Economy Transdisciplinarity Cognition www.ugb.ro/etc	Volume 17, Issue 1/2014	90-97

Simplified Direct – Costing Method Applied in Hotel Industry

Anita MIHALACHE, Paula PANTAZI
George Baritiu University, Brasov, ROMANIA
anita.mihalache@gmail.com
pantazi_paula@yahoo.com

Abstract: *This article is a part of the PhD thesis entitled "Improvement of management accounting in tourism and public food industry". The research we have done aims mainly at identifying the organizational problems related to management accounting and cost calculation within the economic unities operating in tourism and public food, as well as exploring ways of improving it. Research has been considered appropriate due to the increasing importance of tourism in Romanian economy and also due to the lack of decision tools related to costs and future profitability forecast which the management of the hotels experienced.*
In the thesis the improved versions of the direct-costing method in the tourism and public food industry was implemented: the simplified direct-costing version, the evolved direct-costing version and the covering calculation of the fixed expenses.
This paper will present the first improved version "the simplified direct-costing".
In order to apply this version of the direct-costing method we first needed to identify the cost bearer, the methods currently applied in hotel business, the revenue and costs for each cost bearer and to separate variable and fixed costs.
In this case study (a hotel from Poiana Brașov, Romania) the hotel was divided into three cost centres: "accommodation", "restaurant" and "other services", each cost centre having different cost bearers. For the accommodation department the cost bearer is the overnight stay, for the restaurant department the cost bearer is the place occupied in the restaurant, and for the "other services" department the cost bearer is one service per client.
Keywords: *direct-costing, calculation method, expenses analysis, contribution margin*

Introduction

Expenses analysis is very important in any enterprise activity, because in this field a series of economic phenomenon, in connection to consumption and inputs usage, occurs. Product competitiveness and activity efficiency depends on the way inputs are consumed and used. Reduction of production costs is, in the extent possible, a priority objective of every enterprise. Therefore a detailed analysis of the main categories of expenses that contributes to formation of cost is necessary [1].

For this purpose expenses are classified according to their relation to the production variations into two categories: variable expenses (that depends on the production variations) and fixed expenses (that are independent to the production variations).

Fixed expenses, according to the simplified direct-costing method, are treated like a unitary mass that affects the period costs and are not allocated on the cost bearers. Therefore, fixed expenses are not considered when the product cost of goods, works or services is calculated, but they are transferred directly upon the income statement of the period referred to. In the simplified direct-costing method only variable costs are taken in account and subjected to distribution upon the cost bearers.

In order to calculate the variable costs accordingly to the simplified direct-costing method, the following steps must be complied:

a) In the first step the effective expenses of a certain period must be structured accordingly to their relation with the production volume, and then divided on the economic function (production, sales, administration). Expenses incurred in the reporting period consist of:
   - variable expenses (production and sales);
   - fixed expenses (production, sales and administration).

b) In the second step the cost of the cost bearers (goods, works or services) are calculated taking in account only those expenses that vary accordingly to the production volume. This step is divided into two phases:
   - first, the direct variable costs are collected on the costs centres;
   - second, the variable costs identified on the costs centres are attributed to the cost bearers.

1. Preparing the Information

In the hotel industry expenses are collected on the costs centres based on the supporting documentation of the different activities undertaken. On each supporting document registered by the primary accounting, the character of the expenses must be stated (variable or fixed), according to classification scheme of the production, sales and administration expenses. Thereby, the variable expenses recorded in the primary documents are easily tracked on the cost centres, and then they are centralized and transmitted to the central accounting department. In other words, each cost centre officer is interested only in the variable expenses (because they are cost elements), the fixed expenses registered in different documents are transmitted directly to the central accounting department. Next, in the table no. 1, the statement of variable expenses identified on the cost centres is presented.

