

**MARIJA ACKOVSKA\***  
**NEDA PETROSKA-ANGELOVSKA\*\***

## **FEATURES IN IMPLEMENTATIONS OF FINANCIAL CALCULATIONS IN TOURISM SECTOR ENTERPRISES**

### **Abstract**

This article is focused on issues related to specific characteristics of financial calculations in tourism sector enterprises. Features of calculations in this sector arise from the differences in tourism products and services, time distribution of tourism flow and the level of capacity utilization.

The implementation of financial calculations in tourism sector enterprises has two main aims: taking into account of all costs related to tourism products and services, their proper allocation and quantification. Mentioned aims of calculations are basic prerequisites for real and exact estimation of product and service prices in the sector. It is also important to specify that final price of this product and service is formed not only as a result of quantification of all costs but also it is influenced by the tourism market supply and demand.

Elaborated issues in this paper notify the importance of implementation of financial calculations in this sector regarding the better price estimation, improvement in controlling process of internal operations and managing of capacity utilization in tourism sector enterprises.

**Key words:** financial calculation, cost estimation, calculating methods, enterprises, tourism sector.

**JEL Classification:** M21; M41; Z3

---

\* Ph. D, associate professor, Institute of Economics-Skopje, University “St. Cyril and Methodius”, e-mail: marija@ek-inst.ukim.edu.mk

\*\* Ph. D, associate professor, Institute of Economics-Skopje, University “St. Cyril and Methodius”, e-mail: neda@ek-inst.ukim.edu.mk

## **Introduction**

Implementation of financial calculation, price and margin estimation and normatives of tourism product and services are legal obligation in tourism sector enterprises. In tourism sector, total income and expenditures are planned with the aim of satisfactory profit level achievement. Those presumptions are built according the prices established on the basis of financial calculations. It is therefore very important to keep in mind the importance of applying calculations, pricing, margin and regulations in decision making of management in tourism business, both in terms of adequate quality of tourism products and services, and in terms of the positive business performance and achieving profit which seeks to every enterprise.

It should be emphasized that in pricing there is some difference depending on whether enterprise refers to hospitality or catering industry. There is also a difference in pricing in hospitality depending on the duration of working period and location (the place of performance of individual hotel facilities).

Namely, in catering industry that products and services are sold to domestic population ie domestic guests, the prices are formed mainly under the conditions prevailing on the domestic market. It means that the level of prices of goods and services in catering industry depend on supply and demand for those products and services that are formed in this branch of catering. Important is to emphasize the fact that prices in catering industry are equal both for domestic and foreign guests or tourists.

Prices of goods and services in hospitality industry that works for all seasons on non - touristic locations are also formed depending on conditions prevailing on domestic market and they are generally the same for the whole year. Exception of this are countries where inflation phenomena very high. Price differences that occur in these facilities are result of their different location and the level of capacity utilization ie the absorption volume of products and services by domestic and foreign guests or tourists.

In seasonal hospitality and hotel facilities in tourist areas that operate for a whole year, selling prices of products and services are interchangeable depending on the stay period of guests. For example, in the tourist season prices of goods and services are higher even though the price of the cost per unit or per unit of service in that period is lower. Conversely, outside the season, when cost price of products and services are higher in general, selling price of goods and services are lower.

Also in tourist areas, price of products and services, hoteliers calculate primarily depending on conditions prevailing on foreign markets and ex ante for one year in advance. So, in these situations cost price is only approximate size that influence the final price. Therefore, the selling price of hotel products and services in tourist areas differ from those in other places. Namely, while hotels in tourist areas usually are offering boarding services, those in non - touristic places mainly provide only accommodation services ie night (possibly with breakfast).

## **1. TYPES OF FINANCIAL CALCULATIONS IN CATERING INDUSTRY**

Financial calculation means to calculate cost price and selling price for certain products and services in general and therefore for products and services in hospitality industry, also. Hence, main tasks of financial calculation are - as accurately as possible to calculate the cost price for separate goods and services that in general is orientation in process of determining selling price of same products and services.

According to various criteria can be executed various types of calculations. The classification of financial calculations commonly is performed according to the following criteria:

- 1) According to the time period;
- 2) According to price calculation of catering products and services;
- 3) According to the method of cost calculating ie of cost price of certain products and services in different operating conditions;
- 4) According to whether in calculating process margin is taken into account.

From the standpoint of the time period that calculation is made for, calculations vary:

- 1) Previous or planned calculation, and
- 2) Next or accrual calculation.

