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OPTIMIZING WINE TOURISM THROUGH ERGONOMICS: A MULTI-CRITERIA ANALYSIS

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Abstract: Effective business management is always based on making wise decisions. In wine tourism, collaboration with different partners is necessary for the success of the business. A single managerial decision can influence the company's profit, evolution, and reputation. The present study provides an application model of multicriteria analysis in management decision-making for a wine tourism company. Through qualitative and statistical analysis of tourists' comments and SWOT analysis, the company's problems were identified. The multi-criteria analysis conducted indicated that the expansion into new market segments is the optimal option for increasing the profit and occupancy rate of the accommodation unit. Multicriteria analysis can also be applied in other fields, helping in making objective decisions.

Key words: wine tourism, advanced multi-criteria analysis, management, ergonomics, decision-making, optimization

1. INTRODUCTION

Tourists' interest in visiting wineries is increasing globally. Romania, an important wine producer in Europe [1], is not well-known for wine tourism internationally. In this context, Romanian companies that want to do wine tourism encounter difficulties in making management decisions. On the other hand, decision-making involves the consideration of many domain-specific factors such as: consumer preferences, isolated location, wine quality, services offered, existing infrastructure, technological equipment, facilities, etc. Also, companies must take into account multiple criteria in the management of decisions that may be related to: environment, legislation, economy, industry, society, etc. However, mostly decisions are made according to the company's main strategy.

Multi-criteria analysis can help in handling a large number of criteria while eliminating subjectivity. The method uses a decision matrix based on selected criteria and performance scores to provide analytical insight. It integrates

risks, uncertainty and value, which helps in carrying out an analysis that allows the ranking of multiple options [2]. The main advantage of the proposed method is that it can be applied in any field to find out the optimal option from a set of managerial decisions.

In this study, advanced multi-criteria analysis (AMCA) was applied to identify the optimal decision that a Romanian wine tourism company should take considering the challenges it currently faces and the opportunities that the external environment offers to it. The medium-sized company is located close to the country's capital and excels in the production of wines of superior quality [3]. However, it faces various problems such as lack of: foreign tourists, specialized staff, diversity of services, visibility [4], [5]. Among the most important threats we can mention the economic instability, the war on the borders of the country, the strong competition in the region. Strengths, problems, opportunities and threats were determined through qualitative and statistical analysis of tourists' comments from two well-known online

booking platforms and from the SWOT analysis of the business.

In this context, the problem often met by the managers is taking decisions which involve multiple criteria from various fields while maintaining objectivity.

Main objective of the present study is to determine if AMCA method can be applied to improve the managerial processes in wine tourism. Other objective is to identify the most important aspects for tourists which can be used by the company to improve its offer by analyzing data obtained from customer's comments from two online booking platforms. Furthermore, the goal is to analyze the strengths, weaknesses, threats, opportunities, and tactics of the wine tourism company to propose potential strategies to improve the ergonomics of the company's management.

2. LITERATURE REVIEW – THEORETICAL BACKGROUND ON ERGONOMICS AND MULTICRITERIA ANALYSIS

Different studies carried out so far have presented several forms of multi-criteria analysis that can be applied in tourism, for example to determine a hierarchy of hotels based on tourists' comments, the method being much more effective than if only the characteristics of the hotels are taken into account in general [6] or to determine the best location when building a hotel [7]. However, to the best of our knowledge, so far no study has applied multi-criteria analysis in this form to optimize the activity of a wine tourism company.

Multi-criteria decision-making (MCDM) is currently applied in various fields including tourism. It comprises of different methods to evaluate and prioritize multiple criteria when considering various scenarios in which decisions have to be made. Multi-criteria decision-making includes, along with other methods, advanced multi-criteria analysis, which has a more complex approach involving the use of mathematical methods, algorithms or more complicated tools, such as software. The technique consists in the evaluation of multiple conflicting criteria. If decision-making requires more complex analysis, then this technique can

be successfully applied. Multi-criteria analysis can be used to obtain a hierarchy or to rank different variants of the same product [8], to compare several variants with the aim of finding the optimal one [9] or in the design process of a product or service [10]. All these uses are essential in the ergonomics of company's management. Ergonomics is also an important element if the management of the company aims to manage working conditions [11].