Table no. 1. Statement of variable expenses

No.	Explanations	Expenses level		Deviation
		According to budget	Effective	
1.	Direct raw materials and consumables, in which:	52,973	51,856	-1,117
1.1.	Direct consumables	28,426	27,315	-1,111
1.2.	Cleaning products	21,848	21,946	98
1.3.	Other operating supplies	2,699	2,595	-104
2.	Direct productive personnel salaries and related contributions	16,540	18,756	2,216
3.	TESA salaries and related contributions (the variable part)	13,241	14,871	1,630
4.	Other variable expenses	58,972	60,398	1,426
4.1.	Agency commissions	6,921	7,043	122
4.2.	Customers facilities	45,839	46,418	579
4.3.	Customers relocation	6,212	6,937	725
5.	Maintenance and functioning of the equipment	331,059	332,273	1,214
5.1.	Maintenance of the accommodation spaces	57,884	59,962	2,078
5.2.	Expenses of premises and facilities maintenance	15,446	15,972	526
5.3.	Expenditure on repairs in common areas	9,692	10,428	736
5.4.	Water and energy expenses	173,653	171,775	-1,878
5.5.	Laundry of sheets	54,199	54,255	56
5.6.	Laundry of uniforms	4,422	4,435	13
5.7.	Maintenance and operation of transport means	15,763	15,446	-317
6.	Overheads of department	235,392	239,269	3,877
6.1.	Water and electrical energy consumed in household purpose	24,147	26,719	2,572
6.2.	Flowers and decorations	5,733	5,665	-68
6.3.	Printing and stationery	17,418	17,881	463
6.4.	Entertainment and Leisure	22,171	21,682	-489
6.5.	Taxes and fees	160,097	161,505	1,408
6.6.	Phone and fax	5,826	5,817	-9
I.	**Total variable expenses of the "accommodation" cost centre**	**708,177**	**717,423**	**9,246**
1.	Direct raw materials and consumables, in which:	547,466	549,382	1,916
1.1.	Raw materials	349,750	351,359	1,609
1.2.	Merchandise	149,894	150,583	689
1.3.	Fuel for kitchen	24,124	23,892	-232
1.4.	Direct consumables	15,459	15,216	-243
1.5.	Cleaning products	8,239	8,332	93

2.	Direct productive personnel salaries and related contributions	8,400	9,232	832
3.	TESA salaries and related contributions (the variable part)	4,572	5,195	623
4.	Other variable expenses	836	916	80
5.	Maintenance and functioning of the equipment	147,173	147,522	349
5.1.	Maintenance of the kitchen equipment	30,296	32,188	1,892
5.2.	Expenses of premises and facilities maintenance	9,862	9,820	-42
5.3.	Water and energy expenses	90,888	89,224	-1,664
5.4.	Laundry of sheets	6,627	6,340	-287
5.5.	Laundry of uniforms	8,808	9,196	388
5.6.	Expenses regarding cracking of kitchen ware	692	754	62
6.	Overheads of department	66,164	66,556	392
6.1.	Water and electrical energy consumed in household purpose	18,334	18,922	588
6.2.	Decorations	1,999	2,113	114
6.3.	Printing and stationery	9,005	8,756	-249
6.4.	Entertainment and music	35,070	34,774	-296
6.5.	Banquets expenses	1,177	1,308	131
6.6.	Phone and fax	579	683	104
II.	**Total variable expenses of the "restaurant" cost centre**	**774,611**	**778,803**	**4,192**
1.	Direct raw materials and consumables, in which:	83,716	82,118	-1,598
1.1.	Cost of sales	80,155	80,926	771
1.2.	Detergents and other cleaning products	3,561	1,192	-2,369
2.	Direct productive personnel salaries and related contributions	2,152	2,368	216
3.	TESA salaries and related contributions (the variable part)	2,106	2,346	240
4.	Other variable expenses	626	647	21
5.	Maintenance and functioning of the equipment	48,828	50,635	1,807
5.1.	Expenditure on machinery repairs	7,282	7,730	448
5.2.	Expenses of premises and facilities maintenance	1,183	1,426	243
5.3.	Water and energy expenses	21,847	22,557	710
5.4.	Laundry of sheets	16,579	16,742	163
5.5.	Laundry of uniforms	1,937	2,180	243
6.	Overheads of department	6,165	6,025	-140
6.1.	Printing and stationery	1,107	1,124	17
6.2.	Water and electrical energy consumed in household purpose	4,833	4,661	-172
6.3.	Phone and fax	225	240	15
III.	**Total variable expenses of the "other services" cost centre**	**143,593**	**144,139**	**546**
1.	Sales personnel salaries and related contributions	27,026	29,962	2,936
2.	Expenses for transportation	108,716	109,662	946
3.	Maintenance and functioning of the means of transportation	15,527	16,948	1,421
4.	Consumables	6,580	6,636	56
5.	Other sales related expenses	1,484	1,428	- 56
IV .	**Total variable expenses of sales department**	**159,333**	**164,636**	**5,303**
V.	**Total variable expenses**	**1,785,714**	**1,805,001**	**19,287**

The statements regarding the variable expenses identified by their nature are transferred to the general accounting compartment that centralizes all these expenses on the economic entity. The centralized statements regarding the variable and fixed expenses are the basis of the simplified direct – costing calculation.