Previous or planned calculation is the calculation that is usually compiled at the beginning of the year. It is based on statistical data that are available in catering enterprises for the previous period, and corrected with the predicted flow of revenues and costs in the future period. Previous calculation serves as the base for:

- determining the intended scope of products and services,
- for determining selling prices and
- to calculate the planned indicators which reflect planned productivity, efficiency and profitability in the operation of catering enterprises and their business units.

During the preparation of planned calculation, commonly comparative method of planned and realized costs is applied. which points to certain derogations for certain planed costs and also is the first step in the analysis of the reasons for such deviation.

Next or accrual calculation is that calculation. which is compiled based on data about actual costs by places and units (products and services) in the previous accounting period. The data from this calculation are base for analysis and evaluation of realized productivity, efficiency and profitability of certain catering establishments as a whole and especially in their business units commonly represent as a separate profit centers. This calculation shows how realistic were assumptions of planning calculation.

According to the price calculation of certain catering products and services, mainly are distinguished the following types of calculations:

- Calculation for BB;
- Calculation for HB;
- Calculation of FB;
- Calculation of certain types of foods;
- Calculation per type of drinks
- Calculation of various other services to guests or tourists (barber, hairdresser, car services, washing, ironing and cleaning of clothes, postal services, etc.).<sup>1</sup>

---

<sup>1</sup> Ackovski, N.; Ackovska M.: Ekonomika i organizacija na ugostitelstvoto. Grafomak

According to the cost calculating method, ie cost price for certain products and services in different operating conditions following types of calculations can be distinguished:

- Division calculation;
- Calculation of equivalent numbers and
- An additional calculation.

Whether in process of price calculation of products and services is included margin or no, is differ following calculations:

- Calculation without margin included and
- Calculation with included margin.

Calculation without margin included is that which serves for calculating only sells price of the basic material without inclusion of margin.

Calculation including margin is that which determines total sales value, sales value of a particular group or subgroup of products or services and the sales value (sales price) in certain products and services. For example: the total sales value (sales value of all products and services of a catering organization) is obtained so that the total cost of consumable basic material is added to the margin.<sup>2</sup> The sales value of a particular group or subgroup of products or services are obtained when the value of the used base material for the appropriate group of products or services are added to the appropriate amount of margin. Finally, the selling value (selling price) of individual catering products or services is obtained so that the total sales value i.e sales value of the particular group or subgroup of products and services is divided by the number of goods and services.

Specifics of calculations in the hospitality industry derive from the number of products and services, calculation for time period of turnover and capacity utilization that make difficult the assessment of supply and demand for catering products and services. Hence, in hotels almost decisive role have fixed costs, variable costs in catering industry have no

---

Kicevo, Ohrid, 2003.p.189.

<sup>2</sup> Ibid p. 195.

significant effect on total costs for certain products.<sup>3</sup> According to the subject, calculations might be for: overnight, board and lodging, accommodations, consuming food and beverages, and other complementary commodity and non-commodity services. It should be emphasized that the calculations for products significantly differ from the calculations of services taking into account the participation of various inputs in the process of their production.<sup>4</sup>

## **2. PREPARATION METHODS OF CALCULATIONS IN HOSPITALITY INDUSTRY**

Methods of compiling accrual calculations as technical costing procedure is different because there are differences among the numerous products and services in hospitality. Different methods of costs estimation are called methods of calculations. Main objective of all the methods of calculation is units of expenses (products and services) to be burden with costs incurred in the production of those products and services. Moreover, purpose is products or services to be burden more realistic in order to determine their actual cost price.

From previous, it can conclude that related to direct costs there is no problem in allocating to products and services. These cost are known per unit through various calculations. In hospitality, mostly used calculations are:

- Division calculation
- Calculation of equivalent numbers
- An additional calculation.<sup>1</sup>

Division or divided calculation is applied in circumstances where there is only mass production of only one product or mass performing of only one service. Construction of this kind of calculation is very simple

---

<sup>3</sup> Unkovic, S. Ekonomika turizma, Savremena administracija, Beograd, 2001. p 156.

<sup>4</sup> Bull, A.: The economics of travel and tourism. Longman. Sydney, 2008. p. 241.

operation because it is performed only by dividing the total cost by number of goods and services. Namely, for example, the total amount of indirect costs in a garni hotel for total number of overnight stays in 2015 are 100, 000 denars, and in that year period is generated 1, 000 overnight stays then the amount of the total cost of one night will amount to 100 denars ( $100.000 / 1.000 = 100$ ). So, in this calculation it is not necessary to carry out separation of costs on direct and indirect.