Improvements brought to the company can lead to better performance, more substantial employee involvement, and even retention of professional human resources [12].

Connecting multi-criteria analysis with ergonomics in the context of the tourism company can be done by evaluating processes or equipment in such a way as to raise the level of efficiency and safety or to improve the experience and comfort of tourists, by designing the activities intended for them.

After determining the elements of ergonomics that are intended to be improved, a multi-criteria analysis can be applied to place them in a hierarchy, according to their degree of importance. The advantage of applying this technique in management decisions lies in consistently eliminating subjectivism.

AMCA is based on the establishment of options to consider, which can be features of a product or solutions to a problem. Depending on the options chosen, certain criteria with different degrees of importance are established. They must be formulated unambiguously, so that the issuer defines certain properties of the analyzed subject as clearly as possible. The criteria for optimizing the management activity can be obtained from the analysis of the company's activity, the SWOT analysis or following the application of some techniques (Brainstorming, morphological). To determine the order of the criteria, they must be compared with each other. When comparing two criteria with each other, three possibilities of assessment may appear:

- a) the criterion taken into analysis is more important than the one with which it is compared, in which case it is assigned the value 1;
- b) the criterion taken into analysis has the same degree of importance as the one with

which it is compared, in which case it is assigned the value of $\frac{1}{2}$ or 0.5;

c) the criterion taken into analysis has a lower degree of importance than the one with which it is compared, in which case it is assigned the value 0;

After assigning a degree of importance to each criterion of each variant, the comparative analysis of the variants can be applied, which must be carried out separately, taking into account each chosen criterion. Only in this way objective results will be obtained.

To begin with, the criteria that must be respected by the variants are determined. The next step is to settle all the variants that are supposed to be analyzed by comparison, in order to find the optimal solution. The weight corresponding to each criterion is calculated with the help of weight coefficients. A table is constructed that has the horizontal and vertical ends formed by the chosen criteria, arranged in the same order. Next is to compare the criteria against each other, so that the input is made at each line and the output at each column of the table. The table will have a diagonal showing that no criterion can be more or less important than itself, so it will only have values of 0.5. In this table, all points added together will give half the square of the number of criteria. The ranking of a criterion relative to the others will be given by the points collected on the line of the criterion. In this mode, his rank will be equal to his level value. In the situation where two criteria have an equal number of points, the level will be expressed by the half-sum of the places they should occupy. Always on the first position will be the criterion with the most points. The weighting of the criteria is done using the FRISCO method: [13]

$$\gamma_i = \frac{p + \Delta p + \frac{m+0,5}{2}}{-\Delta p + \frac{N_{crt}}{2}} \quad (1)$$

p represents the addition of the points collected on the line by the analyzed criterion;

Δp - represents the value obtained by subtracting the score of the analyzed criterion from the score of the criterion from the last level;

m - represents the total number of criteria exceeded as a number of points by the analyzed criterion;

N_{crt} - represents the number of analyzed criteria;

$\Delta p'$ - represents the value obtained by subtracting the score of the analyzed criterion from the score of the first element.

Next, is finding all the possible solutions or variants to take into analysis. Then, importance grades are established for each chosen criterion using a scale of values from 1-10. Afterwards, the necessary calculation is carried out to obtain the matrix of consequences, in a separate table.

The last calculation consists in summing the points obtained by each variant. The variant that receives the most points is optimal in relation to the others. In summary, the proposed AMCA method can be obtained by performing the following five steps:

1. Identifying the criteria;
2. Calculating the weight corresponding to each criterion;
3. Finding all possible solutions or variants to consider;
4. Awarding an importance score to each chosen criterion depending on its impact;
5. Performing the necessary calculation to obtain the matrix of consequences.

3. METHODOLOGY

AMCA was applied to a Romanian wine tourism company, established relatively recently. The main activities of the company are wine tourism and production of high quality wine. Having a 3-star guesthouse with restaurant, event hall and a modern wine cellar, the firm offers accommodation, meals and activities related to wine tasting for tourists [4]. Although, it is located on the Wine Road in Romania, less than 80 km from the country's capital, few foreign tourists choose to stay here. The firm's shortcomings were determined through qualitative and statistical analysis of tourist's comments from two online booking platforms and by performing SWOT analysis of the company.