The informational cycle, on which the centralized statements of the variable and fixed expenses are based, is presented in figure no. 1.

Simplified direct – costing calculation retrieves the effective variable cost value from the statements of variable expenses presented for each cost center. Although the usage of standards is possible, the simplified direct – costing calculation dose not appeal to them because its purpose is not the forecast of expenses and results, this being proper to the evolved direct – costing method. If the hotel management consider the information revealed by the simplified direct – costing calculation to be sufficient, standards and budgets can be used because they are very useful tools for an efficient management.

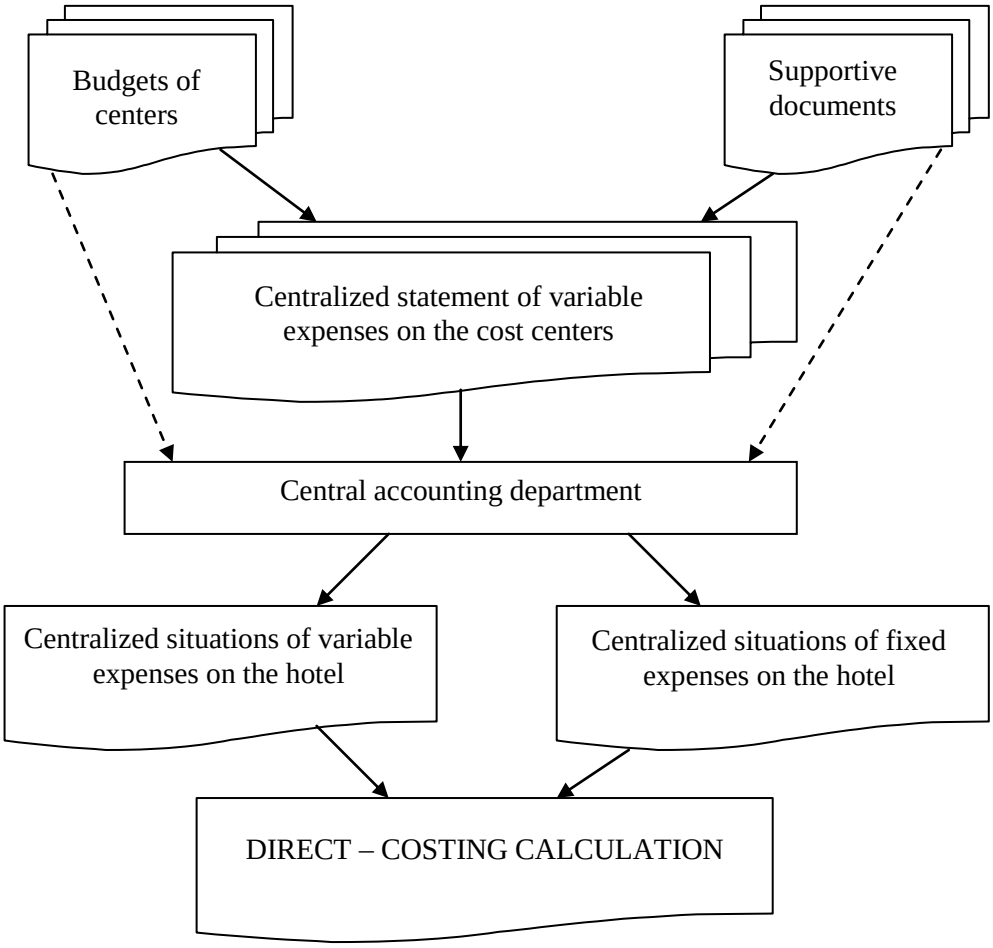

Figure no. 1 Direct – costing calculation informational cycle (Mihalache)

2. Applying the Simplified Direct – Costing Method

In order to apply the simplified direct – costing method, as for any other direct – costing method, information regarding the activity volume is necessary. This statistical information is identified for every operational cost centre. The sales centre is responsible for research regarding the number of rooms occupied in the calculation period, real average rate, number of places occupied in the restaurant, restaurant's turnover, the number of clients that asked for other services (besides accommodation and restaurant) and the turnover of the "other services" cost centre. These are the information from which the simplified direct – costing method is starting.

