



OPTIMAL HOTEL MANAGEMENT THEORY: ANALYTICAL ASPECT

Yulia Manachynska

Chernivtsi Institute of Trade and Economics of Kyiv National University of Trade and Economics, Faculty of Accounting, Finance, and Economic Activities, Chernivtsi, Ukraine

Svitlana Luchyk

Chernivtsi Institute of Trade and Economics of Kyiv National University of Trade and Economics, Faculty of Accounting, Finance, and Economic Activities, Chernivtsi, Ukraine

Volodymyr Yevdoshchak

Chernivtsi Institute of Trade and Economics of Kyiv National University of Trade and Economics, Faculty of Accounting, Finance, and Economic Activities, Chernivtsi, Ukraine

©MESTE

JEL Category: **H10, O10, C60**

Abstract

The article investigates new trends and tasks of management in the hotel industry through the prism of the modern theory of optimal management. The model of an optimal structure formation for the volume of hotel services sale has been presented, which takes into account the proportion of profitability of hotel accommodation sale of the corresponding type in the overall profitability of hotel services sale, which is established in the form of a linear programming task. The implementation of the optimal assortment policy has been corroborated, which will give positive results in the in-depth operational analysis of profitability by hotel room types. It is proved that the pricing policy of hotel properties should be based on determining the equilibrium price i.e. taking into consideration the function of supply and demand on the hospitality market. To determine the equilibrium price formed on the hospitality market, it is suggested to use a "cobweb model", the essence of the model is that suppliers respond to prices with a certain delay ("time lag"). It is substantiated that by determining the equilibrium price of the forecasted period, a hotel enterprise can form a pricing strategy based on the possible supply and demand on the hospitality market in general. In order to implement a rational assortment policy in analyzing the profitability of hotel establishments, it is suggested to use the method of optimal management, grounded on the distribution of the volume of accommodation deals by room types in accordance with the optimal

Address of the corresponding author:

Yulia Manachynska

[✉ yu_manachynka@ukr.net](mailto:yu_manachynka@ukr.net)

structure at a given vector of the objective. At the same time, it is recommended by the authors to determine the amount of demand for accommodation services in the forecasted period

via the Markov chain method. Simulation modeling of hotel enterprises' performance will allow developing managerial decisions that will help to increase the overall profitability of the hospitality business. The authors propose to improve the methodology of analysis within strategic management by integrating conventional analysis methods with less traditional such as multidimensional analysis; investigation of innovational performance; forecasting method, imitation and stochastic modeling of business processes in the hospitality industry.

Keywords: management, hotel, analysis, administration, price, revenue, profitability, strategy

1 INTRODUCTION

Nowadays the tourism industry becomes the leader of the world economy. Tourism accounts for about 12% of the world gross product, more than 30% of international trade services, 11% of world consumer spending and 7% of total investment. According to the World Tourism Organization (WTO) forecasts, the number of tourists will reach 1561,1 million people by 2020, with revenues from tourism amounting to the US \$ 2 trillion and travel expenditures increasing on average to US \$ 1,248 (Grechanik, 2017).

The number of foreign tourists who have visited the country is a significant element in the hospitality industry as it contributes to the development of several industries that are directly involved in catering for them. This leads to an increase in gross domestic product volumes and augments the standard of living in the country.

The largest share of a tourism product cost is constituted by temporary accommodation (lodging) services, therefore, considering the above-mentioned trends, domestic enterprises of the hospitality industry need to improve the quality of their services. In modern conditions, hotel establishments as business entities include the following types of enterprises: hotels, hotels with office centers, motels, campgrounds, youth hostels, and mountain shelters, premises adapted for hotels, dormitories and other temporary residences' facilities.

Hotel business is extremely dynamic – dozens of big deals are being made in the world over the year, such as the acquisition of Hilton Hotels Corp by Blackston Group, launch of new brands like All Seasons by the French Accor Hotel Corporation and hundreds of management, franchise purchase and hotel transfers to other networks (Samartsev, 2008).

Self-planning of its performance by a hotel enterprise requires constant monitoring of the

market condition, readiness for market fluctuations in order to ensure the implementation of the optimal management and economic survival strategy in the conditions of competition and crisis in the economy.

2 NEW MANAGEMENT POLICY

The economic crisis is a period for finding the most effective business solutions. Structural changes in the Ukrainian hotel business require the introduction of unified technologies in order to create a new policy for the hotel brand: improving the quality of services provided by the hospitality industry.