Tourist's feedback was extracted from the booking platforms [14], [15], and organized in tabular form in Microsoft Excel. Data such as country of origin of the tourists, traveller category, number of nights booked, month in

which the stay took place, title of the feedback, the comment and the grade given by the tourists for the analyzed company, was collected and organized by categories. Tourist's comments were read, compared and interpreted using the qualitative analysis method. A breakdown of the content, the topics addressed and of the speech was carried out. A line-by-line coding of the information contained was carried out. The information obtained was compared according to categories such as the tourist's country of origin or traveller category type. Data interpretation focused on coding so as to discover which codes are most important. The aim was to discover the themes that appear most often mentioned by tourists. In this way, the most important aspects for the company's tourists were identified. Food, location, staff, comfort, value for money, rooms, wine, facilities, activities and cleanliness were the themes considered. The mentioned themes are the basis of the tourism business, having a direct impact on it. Value for money is a crucial theme and is linked to food, location, staff, comfort, rooms and cleanliness, meaning that an optimization within these themes will influence the overall value perceived by consumers. Wine influences food and facilities. Amenities enhance activities, which in turn affect the perception of value for money. All themes play an important role, are interconnected and contribute to the success of the tourism company. At the end, the sum of the comments on the topics was calculated. The topics were organized according to the score obtained in descending order of the number of comments. Only complete comments were taken into consideration.

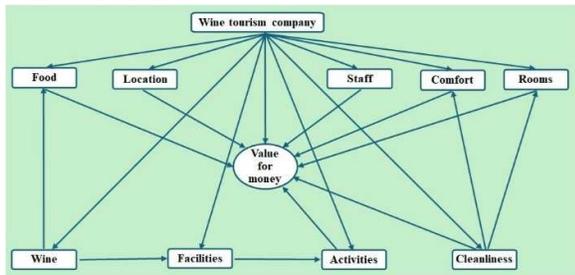


Fig. 1 The interaction of the analyzed themes in the context of the tourist experience within the wine tourism company.

Finally, the data was processed statistically by calculating the frequency of distributions for: the origin of the tourists, the traveller category, the number of nights booked, the grades awarded, most frequently mentioned themes in customers reviews, tourists stayover.

The SWOT analysis of the company was drawn up considering factors such as: geographical location, natural setting, company's facilities, service competitiveness, service rates, strategies used, etc. to identify the weak and strong points. Whilst, to find out the opportunities and threats coming from the external environment the economic development of the region, existing competition, trends, current legislation, transport infrastructure, existing workforce, evolution of prices, current wars, European funds, national strategies, the evolution of the wine tourism phenomenon, were taken into account.

The results of the qualitative and statistical analysis of tourists' comments were correlated with those obtained from the SWOT analysis.

4. COLLECTED DATA AND DISCUSSION OF THE RESULTS

A total number of 122 comments left by tourists were collected from the online booking platforms, of which 71 were eligible for processing through the qualitative analysis method. Statistical analysis was applied to all comments.

Table 1

Provenience of tourists by country of origin.

Guest country	Frequency	Frequency distribution
Romania	98	80%
Germany	5	4%
United Kingdom	4	3%
United States	3	2%
France	3	2%
Norway	2	2%
Netherlands	1	1%
Czech Republic	1	1%
Ukraine	1	1%
Denmark	1	1%
Italy	1	1%
Jordan	1	1%
Spain	1	1%

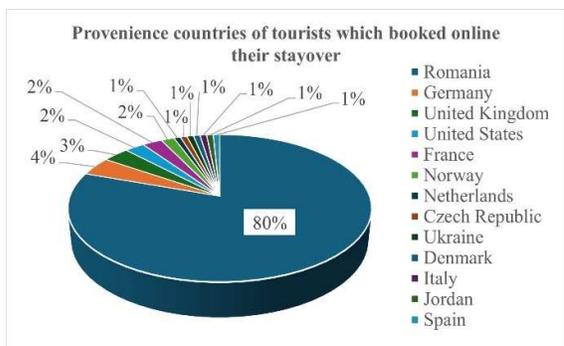


Fig. 2. The distribution of the company's tourists according to the country of origin.