The hotel activity, in its nature, doesn't allow a single cost bearer for its entire activity, specific cost bearers for every cost centres being necessary.

The simplified direct – costing calculation model for the hotel activity is presented in table no 2. The necessary data, the effective variable expenses for each cost centre, have been taken from the statements of variable expenses. The variable expenses have been separated on the cost bearers identified for the hotel activity ("accommodation", "restaurant" and "other services"). Once this information is obtained, the next stage is the calculation of the contribution margin (total turnover

minus total variable expenses) in two steps: contribution margin of production and contribution margin after sales. This way the contribution of each step to covering the fixed expenses and the positive or negative effect on profit can be established. Next, the contribution margin of each cost bearer and of the total hotel activity for the two steps identified is presented:

Table no. 2. Contribution margin calculation according to the simplified direct – costing method - lei -

No.	Indicators	Costs bearers			Total
		Accommodation	Restaurant	Other services	
1.	Turnover	3,389,998	1,749,996	433,125	5,573,119
2.	Variable production costs	717,423	778,803	144,139	1,640,365
3.	**Contribution margin of production (1-2)**	**2,672,575**	**971,193**	**288,986**	**3,932,754**
4.	Variable sales costs	100,144	51,697	12,795	164,636
5.	**Contribution margin after sales (3-4)**	**2,572,431**	**919,496**	**276,191**	**3,768,118**
6.	Total fixed expenses				2,300,389
7.	**Profit**				**1,467,729**

The contribution margin of production, for the analyzed hotel, is very generous being able to cover all the fixed expenses, therefore placing the hotel in the profitability area. Contribution margin of production represents 70.57% of total turnover and the fixed expenses represent only 41.28% of total turnover. If the variable expenses of distribution are taken in account, then the contribution margin after sales represents 67.61% of total turnover. Therefore, the contribution margin after sales assures the full coverage of the fixed expenses a surplus of 1,467,729 lei remaining in the form of profit. The difference between the contribution margin after sales share (67.61%) and the fixed expenses share (41.28%) of total turnover represents the profit rate of 26.34%. Simplified direct-costing calculation increases the information value of the contribution margin because it is highlighted in steps and on cost bearers.

The fixed expenses, in the concept of the simplified direct-costing method, are not directly connected to the main production activity; therefore, they offer the possibility of consumption evaluation. In figure no. 2, the relative sizes of fixed expenses of production, administration and sales, are presented.

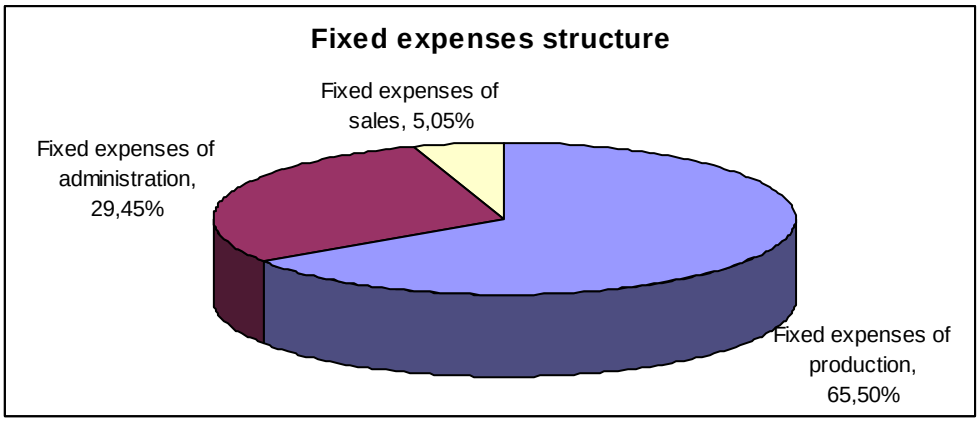

Figure no. 2 Fixed expenses structure

The above presented figure shows that the fixed expenses of production have a share of 65.50%, the fixed expenses of administration have a share of 29.45% and the fixed expenses of sales have a share of 5.05% of the total fixed expenses. Form the calculation obtained with the simplified direct-costing method, presented in table no. 3, it is easily observed that all the fixed expenses have been covered by the contribution margin, placing the hotel in the profitability area. In other words, the break-even point has been exceeded in the analyzed period. *When it comes to fixed expenses, it is needed to refer to the degree of stiffness (G_r) of the organization, which is nothing else than the share of fixed expenses in total expenses. The formula is shown below* [2]:

$$G_r = \frac{Chf}{CT} x100$$, where:

Chf – fixed expenses of the organization;

CT – total expenses of the organization.