World experience shows that the hotel industry can also be developed in times of economic crisis, as the cost of creating one workplace here is 20 times lower than in manufacture and the turnover on capital investment is 4.2 times higher than in other industries.

Hospitality management is reflected in the works of such foreign and domestic scientists as Andrenko, 2015; Baylik, 2018; Boyko, 2011; Zmiev, 2015; Kuznetsova, 1997; Munin, 2015; Musakin, 2018; Putsenteilo, 2017; Roglev, 2015; Samartsev, 2015; Tkachenko, 2018. The solution to the problem of effective management of financial results from accommodation in the long-term time span is to find the optimal structure of management parameters, i.e. the optimal range of hotel rooms.

As a vector of the objective, the value of the reference income from the provision of accommodation by room types is the strategic goal of the financial and economic activity of hospitality establishments overall. Accordingly, the achievement of the above objective is the basis for the development of a hotel growth strategy.

Depending on the set objective, one or another management model is implemented, which presupposes a specific method of problem-solving

in goal attainment. Among these methods, techniques of optimal control are of interest.

The primary task for the effective management of a hotel enterprise is to determine the optimal range of hotel services, the variety of which is primarily determined by the number of facilities provided as well as the general condition of the material and technical base.

A key factor in achieving the competitive advantage is the determination of a required list of room types while the selection of additional services is a means to raise the hotel property to a higher stage in development. Establishing the optimal structure of hotel services permits to optimize the price per room and the overall hotel tariff amount.

The problem of the optimal mixture of hotel services is extremely topical, due to the considerable costs of accommodation downtime. That is, if the structure of accommodation types does not reflect consumer demands, costly, inefficient service industry units are being created, an atmosphere of dissatisfaction with services is being formed, which negatively affects the image of the hotel property, thus an artificial deficit on certain categories of rooms that are in demand is being created.

2.1 Optimal management strategy

The efficiency of hospitality enterprises can be significantly improved if one optimizes the structure of hotel services sale volume to ensure the maximum possible income.

The choice of the optimum criterion depends on the goals of an enterprise. In the hospitality sphere, the strategy that will maximize sales, boost profits or minimize costs may be optimal. The implementation of this strategy will allow the hotel industry to achieve the reference state – that is a standard level of profit and effectiveness for each time step according to the optimal structure of hotel services by room types.

Therefore, an important task of analyzing the financial results from the provision of accommodation is the formation of the optimal mixture and structure of the volume of hotel services sale by category of rooms. In conditions where the hotel companies independently set the prices for lodging, considering their sales outlay,

optimizing the volume of sales by separate types of hotel rooms allows you to adjust the amount of desired profit.

Therefore, we suggest using the model of an optimal structure formation for the volume of hotel services sale which will provide maximum profit. The mentioned model is based on considering the proportion of profitability of hotel accommodation sale of j – type in the overall profitability of hotel services sale and formalized as a linear programming task:

$$V_1 + V_2 + \dots + V_n = V, \quad (1)$$

$$P = \alpha_1 V_1 + \alpha_2 V_2 + \dots + \alpha_n V_n \longrightarrow \max, \quad (2)$$

where

α_j – is the level of profitability of a j – type of hotel room sale;

$j = 1, 2, \dots, n; n$ – is the number of room types;

V_j – is the volume of the j – type of hotel room sale in terms of value;

V – is the volume of hotel services sale;

P – is profit from the sale of hotel services.

To optimize the structure of hotel services sales volume, the following information is required:

E_j – the share of the j – type of hotel room in the actual structure of hotel services sale;

P_j – profits received from the sale of the j – type of hotel room;

β_j – the proportion of the j – type of hotel room sale in the optimal structure of hotel services sales volume;

V^* – the anticipated value of hotel services sales volume (calculated by the Markov chain method);

P_j^* – the anticipated amount of profit from the sale of a j – category hotel room;

P^* – the anticipated amount of profit received from optimizing the structure of hotel services sale.

That is, at the initial stage the profitability of j – type hotel room is calculated:

$$\alpha_j = \frac{P_j}{V_j}, \quad (3)$$

and the optimal structure for accommodation services sale is determined:

$$\beta = (\beta_1, \beta_2, \dots, \beta_n), \quad (4)$$

$$\text{where } \beta_j = \frac{\alpha_j}{\sum_{j=1}^n \alpha_j}. \quad (5)$$

After completion of the above calculations, a forecast of sales volume is made for the future (by Markov chains method).