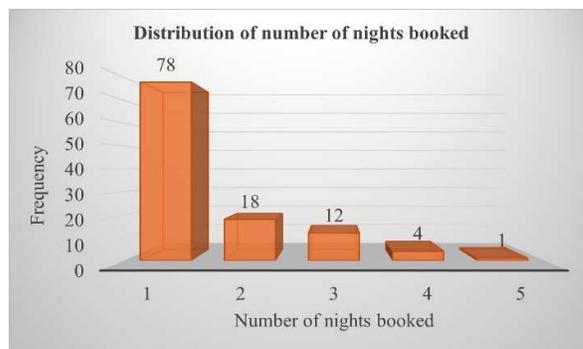


Fig. 4. The distribution of the company's tourists by number of nights booked.

Table 2

Traveller category	Frequency	Frequency distribution
Group	43	35%
Family	37	30%
Couple	36	30%
Solo traveller	6	5%

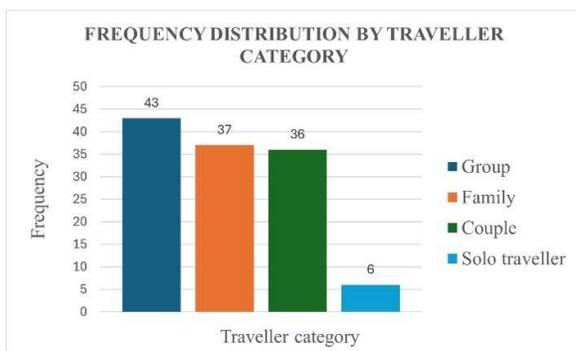


Fig. 3. The distribution of the company's tourists by traveller category.

Table 3

Number of nights booked	Frequency	Frequency distribution
1	78	69%
2	18	16%
3	12	11%
4	4	4%
5	1	1%

As presented in Table 1, of the total number of tourists which purchased services from the analyzed company through the booking platforms, 80% were Romanians and only 20% were foreigners. Their distribution is presented in Fig. 2.

Regarding the category of travellers, from the total number of tourists which booked the services of the company, the highest proportion, namely 35% were groups, while the remaining 65% were represented by families, couples or individual travelers as shown in Table 2. Distribution of tourists by traveller category is presented in Fig. 3.

The total number of reservations was 122, out of which 113 had stated the number of nights booked. Therefore, frequency distribution was calculated on 113 reservations for the number of nights booked. Tourists booked online stays of 1-5 nights, with 1-night stays accounting for the largest share at 69%. 5-night stays had the lowest share as can be seen in Table 3. Distribution of the number of nights booked by the company's guests can be seen in Fig. 4.

Furthermore, the calculated mean of the number of nights booked comes to 1.513274. Therefore, tourists had booked an approximated average of 1.5 nights per reservation, which indicates insufficient extra activities to entertain the guests, besides the wine tasting and guided tour of the winery. Activities play a significant role in keeping the customers on the premises of the winery, while positively impacting the revenues. Moreover, the remote location of the winery, the insufficient number of tourists attractions and the high density of competing wine tourism companies in the area, implies that an improvement of the activities offer is a necessity to be addressed by the management of the business.

Regarding the scores left by tourists on the booking platforms, 45% were excellent, while 55% of the reviewing customers had at least one remark which negatively influenced their final

review score. Having in mind that for a contemporary tourism company reputation is mainly build on the online feedback and review scores of tourists, analysed data where over half of the scores are below excellent, suggests that there is sufficient grounds for improving the reputation. This situation is presented in Table 4. Fig. 5 shows a visual representation of the distribution of scores by reviews.

Table 4

Review scores given by the company's guests.