The calculation of equivalent numbers is applied in circumstances where a catering company is producing identical products or services that differ in quantity and quality. This is for example the case when the overnight stays of guests is done in rooms with different quality of accommodation ie in rooms of category I (single rooms) category II (double rooms) etc. In that case, first is calculating the so-called equivalent numbers for each quality of service so that each equivalent number is actually a conditional number of nights for the appropriate quality of service, and the sum of these numbers shows the total number of contingent nights. The cost for one conditional night are estimated so that the average amount of daily expenses is divided by the sum of contingent nights.

Further on, also is presented an example of calculating equivalent numbers and cost price for one overnight stay by the quality of service by applying the calculation of equivalent numbers. Moreover, these calculations are implemented under following assumptions:

- 1) The capacity of the hotel “X” is 300 beds of which 50 beds are in single rooms, 160 beds in double rooms and 90 beds in triple rooms.
- 2) The percentage of utilization of that capacity for the year 2015 is 70 %, ie 252 days per year .
- 3) The total amount of indirect costs to the respective hotel in the same year is 10.000.000 denars and average daily cost at 27, 777.77 denars.
- 4) The ratio of costs between III ‘s, II ‘s and I’s category of service accommodation is 1.0: 1.2: 1.6 .

### Calculating the equivalent numbers (conditional number of overnight stay by the quality of service accommodation)

| Quality of accommodation service | Number of beds | Number of overnights per day | Ratio between expenditure and service quality | Equivalent numbers (conditional number of overnight stay) |
|----------------------------------|----------------|------------------------------|---|---|
| Single room                      | 50             | 35                           | 1.6   | 56.0  |
| Dauble room                      | 160            | 112                          | 1.2   | 134.4   |
| Triple room                      | 90             | 63                           | 1.0   | 63.0  |
| <b>Total:</b>                    | <b>300</b>     | <b>210</b>                   |   | <b>253.4</b>  |

Otherwise, in application of this method is sufficient to known total costs, ie, it's not needed to distinct direct from indirect costs.

### Calculating the cost (cost price) for one over night according to quality of service using equivalent numbers

| Quality of accommodation service | Equivalent numbers (conditional number of overnights per day) | Costs per conditional number of overnights deily (in denars) | Total costs per cenapare quality of accommodation Service (in denars) | Overnights per day | Costs per one overnight daily (in denars) |
|----------------------------------|---|--|---|--------------------|---|
| Single room                      | 56.0  | 109.62   | 6.138.72  | 35                 | 175.39                                    |
| Dauble room                      | 134.4   | 109.62   | 14.732.93   | 112                | 131.54                                    |
| Triple room                      | 63.0  | 109.62   | 6.906.06  | 63                 | 109.62                                    |
| <b>Total:</b>                    | <b>253.4</b>  |  | <b>27.777.77</b>  | <b>210</b>         | <b>132.27</b>                             |

Additional calculation is estimated when catering enterprises are engaged in production of different types of products or services. Such is, for example, the case in catering establishments that prepare various foods, which offers various kinds of drinks and where there are various types of services. For more realistic preparation of calculation of cost for FB or HB services, or for certain foods, drinks and beverages as well as for various types of accommodation services and other personal services to the guests, total cost must be divided into direct and indirect. Moreover, given that the direct costs per unit of product or service eg unit costs are known, the problem boils down to calculating the indirect costs of the products and services. The division of indirect costs on certain cost units is done by cost key (criteria). Moreover, as key for differentiation of indirect costs per individual assortments (types) of products or services can serve share of wages for production of certain products and services or the cost of materials for the manufacture of those products and services, or commonly sum of two elements. Finally, the amount of costs obtained in any of the aforementioned methods (keys, criteria) is added to the amount of total costs, ie, of cost of individual products and services. That's the reason why this calculation is called additional calculation.

The percentage of indirect costs is obtained when the amount of direct costs per assortment (product or service) is multiplied by 100 and so result is divided by amount of direct costs or applying the following formula:

$$\% \text{ of indirect costs per assortment} = \frac{\text{Direct costs per per assortment} \times 100}{\text{Total direct costs}}$$

By multiplying the direct costs range with the established rate, amount of indirect costs is calculated.

Otherwise, except for certain types of products and services, additional calculation can be applied for estimation of cost price on group of products or services. Often this calculation is performed for different types of food as well as for certain groups of foods. Further on, is presented an example of additional calculation for cost estimation of certain types of food as well as for group of products, if it is you know that:

- Catering company “X” produced (prepared) three kinds of products including kebabs, burgers and steaks;
- In July 2015 it plans to spend and therefore to produce 15, 000 kebabs, burgers 2.000 and 1.000 veshalici;
- For production of barbecue products planned direct costs for the amount of: for cevapi 60.000 denars, 40.000 denars for hamburgers and for veshalicite 50.000 denars or 150, 000;
- The total indirect costs of enterprise amounted to 50.000.