In the next stage, the volume of hotel services sale is distributed according to the optimal structure and the estimated amount of profit from the sale of a hotel room of j – type is calculated:

$$P_j^* = \alpha_j V_j^*, \quad (6)$$

where V_j^* – is the sales volume of a hotel room of j – type according to the optimal structure of hotel services sales volume.

After that the forecasted amount of profit from the sale of all n (categories) of hotel rooms is estimated according to the optimal structure of hotel services sales volume:

$$P^* = \sum_{j=1}^n P_j^*, \quad (7)$$

The last step is to calculate the general level of profitability of the hotel business performance (α):

$$\alpha = \frac{P^*}{V^*}, \quad (8)$$

It is worth noting that the implementation of such an assortment policy will give positive results in concert with an in-depth operational analysis of profitability by types of hotel rooms of a hospitality enterprise. The efficiency of financial and economic activity of the hotel industry enterprises and their competitiveness on the market as a whole can be achieved by providing the client with the best hotel service, that is, a service which, from the customer's point of view, is of high quality, price and other parameters that fully satisfy his or her needs.

Considering everything mentioned above, the priority of any hotel enterprise is to ensure an effective process of producing qualitative services. However, in the course of its implementation, the

main problem is not the lack of sufficient financial and material resources, but the inefficient management of these resources as well as insufficient supervision of the production and sales processes, which happen simultaneously.

2.2 Cobweb model

Ukrainian scientists emphasize that modern systems of hotel services sales, constant analysis of competitors and the market, the level of technological process efficiency, trained personnel, competitive price, active demand stimulation are important means (Musakin, 2008).

It is worth highlighting a competitive price among these factors, because the relationship of price per room, the number of accommodation deals of this type, and the amount of expenses involved into the planned occupancy of the total number of rooms are considered during the analysis of financial results from the provision of lodging by room types.

The introduced pricing policy of the hospitality establishments should be based on determining the equilibrium price, i.e. considering the demand and supply function in the hotel services market.

Knowing the supply and demand for accommodation services, one can determine the equilibrium selling price, which will permit to formulate a pricing strategy. It is advisable to carry out the construction of supply and demand functions in accordance with hotel services prices based on correlation analysis (Shalanov, 2006).

According to statistical data on the hotel services' market, the function of demand $D(t)$ which depends on the price $P(t)$ at a definite time t is built as well as the supply function $S(t)$ dependent on the price of the previous period.

A cobweb model can be used to determine the equilibrium price generated in the hotel services market. The content of this model is that the supplier responds to prices with some delay ("time lag"). That is, the supply of the current period $S(t)$ is determined by the price of the previous period $P(t-1)$, while the demand $D(t)$ is determined by the price of the current period $P(t)$; prices for each

period are set at a level at which supply and demand reach balance – $D(t) = S(t)$.

3 MARKOV CHAIN METHOD

However, the web-based method of pricing on the basis of equilibrium on the hospitality market has one major drawback: the demand function is based on information about all hotel services of a similar nature, not just taking into account the demand for services of the establishment under investigation.

This disadvantage is quite important because the demand for hotel services depends on the quality of service of a hotel property, that is, if a customer is not satisfied with the level of service in one hotel, he will look for another, where he may be provided with this service at a better level (Shalanov, 2006).

This deficiency can be eliminated if the demand for lodging services in the forecasted period is determined using the Markov chain method.

The Markov chain can be constructed as follows: the likelihood of a customer returning to a hotel business is conditioned by the quality of hotel service they provided at the accommodation property last time. That is, it is determined by the degree of satisfaction of the consumer's needs.

