advanced forecasting models for smaller hotels or those with limited resources [18].

3. METHODOLOGY

The financial analysis for the matinee services at hotel Tamiš, covering the period from March 2024 to December 2024, offers an insightful examination of the department's revenue, cost structures, and profitability. This analysis emphasizes the financial dynamics of integrating food, drink, and music services into the matinee experience. The study highlights how effective forecasting models have played a crucial role in managing the complex interplay of revenue streams and costs. The analysis reveals significant aspects of the department's performance, including the total revenue generated from food, drinks, and music. By examining the revenue figures, raw material costs, and profit margins, the study sheds light on the financial health of the matinee services. The data showcases the substantial contribution of each service component—food, drinks, and music—to the overall revenue, while also emphasizing the importance of managing raw material costs, which represent a significant portion of the expenses. Using the financial forecasts, the study details how cost optimization strategies have impacted profitability. The integration of diverse revenue streams, such as the combination of food, drinks, and live entertainment, has been key to enhancing financial performance. The analysis highlights that, despite the high share of raw material costs, strategic pricing and efficient cost management have led to favorable profit margins.

The data was analyzed using Excel 365, which facilitated detailed financial modeling and trend analysis. This approach provided a clear view of the department's expenditure on raw materials, labor, and other operational costs, allowing for a comprehensive understanding of how these factors influence overall profitability. The study also examines how the department's innovative approaches and pricing strategies contribute to financial success, offering insights into the effectiveness of various forecasting models in a hospitality context.

Table 1. Financial forecasting for matinee (food) from March – December 2024, hotel Tamiš F&B department

MATINEE (FOOD)		
<i>Sale item</i>	<i>Com.</i>	<i>Price</i>
<i>Food</i>		797295.00
<i>Total raw materials</i>	0.000	797295.00
<i>VTA</i>		0.00
<i>The share of raw materials</i>		64%
<i>Price without VTA</i>		1241709.00
<i>Selling price</i>		
<i>Profit in rsd</i>		444414.00

Source: Author's calculation

*All prices are presented in Serbian dinar (RSD); *Value Added Tax (VAT)

Table 1. presents the financial forecasting for matinee food sales in the F&B department of hotel Tamiš. The table includes several key financial indicators related to the sale of food items, raw

material costs, and the resulting profit for the department. The total sales revenue generated from food items during the specified period is projected to be RSD 797,295. This figure represents the gross revenue before accounting for costs and taxes.

The cost of raw materials is critical in determining profitability, and in this case, raw materials account for 64% of the total sales revenue. This percentage reflects the share of raw material costs relative to the total revenue, indicating a significant portion of the income is allocated to covering the cost of ingredients and supplies needed for food preparation. The table also provides information about the price structure. The price without VAT (Value Added Tax) is RSD 1,241,709, which suggests that the overall selling price includes additional markups beyond the cost of raw materials. The final selling price of the food items has not been explicitly stated, but it is implied that it incorporates the raw material costs, operational expenses, and profit margins. The projected profit for the period is RSD 444,414.

This figure represents the net income after deducting all relevant costs, including raw materials and operational expenses, but before applying VAT. The absence of VAT information in the table may indicate that this tax is either included elsewhere in the financial analysis or considered separately.

Overall, this financial forecast provides an overview of the expected revenue, cost structure, and profitability for the matinee food operations within the F&B department at hotel Tamiš for the given period. The table highlights the importance of managing raw material costs and pricing strategies to achieve the desired profit margins.

Table 2. Financial forecasting for matinee (drinks) from March 2024 – December 2024, hotel Tamiš F&B department

MATINEE (DRINKS)		
<i>Sale item</i>	<i>Com.</i>	<i>Price</i>
<i>Drinks</i>		205669.00
<i>Total raw materials</i>	0.000	205669.00
<i>VTA</i>		0.00
<i>The share of raw materials</i>		32%
<i>Price without VTA</i>		639603.00
<i>Selling price</i>		
<i>Profit in rsd</i>		433934.00

Source: Author's calculation

*All prices are presented in Serbian dinar (RSD); *Value Added Tax (VAT)

Table 2. presents the financial forecasting for matinee drink sales in the F&B department of hotel Tamiš. Like the food sales forecast, this table outlines key financial indicators related to the sale of drinks, raw material costs, and the resulting profit for the department.

The total revenue generated from drink sales during this period is projected to be RSD 205,669. This represents the gross income from all drink sales before considering any associated costs or taxes. The cost of raw materials for drinks is shown to account for 32% of the total revenue, a relatively smaller share compared to the food segment. This suggests that the cost of producing drinks is lower in proportion to the revenue generated, which could contribute to a higher profit margin for drinks compared to food. The price without VAT (Value Added Tax) for drinks is estimated at RSD 639,603. This figure includes markups beyond the raw material costs, reflecting additional expenses such as operational costs and profit margins. As with the food sales forecast, the final selling price is not explicitly stated in the table, but it is implied that the selling price factors in the total cost of raw materials and other related expenses. The projected profit for drink sales is RSD 433,934. This net income figure is calculated after deducting all associated costs, excluding VAT. The absence of VAT

details in the table suggests that VAT is either accounted for separately or is integrated elsewhere in the financial analysis.