Review score	Frequency	Frequency distribution
10	55	45%
9	28	23%
8	26	21%
7	5	4%
6	4	3%
4	3	2%
5	1	1%
1	0	0%
2	0	0%
3	0	0%

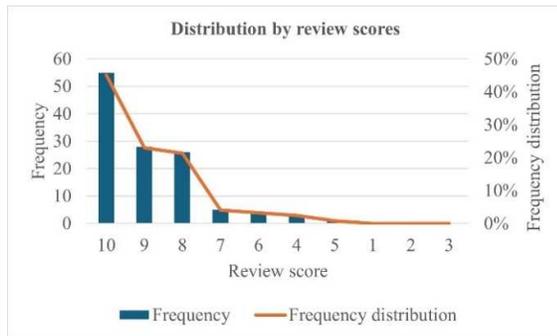


Fig. 5. The distribution of review scores given by tourists.

Table 5

Distribution of themes in tourists' comments.

Themes	Total number of coded responses	Percentage of coded responses
Sum of Location	84	18%
Sum of Food	73	15%
Sum of Comfort	59	12%
Sum of Staff	57	12%
Sum of Rooms	48	10%
Sum of Value for money	40	8%
Sum of Wine	36	8%
Sum of Activities	29	6%
Sum of Facilities	28	6%
Sum of Cleanliness	19	4%
TOTAL	473	100%

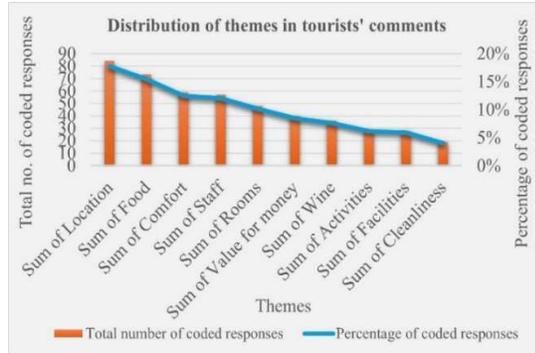


Fig. 6. The distribution of themes in the tourists' comments

The calculated mean of the review scores is 8.9016393, which shows that tourists gave an average of 8.9 score per review.

The analyzed themes were staff, facilities, cleanliness, comfort, value for money, location, wine, activities, rooms. A total of 473 coded responses were identified through qualitative analysis, from 122 eligible comments. The top 3 most mentioned themes by tourists and as a result, the most important for them, were: location (84 coded answers), food (73 coded answers) and comfort (59 coded answers) as shown in Table 5.

As can be seen the most important aspect for tourists was the location of the establishment. Even though they liked the landscape, they found the winery difficult to reach by individual transport due to its remote location. The quality of food was satisfying for most guests, but many items from the menu were not available at all times, probably due to the improper correlation of stock rotation or disproportionate rates compared to the increase in costs. Comfort is a key aspect for tourists. Most of the guests loved the tranquility of the location, although some inconveniences for them were the noise during the late-night events, the staff's insufficient training and foreign language skills. This is a consequence of the remote location of the winery, which leads to difficulties in finding a qualified and stable workforce. By collaboration with recruitment agencies this issue can be addressed by the management.

Fig. 6 shows the distribution of analyzed themes found in the comments of tourists.

One important aspect to mention is that out of 122 online reservations, only 20% were made by foreign tourists, which means that the company lacks visibility on the international tourism

market. Out of 24 reservations made by foreign tourists, 33% were made by business travellers. In total, 16% of all reservations were made by travellers coming for work purposes as can be seen in Table 6.

Seasonality is a common issue encountered in wine tourism and can be addressed by attracting more foreign tourists at the time of the year with the lowest bookings. The breakdown of the guest's stayover by month shows the pronounced seasonality in the occupancy of the accommodation facilities.

Fig. 7 shows the distribution of tourists' stayover by month.

As the data analysis demonstrates there is a dramatic decrease in reservations in the winter season months dropping down to only 11%. Taking into consideration that in the tourism business one of the most important aspects is the high occupancy rate throughout all seasons, it is crucial for the management to find and apply proper managerial strategies to overcome this

issue. One of the solutions could be collaboration with various touristic agencies. The company's SWOT analysis is presented in the following table.