Possible changes in the demand for accommodation services of the respective hotel establishment on the hospitality market can be described by some system S , which may be in one of the conditions $\varepsilon_1, \varepsilon_2, \dots, \varepsilon_n$, and may also change its condition at the moments of time $t_1, t_2, \dots, t_m, \dots (t_1 < t_2 < t_m < \dots)$. The probability of the system at t moment to be in a condition e_j depends only on what condition the system S was in at the moment of time t_{m-1} . This probability is called transient and is denoted by $P_{ij}^{(m)}$:

$$P_{ij}^{(m)} = P_{im}(\varepsilon_i \rightarrow \varepsilon_j). \quad (9)$$

Since the system can be in one of the n conditions, the overall probabilistic pattern of change will be represented by the matrix:

$$P = \begin{bmatrix} P_{11} & P_{12} & \dots & P_{1n} \\ P_{21} & P_{22} & \dots & P_{2n} \\ \vdots & \vdots & \vdots & \vdots \\ P_{m1} & P_{m2} & \dots & P_{mn} \end{bmatrix}. \quad (10)$$

This matrix is called the transition matrix ("time is a sign") or the transitive matrix. The elements of this matrix are satisfied with the following terms:

$$0 \leq P_{ij} \leq 1, \quad \sum_{j=1}^n P_{ij} = 1. \quad (11)$$

For a homogeneous Markov chain, we can determine the indisputable probability of finding the system S at the m -th step in the condition ε_j ($j = 1, 2, \dots, n$):

$$p_j(m) = P\{S(m) = \varepsilon_j\}, \quad (12)$$

$$p_i(0), \quad (i = 1, 2, \dots, n), \quad \sum_{i=1}^n p_i(0) = 1, \quad (13)$$

If the transitive probabilities matrix is given $\|p_{ij}\|$, then the initial probability distribution is calculated by the formula:

$$p_j(m) = \sum_{i=1}^n p_i(m-1) \cdot p_{ij}, \quad (k = 1, 2, \dots; n). \quad (14)$$

Therefore, knowing the prices of the forecasted period, the hotel business can formulate a pricing strategy based on the possible demand for hotel services.

The strategic direction of the procedure for choosing the optimal standard range of accommodation services involves determining the estimated value of the need – that is, the volume of hotel services sale. Therefore, let's apply this methodology to determine the size of the expected volume of accommodation services by room type, based on existing trends in demand and internal capacity of the enterprise.

In order to implement a rational assortment policy in analyzing the financial results of the hotel industry, it is proposed to use the method of optimal management, based on the distribution of the volume of sales of accommodation services by types of rooms in accordance with the optimal structure by a given vector of the objective. In this

case, it is advisable to determine the amount of demand for accommodation services in the forecasted period using the Markov chain method.

The content of this method is the necessity to formulate an objective first, and more precisely, a vector of objective according to which the control parameters are distributed (Shalanov, 2016).

The management parameters will be represented by the amount of sales of accommodation services by type of rooms (in terms of assortment) since the level of hotel enterprise efficiency depends on the structure of the volume of hotel services sale. Thus, it is necessary to determine the structure that will maximize profits in accordance with the vector of the objective.

The matrix equation of the theory of optimal control is a working model:

$$X^* = FX_0 + GU^*, \quad (15)$$

where $X_0 = (X_1^0, X_2^0, \dots, X_n^0)$ – are values of indicators that describe the object of study at the beginning of the period (the amount of revenue and profit from the sale of hotel services of the hotel establishment);

$X^* = (X_1^*, X_2^*, \dots, X_n^*)$ – indicators reference values or vector of the objective;

$U^* = (U_1^*, U_2^*, \dots, U_m^*)$ – the values of control parameters that are required to achieve the reference values;

F – the transitive matrix of indicators X ;

G – the transitive matrix of control parameters U into indicators X .

The control parameters, as already mentioned, are the amount of accommodation services provided by types of rooms (you can also use, as an alternative, accommodation occupancy by room types).

To determine the structure of accommodation services sales volume, it is necessary to first find the reference values of sales amounts U^* by solving the matrix equation:

$$U^* = (G^T G)^{-1} G^T (x^* - Fx_0), \quad (16)$$

where T – stands for transport.

After that it is necessary to determine the share of sale volumes of each type of room in the total volume of accommodation services, as follows:

$$\gamma_j = \frac{U_j^*}{\sqrt{\sum_{j=1}^m (U_j^*)^2}}, \quad (17)$$

where $\gamma = (\gamma_1, \gamma_2, \dots, \gamma_m)$ is the optimal structure of the services sale volume.

If the projected volume of hotel services sale for the next year is equal to K , then in terms of elements it will be distributed as follows:

$$U_j^1 = \gamma_j K. \quad (18)$$

At this volume of accommodation services sale, the indicators of a hotel property performance are calculated by the formula:

$$X^1 = FX_0 + GU^1, \quad (19)$$

that is $X^1 = (X_1^1, X_2^1, \dots, X_n^1)$ – are the values of indicators that describe the hotel business performance (the amount of revenue and profit from the sale of hotel services), which it can achieve if one distributes sales volumes in the range optimally (by types of rooms).