Table no. 3. Simplified direct – costing calculation

Nr	Explanations	Cost bearers situation						Total	
		Accommodation		Restaurant		Other services			
		Value	%	Value	%	Value	%	Value	%
1	**Turnover**	**3389998**	**100.00%**	**1749996**	**100.00%**	**433125**	**100.00%**	**5573119**	**100.00%**
2	Calculation unit	17115		62984		18615		-	
3	Real medium rate	198.07		27.78		23.27		-	
4	**Variable expenses**	**817567**	**24.12%**	**830500**	**47.46%**	**156934**	**36.23%**	**1805001**	**32.39%**
5	Calculation unit cost	47.77		13.19		8.43		-	
A.	**Production costs**	**717423**	**21.16%**	**778803**	**44.50%**	**144139**	**33.28%**	**1640365**	**29.43%**
1.	Direct raw materials and consumables, in which:	51856		549382		82118		683356	
1.1.	Raw materials	0		351359		0		351359	
1.2.	Merchandise	0		150583		80926		231509	
1.3.	Fuel for kitchen	0		23892		0		23892	
1.4.	Direct consumables	27315		15216		0		42531	
1.5.	Cleaning products	21946		8332		1192		31470	
1.6.	Other operating supplies	2595		0		0		2595	
2.	Direct productive personnel salaries and related contributions	18756		9232		2368		30356	
3.	TESA salaries and related contributions (the variable part)	14871		5195		2346		22412	
4.	Other variable expenses	60398		916		647		61961	
5.	Maintenance and functioning of the equipment	332273		147522		50635		530430	
5.1.	Maintenance and repairs	59962		32188		7730		99880	
5.2.	Expenses of premises and facilities maintenance	15972		9820		1426		27218	
5.3.	Expenditure on repairs in common areas	10428		0		0		10428	
5.4.	Water and energy expenses	171775		89224		22557		283556	
5.5.	Laundry of sheets	54255		6340		16742		77337	
5.6.	Laundry of uniforms	4435		9196		2180		15811	
5.7.	Maintenance and operation of transport means	15446		0		0		15446	
5.8.	Expenses regarding cracking of kitchen ware	0		754		0		754	
6.	Overheads of department	239269		66556		6025		311850	
6.1.	Water and electrical energy consumed in household purpose	26719		18922		4661		50302	
6.2.	Flowers and decorations	5665		2113		0		7778	
6.3.	Printing and stationery	17881		8756		1124		27761	
6.4.	Entertainment and Leisure	21682		34774		0		56456	
6.5.	Phone and fax	5817		683		240		6740	
6.6.	Other over	161505		1308		0		162813	
I.	**Contribution margin**	**2672575**	**78.84%**	**971193**	**55.50%**	**288986**	**66.72%**	**3932754**	**70.57%**
B.	Sales variable expenses	100144	2.95%	51697	2.95%	12795	2.95%	164636	2.95%
II.	**Contribution margin after sales**	**2572431**	**75.88%**	**919496**	**52.54%**	**276191**	**63.77%**	**3768118**	**67.61%**
C.	Fixed expenses:							2300389	41.28%
a.	Of production	811956	23.95%	514836	29.42%	179904	41.54%	1506696	27.04%
b.	Of sales							116184	2.08%
c.	Of administration							677509	12.16%
III.	**Result**							**1467729**	**26.34%**

For the analyzed hotel, the degree of stiffness is:

$$G_r = \frac{2,300,389}{4,105,390} x100 = 56.03\%$$

The degree of stiffness of 56.03% is absolutely normal, given the field of activity of the organization. It also shows the extent of the organization's technical and material support.

If the degree of stiffness registers higher values, it highlights the need of stimulating more efficient usage of the organization's technical and material support for an optimal exploitation of its capacity. The maximum usage of the technical and material support happens rarely for reasons not entirely related to the organization's management.