Table 6

Distribution of foreign travellers

Foreign travellers	Frequency	Frequency distribution
Travellers for leisure	16	67%
Business travellers	8	33%
Total	24	100%

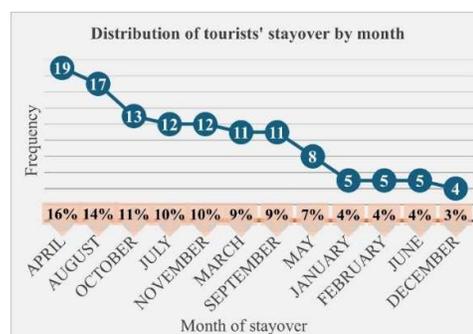


Fig. 7. The distribution of tourists' stayover by month

Table 7

SWOT analysis of the company.

Strenghts	Weaknesses
1.The company has innovative concepts for sales 2.The company has tasting staff focused on customer interaction 3.The company offers easy access for tourists to the modern winery 4.The company has multiple product sales channels 5.The company has a menu that goes well with the wines 6.The company has facilities for large capacity tastings 7. The company has wine bars in popular areas 8.The company emphasizes the experience and interaction with tourists 9. The company is located on "Romanian Wine Road." 10.The company promotes Romanian traditions through wines 11.The company produces wines that attract enthusiastic tourists 12. The company has unique terroir resources 13.The company has a favorable geographical position near the capital 14.The company has a new and properly equipped accommodation unit 15.The company has suitable natural factors to produce high-quality wines 16. The winery is in a natural setting ideal for wine tourism	1.The company has an insufficiently developed reputation 2.The company has disproportionate rates to the increase of costs 3.The company has foreign visitors who do not come for tourism 4.The company has wine tourism activities that contributes with only 15-20% to the total profit 5.The company has large areas not arranged for tourists 6.The company does not have a playground for children 7.The management of the company does not know well enough the profile of the contemporary consumer 8.The company does not offer enough activities 9.The company does not have wine bars nearby 10.The company has insufficient, unqualified, and unstable workforce 11.The company has an insufficient production of white and rosé wine 12.The company does not offer organized tours 13.The company does not have sufficient investments in the infrastructure for complementary activities 14.The company has an extremely pronounced seasonality phenomenon 15.The company is not sufficiently popular internationally 16.The company is difficult to reach for tourists due to its remote location
Opportunities	Threats
1.The legislation emphasizes the valorization of rural areas 2.Technological progress offers opportunities to optimize work processes	1.The war at the country's borders affects the motivation of tourists 2.The region is not sufficiently known internationally for wine tourism

<p>3.Popularization of wine tourism on a global level 4.The national strategy for tourism aims to promote the country as a tourist destination 5.The potential for expansion by building new wineries and tasting rooms 6.Increasing interest of tourists for visiting natural, unpolluted areas, post COVID-19 7. Promoting of the company in the HoReCa segment by selling wines through other hotels and restaurants 8. Increasing tourists' interest in visiting unexplored wine tourism areas 9. Access to external capital (European funds)</p>	<p>3.The tendency of tourists to choose locations with a wide variety of activities 4.Rising prices globally 5.Difficulties in finding and retaining specialized labor 6.Insufficiently developed transport infrastructure in the region 7.The legislation is insufficient, rigid, and not well structured 8.Tendency of tourists to spend short stays (1-3 days) 9.Intense competition in the region 10.The development of the region does not attract enough foreign investors 11.Lack of tourist attractions in the area</p>
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By evaluating the data from the SWOT analysis, the following conclusions were drawn:

1. The strong points of the company consist in the use of innovative concepts for wine sale and differentiation on the wine market, which can be exploited to obtain a competitive advantage.

2. Regarding the opportunities coming from the external environment, there is sufficient potential for growth and development if technological progress and growth of the global wine tourism phenomenon are considered.

3. However, the company must face intense competition while not having a sufficiently developed reputation. This challenge can be mitigated if the company improves its services and marketing strategy.

4. Big threats to the company are economic instability and regional conflicts, which demand well-planned risk management.

5. If the company uses its favorable geographical position or its modern facilities, then it can overcome the threats and weaknesses.

By implementing the strategies indicated in table 8, proposed in accordance with the typology presented by O.A. Gica [16] and by O.N. Bordean [17], numerous benefits can be brought to the tourism business, including optimization of services, expansion into new market segments, creation of new products or services closely related to existing ones, conception of a competitive advantage, etc.