Thus, the formation of an optimal structure of the accommodation services sale volume by room types in accordance with the vector of objective represents the optimal strategy for a hotel property. The implementation of this strategy will allow the hotel business to reach the reference state X^* , distributing the volume of hotel services sales for each time step according to the optimal structure, table, 1.

Table 1. *Methods for calculating the matrix-F transition coefficients for Hotel "Tourist" (Chernivtsi, Ukraine)*

No	Indicator		2017	2018	
1.	Net income	X_1^0	2380620	X_1^1	2636811
2.	Income	X_2^0	506120	X_2^1	492041
3.	The values of the conversion factors, f_{ij}		$f_{ij} = \frac{1}{n} \frac{X_i^1}{X_j^0}$	f_{i1}	f_{i2}
			f_{1j}	0,553	2.604
			f_{2j}	0,103	0.486

Matrix F :

$$F = \begin{pmatrix} 0,5538 & 2,6049 \\ 0,1033 & 0,4861 \end{pmatrix}$$

Matrix G :

$$G = \begin{pmatrix} 1,0018 & 1,0848 & 0,7886 & 0,8775 & 1,2372 & 1,1573 \\ 0,1869 & 0,2024 & 0,1472 & 0,1637 & 0,2309 & 0,2160 \end{pmatrix}$$

The next step is to generate the reference state of the study object. As a reference value of the volume of accommodation services of the Hotel "Tourist", we take the estimated projected volume of sales determined by the Markov chain method, which will be 2365250,00 UAH.

At the same time, the hotel enterprise surveyed plans to achieve a profitability increase of 3.3% compared to the actual results in the reporting period. Given these circumstances, the Hotel "Tourist" plans to profit from the provision of accommodation up to 519419,54 UAH in the future.

In such circumstances, simulation modeling of the hospitality establishment performance will allow developing managerial decisions that will help to increase its performance profitability in general.

Therefore, while analyzing financial results of the hospitality enterprises, it is advisable to use one of the economic methods – the optimal management method, which underlies a rational assortment policy, based on the distribution of the volume of accommodation services by types of rooms according to the optimal structure for a given vector of the objective. In this case, the simulation modeling of a hotel business performance will allow developing managerial decisions that will help to increase the profitability of its performance in general.

The application of the indicator of consumer demand satisfaction for hotel services and other market indicators leads to the review of the initial data on the formation of accounting and analytical information system for managing the profitability potential in the field of hotel services. The solution to this problem involves the development and implementation of innovative projects in the program of innovative performance that provides the optimum level of service with the rational use of resources in the hospitality industry (Efremova, 2013).

A balanced scorecard allows highlighting that, in many cases, the process of providing hotel services takes place without a proper understanding of the result and its value to the customers and shareholders of the hotel business. The efficiency of business processes determines the value of the hotel services supply, the number of applications for hotel rooms booking by their types and the final financial result from the provision of accommodation. Once the key business processes are identified, the profitability indicators of the hotel business are determined (Baryshev, 2012).

Thus, all areas of the balanced scorecard are interconnected and should contribute to the implementation of a single hospitality enterprise strategy (Baryshev, 2012).

The same opinion is held by Zenkina, (2009) since she emphasizes the current relevance of the balanced scorecard concept (BSC), which underlies strategic accounting.

A balanced scorecard is a hotel management system that provides a systematic implementation of its strategic plans, their interpretation in the language of operational management and control over the implementation of the strategy, considering key performance indicators in the hotel business.

The balanced scorecard is an innovative scheme that, while preserving the basic financial parameters, generates projected forms of financial statements for the hotel, assessment indicators of future major operating performance based on non-traditional multidimensional forecasting methods. In developing a balanced forecasting system, the hotel's potential profitability strategy covers the following areas: finance; customers of the hotel; business processes; human capital (Zenkina, 2009).

Each direction is formalized as prospective maps containing information about tasks, indicators, targets, and ways of achieving them.

A prospective map is a diagram or a picture that describes a strategy in the form of a set of prospective goals and causation between them. This scheme is used for logical and clear presentation and clarification of the strategy, transforming the strategy and specific plan of action. Translating the strategy into the language

of the logical regularities reflected in the strategic map allows each business unit and employee of the hotel enterprise to obtain a clear explanation of the essence of the strategy and the tasks for its implementation.