With the simplified direct-costing method, the global analysis is left behind and the passing to a more detailed analysis is made, an analysis on cost bearers, as far as the method allows. In the effective calculation (table no. 3) it can be observed that the largest share of the total turnover is obtained by the "accommodation" centre, followed by the "restaurant" centre. Regarding the variable expenses, things are the same, if we consider the cost bearer share in the total amount of variable expenses. Also, the analysis shows that the "accommodation" centre is the most profitable, because the variable expenses that actually form the production cost represent only 21.16% of the centre's turnover, and the contribution margin represents 78.84% of the centre's total sales. This is perfectly normal given that the accommodation activity is the most important activity of any hotel, providing part of the dissolution of the other two operational centres.

The information provided by the contribution margin lead to decisions on stimulating the activity of the hotel accommodation activity. Thus, managers, especially those responsible for marketing and promotion, are interested to seek creative solutions to promote the hotel accommodation activity for the following period in order to increase its profitability, or worst case to maintain the current situation.

However, besides the analysis of variable costs and contribution margin, the relative levels of fixed costs identified for each cost bearers should be taken into account. So, in table no. 4, we shall submit the attention to a number of rates, which reveal, from different angles, the production expenses that do not depend on the volume of activity. We are referring to the fixed expenses identified directly on the cost bearers.

The degree of stiffness for the "other services" cost bearer is the highest (55.52%), followed by the "accommodation" cost bearer (53.09%) and finally by the "restaurant" cost bearer with a degree of stiffness of only 39.80%. The same rate calculated for the production fixed expenses of the entire hotel has a result of 47.88%, which means that the hotel is well equipped and the facilities are relatively new.

From the analysis of the fixed expenses rate relative to the contribution margin, this expresses the relative size of the amount of fixed expenses covered by the contribution margin, and results that the "accommodation" cost bearer needs only 30.38% of the contribution margin to cover all of its fixed expenses. The "restaurant" cost bearer needs 53.01% of the contribution margin to cover the fixed expenses and the "other services" cost bearer needs 62.25% of the contribution margin.

Table no. 4 Fixed expenses rates

No.	Indicators	Activity			Total
		Accommodation	Restaurant	Other services	
1.	Turnover	3,389,998	1,749,996	433,125	5,573,119
2.	Contribution margin of production	2,672,575	971,193	288,986	3,932,754
3.	Fixed expenses	811,956	514,836	179,904	1,506,696
4.	Total production expenses	1,529,379	1,293,639	324,043	3,147,061
5.	Degree of stiffness of production (%)	53.09%	39.80%	55.52%	47.88%
6.	Fixed expenses rate on the contribution margin (%)	30.38%	53.01%	62.25%	38.31%
7.	Fixed expenses rate on turnover (%)	23.95%	29.42%	41.54%	27.04%

The third rate is also favorable to the hotel, in total and on cost bearers. It receives an increase of relevance if analyzed in conjunction with the first two rates calculated and presented in table no. 4. The rate of fixed costs relative to turnover provides information on how many percent of total turnover are needed to cover fixed expenses. In this case, the percentage is pretty good, considering that the amount of fixed costs is approximately equal to the volume of variable costs.

Conclusions

Analyses performed using the simplified direct-costing calculation can be achieved on economic processes, the total organization or on cost bearers, depending on the possibility of identifying fixed and variable costs. This version offers a number of indicators that provide information on the profitability of economic processes, the unit as a whole and the products sold, works performed or services rendered. If the simplified direct-costing method in chosen for the hotel activity, standards can be introduced in the analysis in order to give the method added value in terms of predicting future profitability.

References

[1] Sălăgean, Liana, (2014), *Analiza şi modelarea deciziilor economico – financiare ale întreprinderii*, Lux Libris Publishing House, Braşov

[2] Călin, O. (coordinator), (2005), *Contabilitatea de gestiune şi calculaţia costurilor*, Tribuna Economică Publishing House, Bucharest

Supplementary recommended readings

Călin, O., Man M., Nedelcu, M.V., (2008), *Contabilitate Managerială*, Didactică şi Pedagogică Publishing House, Bucharest

Mihalache, A., (2013), *Contabilitatea manageriala a unităţilor hoteliere*, Lux Libris Publishing House, Brasov

Mihalache, A., (2011), *Perfecţionarea contabilităţii de gestiune în activitatea de turism şi alimentaţie publică*, PhD Thesis, ASE Bucharest