### **Additional calculation for food company “X” for the month of July 1995**

| Type of products | Number of products | Amount of direct costs (MKD) | Participation (In %) | Amount of indirect costs (MKD) | Amount of total costs (MKD) | Price per unit (MKD) |
|------------------|--------------------|------------------------------|----------------------|--------------------------------|-----------------------------|----------------------|
| <b>kebab</b>     | 15.000             | 60.000                       | 40.00                | 20.000                         | 80.000                      | 5.33                 |
| <b>burgers</b>   | 2.000              | 40.000                       | 26.67                | 13.335                         | 53.335                      | 26.67                |
| <b>steaks</b>    | 1.000              | 50.000                       | 33.33                | 16.665                         | 66.665                      | 66.67                |
| <b>Total:</b>    |                    | <b>150.00</b>                |                      | <b>50.000</b>                  | <b>200.000</b>              |                      |

### **3. BASES FOR MAKING CALCULATIONS**

When we take into account preparation process of calculations, there are few bases for their making:

- Accounting sheet;
- Data on trade and
- Plan of turnover and costs of catering enterprise as a whole and on individual buildings or units.<sup>5</sup>

Accounting sheet is compiled for each place (economic or unit of account) or any unit (separate product or service). This sheet shows the actual costs.

<sup>5</sup> Ibid. p. 294

Data on turnover may be related to natural or value indicators of products and services. However, given the fact that catering is engaged in production and sales of many products and services, and costs depend on many other conditions it is very difficult to compile cost calculations on certain products and services. So, it is better rather than direct calculations for certain products and services first to make calculations for certain groups of goods and services (food, alcoholic drinks, soft drinks), and within these groups to make calculations for individual subgroups and ultimately calculations for individual products and services to be made.

The plan of turnover and costs can also be used for making calculations of catering company as a whole and for individual buildings or units. However, planning the scope of the cost of future operations in the hospitality is very difficult, complex and thankless job. The planning of future cost amount and turnover are mostly based on data for the past period and the evaluation of the possibilities and conditions for the costs and turnover in the future.

## **Conclusion**

Business policy is a conscious activity of employees, and particularly of bodies of governance and management in enterprises. The main objective of the business policy in complex terms of doing business is achieving as much as possible income that could realize personal, common and general interests of the employees. This is achieved as with rising volume, structure and quality of products and services and with price policy, also.

Namely, in market economies where prices of products and services are set up, generally according to supply and demand that is present on the market, managers in order to achieve greater income will be necessary to reduce prices under market value (price). This is because in that case the demand for products and services offered by the respective catering enterprises will significantly increase, on the account of lower price per unit product or per unit service, it will be able to achieve something greater total profits. In circumstances, however, when a catering organization or any of its business unit has some monopoly (provide special services or offers special products that cannot be found in other organizations or were locat-

ed in the city center where frequency of the local population or tourists is greater in general) for their products and services might achieve a higher price and thus will result in higher income.

Hence, clearly leads to the conclusion that prices of goods and services is one of the most significant instruments in decision making and business policy guide of entrepreneurs and managers in catering enterprises.

### **References:**

1. Ackovski, N.; Ackovska M.: Ekonomika i organizacija na ugostitelstvoto. Grafomak Kicevo, Ohrid, 2003.
2. Brealey A. Richard, Myers C. Steward, Allen Franklin: Principles of Corporate Finance, The McGraw-Hill Companies, (izdадено на македонски јазик од ARS ламина 2015) 2011.
3. Brigham F. Eugene, Daves R. Philip: Intermediate financial management, Gengage learning Company, (издадено на македонски јазик од ARS ламина 2014) 2010.
4. Bull, A.: The economics of travel and tourism. Longman. Sydney, 2008.
5. Dohchevikj Sima: Finansiska analiza kako instrument upravljanja finansijama u preduzeca, Beograd, 1979.
6. Stefanovic, V.: Ekonomika turizma, PMF, Nish, 2003.
7. Spasic Vesna, Cerovic Slobodan: Ekonomsko -finansijska analiza poslovanja preduzeca u hotelijerstvu i turizmu, Univerzitet Singidunum, Beograd, 2013.
8. Stojiljkovic M. and Krstic J: Finansiska analiza, Ekonosmki fakultet, Nis, 2000.
9. Unkovic, S. Ekonomika turizma, Savremena administracija, Beograd, 2001.