The process of building a prospective map makes the strategy "transparent", while its usage ensures the effectiveness of its implementation in the profitability management system of a hospitality business. First of all, a forward-looking analysis as a "prediction of the future" is closely related to forecasting and precedes strategic accounting, the formation of forecasted financial statements based on actuarial accounting data. That is, a prospective analysis is intended to broaden the horizons of forecasting, to create opportunities for timely feedback on changes occurring in the external environment (Zenkina, 2009).

4 CONCLUSIONS

Within the framework of the categorical apparatus development and the strategic management methodological tools, it is advisable to distinguish a prospective profitability potential; strategic climate; the strategic position of a hotel enterprise as its basic indicators for the hospitality industry. Prospective profitability potential is a measure of capability and capacity of a hotel enterprise to accomplish tasks that ensure the achievement of the set objective – the forecasted level of performance results. It is advisable to analyze the

prospective potential of the hotel enterprise in the context of the following enlarged components of the internal business environment of the hotel business: functional unit (element of production functions and business processes); resource potential; organizational constituent; control component. In addition, as a key component of the prospective hotel potential analysis, it is advisable to highlight a block of predictive analysis of the level of target hotel services profitability achievement together with evaluative characteristics of the level of losses.

Peculiarities of analytical support for the management system, as a rule, are manifested in the development of methods and methodological tools for prospective analysis. Improvement of the analytical methodology within strategic management is carried out by integrating traditional methods of analysis with less conventional such as multidimensional analysis, analysis of innovative performance, forecasting, imitation and stochastic modeling of business processes in the hospitality sphere. Thus, accounting and analytical support for the management system of hotel-enterprises' potential is characterized by a wide range of features related to achieving the target level of hotel services profitability with a preliminary assessment of its negative change tendencies, information base, methodological tools, and analytical procedures.

WORKS CITED

- Andrenko, I. B. (2015). The role of risk accounting when choosing a hotel pricing strategy. *News of Kharkiv University*. Vol 456. 194 -197.
- Baryshev, S.B. (2012). The accounting and analytical system of balanced performance indicators. *Accounting*, Vol.8. 125 -127.
- Baylyk, S.I. (2008). *Hotel industry. The organization, management, service*. Kyiv: Dakor.
- Boyko, M.G. (2011). Improving the analysis of the activity of the hotel industry. *Bulletin of KNTEU*. Vol 456. 62 - 67.
- Efremova, T.Yu. (2013). Aspects of accounting and analytical support for innovation management in the service sector. *Scientific and Technical Journal of the St. Petersburg State Polytechnic University Economic Sciences Vol.1*. 89-93.
- Garanina, E.N. (2015). Comfort "without surprises". *Hotel*. Vol 5. 6 - 12.
- Grechanik, V. P. (2017). Problems of information support and management of regional tourism development. *Proceedings of the third scientific and practical conference. Information technologies in the management of tourism, resort, and recreational economy*. 6 – 8.

- Kuznetsova, N.M. (1997). *Basics of hotel and restaurant economy*. Kiev: Federation of Trade Unions of Ukraine. Institute of Tourism.
- Munin, T. G., Zmiev, A. O., & Samartsev, S. V. (2015). *Management of the modern hotel complex*. Kyiv: Lira-K.
- Musakin, A.A. (2018). *A small hotel: where to start, how to succeed. Tips for owners and managers*. St. Petersburg: Peter.
- Puzentillo, P.R. (2017). *Economy and organization of tourism and hotel business*. Kyiv: Center for Educational Literature.
- Samartsev, E.V. (2008). Euro-2012: interests of the Ukrainian tourism industry. *Hotel and restaurant business*. Vol.2.12-14.
- Shalanov, N.V. (2016). *System Analysis*. Novosibirsk: NSI.
- Tkachenko, T.I, Miska, V.G, & Karolop, O.O. (2018). *Ekonomika hotel'noho ta restorannoho hospodarstva*. Kiev: CSTMV KNTEU.
- Zenkyna Y.V. (2009) Uchetno-analytycheskoe obespechenye stratehycheskoho upravleniya kommercheskoi orhanyzatsyei [Accounting and analytical support of strategic management of a commercial organization] *Audyt y fynansovyyi analiz - Audit and financial analysis*, 2(1-3).