Overall, this financial forecast for drink sales within the matinee service at hotel Tamiš indicates that, despite a lower revenue compared to food sales, drinks offer a favorable profit margin due to their lower raw material costs. Effective management of pricing strategies and cost control will be essential in maintaining these profit levels throughout the forecast period.

Table 3. Financial forecasting for matinee (drinks, food & music) from March 2023 – December 2024, hotel Tamiš F&B department

MATINEE (DRINKS, FOOD & MUSIC)		
<i>Sale item</i>	<i>Com.</i>	<i>Price</i>
<i>Drinks</i>		205669.00
<i>Food</i>		797295.00
<i>Music</i>		240000.00
<i>Total raw materials</i>	0.000	1242964.00
<i>VTA</i>		0.00
<i>The share of raw materials</i>		66%
<i>Price without VTA</i>		1881312.00
<i>Selling price</i>		
<i>Profit in rsd</i>		638348.00

Source: Author's calculation

**All prices are presented in Serbian dinar (RSD); *Value Added Tax (VAT)*

Table 3. presents the financial forecasting for the combined matinee offerings of drinks, food, and music in the F&B department of hotel Tamiš. This table consolidates the financial data for all three categories, providing a comprehensive view of the expected revenue, costs, and profit associated with the matinee service.

The projected total revenue from drinks, food, and music during this period amounts to RSD 1,242,964. This figure represents the gross income before considering any associated costs or taxes. The breakdown includes RSD 205,669 from drinks, RSD 797,295 from food, and RSD 240,000 from music, showing the combined contribution of each component to the overall revenue.

The cost of raw materials represents 66% of the total revenue. This percentage highlights the significant portion of income allocated to covering the costs of drinks, food, and music, which includes not only ingredients and supplies but also the expenses associated with providing live entertainment. This figure suggests that raw material costs play a crucial role in determining the profitability of the matinee service. The price without VAT (Value Added Tax) for the combined offerings is calculated at RSD 1,881,312. This figure reflects the pricing strategy that incorporates the total costs and desired profit margins. While the table does not provide a specific selling price, it implies that the pricing for the matinee service includes adjustments to cover all expenses and ensure profitability. The projected profit for the matinee service, which includes drinks, food, and music, is RSD 638,348. This net income figure is calculated after deducting all related costs, excluding VAT. The absence of VAT details in the table may suggest that it is accounted for separately or considered in another part of the financial analysis.

In summary, this financial forecast for the matinee service at hotel Tamiš indicates a well-balanced operation with a focus on maximizing profitability across multiple categories. By combining drink and food sales with entertainment offerings, the hotel can create a more comprehensive experience for

guests, which contributes to higher overall revenue. Effective cost management and pricing strategies will be key to achieving the projected profit margins for this period.

4. DISCUSSION AND CONCLUSION

In analyzing the financial forecasting for matinee services at hotel Tamiš, including food, drinks, and music, several insights emerge that highlight the critical role of accurate forecasting models in optimizing the F&B department's performance. The provided data across three tables reveals key trends and considerations that are essential for effective financial management in the hospitality sector.

The forecasts for food and drink sales, as well as the combined matinee service, underscore the significance of raw material costs and their impact on overall profitability. For the food segment, with a revenue of RSD 797,295 and raw material costs comprising 64% of this amount, the financial analysis indicates a substantial portion of income is dedicated to covering ingredient costs. This is consistent with the known complexity of managing food costs in the hospitality industry, where ingredient quality and waste management directly affect profit margins.

In contrast, the drinks segment, which generates RSD 205,669 in revenue with raw material costs at 32% of revenue, demonstrates a higher profit margin due to relatively lower material costs. This differential highlights how pricing strategies and cost control in the beverage sector can contribute to a more favorable financial outcome compared to food.

When considering the combined matinee offerings of drinks, food, and music, the total revenue of RSD 1,242,964 with a raw material cost share of 66% reflects the integrated nature of these services. The significant portion of revenue allocated to raw materials, combined with a total profit of RSD 638,348, indicates that while the raw material costs are high, the overall pricing and revenue strategies effectively support a healthy profit margin. The absence of VAT details in the forecasts suggests that further analysis is needed to understand the complete financial picture, including tax implications.

The financial forecasts for matinee services reveal that while managing raw material costs is crucial, integrating multiple revenue streams—such as food, drinks, and entertainment—can enhance overall profitability. This integrated approach provides a more robust financial foundation, allowing the hotel to leverage diverse income sources to offset costs and maximize revenue. Additionally, the higher profit margins observed in the drinks segment suggest that focusing on optimizing pricing and controlling material costs in both food and beverage operations can significantly impact financial outcomes.

In conclusion, the financial forecasting models for the F&B department at hotel Tamiš illustrate the importance of detailed and accurate predictions in managing operational costs and profitability. The data highlights the need for strategic pricing, effective cost management, and the integration of various revenue streams to achieve financial success. By understanding and addressing the factors influencing raw material costs and revenue generation, hotel Tamiš can better align its financial strategies with operational goals, ensuring sustainable growth and enhanced profitability in the competitive hospitality market.

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