By evaluating data obtained from the qualitative and statistical analyses of the tourists' comments, correlated with those obtained from the company's SWOT analysis, the options that will be subjected to the advanced multi-criteria analysis are:

- a) Expansion into new market segments through collaboration with travel agencies;
- b) Diversification of services by adding new activities;
- c) Developing a competent and sufficient workforce through collaboration with recruitment agencies.

Table 8

Proposed strategies based on the SWOT analysis.

SO	WO
<p>1.Market development strategy - attracting new market segments 2.Integrated strategy of low cost and differentiation 3.Concentric diversification strategy 4.Strategy for leveraging technological progress to optimize online presence 5.Investment in image and technology</p>	<p>1.Strategy focused on service improvement 2.Product development strategy 3.Management innovation strategy 4.Conglomerate diversification strategy (to counterbalance the phenomenon of seasonality) 5.Human resources strategy 6. Attracting foreign capital 7.Strategy for improving the image of the company</p>
ST	WT
<p>1.Business differentiation strategy 2.Building strong customer relationships 3.Exploitation of unique terroir resources 4.Marketing innovation strategy (using social media or personalized wine labeling) 5.Attracting ecotourists through implementation of sustainable practices</p>	<p>1.Collaboration strategy with travel agencies 2.Strategy for development of tourist offer 3. Staff training strategy 4.Service diversification strategy 5.Collaboration strategy with personnel training units</p>

All these options should be implemented by the company, but the multi-criteria analysis is applied to find out which of these has the most benefits, is achievable with the existing financial resources of the company and represents the optimal option in the current context. The criteria considered within the AMCA analysis of these variants were:

1. Demand of the option on the wine tourism market (DO)
2. Investment amortization (IA)
3. Investment risk (IR)

4. Ease of Investment Implementation (EI)
5. Innovation degree of investment (ID)
6. Investment value (cost) (IV)
7. Impact on consumer satisfaction (ICS)
8. Duration required to make the investment (DI)
9. Investment cost-effectiveness ratio (CER)
10. Impact on company's performance (IP)
11. Long-Term Return of Investment (LTR)
12. Short-term return of Investment (STR)

The weight of the criteria was allocated as it can be seen in Table 9.

Table 9

The weight of the criteria.

	DO	IA	IR	EI	ID	IV	ICS	DI	CER	IP	LTR	STR	Points	Level	γ
DO	1/2	1/2	0	1	1/2	1/2	1/2	1	0	0	0	1/2	5	9	1.20
IA	1/2	1/2	0	1	1/2	0	1	1	1/2	1/2	1/2	1	7	7	2.25
IR	1	1	1/2	1	1/2	1	1/2	1	1/2	1/2	1/2	1	9	1	4.67
EI	0	0	0	1/2	0	1/2	0	1/2	0	0	0	1/2	2	10.5	0.30
ID	1/2	1/2	1/2	1	1/2	1/2	1/2	1	1/2	1/2	1/2	1	7.5	5.5	2.67
IV	1/2	1	0	1/2	1/2	1/2	1/2	1	1/2	0	0	1	6	8	1.67
ICS	1/2	0	1/2	1	1/2	1/2	1/2	1	1/2	1	1/2	1	7.5	5.5	2.67
DI	0	0	0	1/2	0	0	0	1/2	0	0	0	1/2	1.5	12	0.15
CER	1	1/2	1/2	1	1/2	1/2	1/2	1	1/2	1/2	1/2	1	8	3.5	3.286
IP	1	1/2	1/2	1	1/2	1	0	1	1/2	1/2	1/2	1	8	3.5	3.286
LTR	1	1/2	1/2	1	1/2	1	1/2	1	1/2	1/2	1/2	1	8.5	2	4.00
STR	1/2	0	0	1/2	0	0	0	1/2	0	0	0	1/2	2	10.5	0.30

According to the criteria, N_i grades were awarded to each variant as seen in Table 10.

To be able to consider the consequence of the weight of each criterion, Table 11 was completed, where the grades awarded were amplified by the importance coefficient.

The highest score (222.7) places option a) expansion into new market segments by collaborating with travel agencies in first place. Second place is option b) with a final score of 209.31. Third place is option c) with 190.55 final score.

Table 10

Distribution of grades by variant.

	Option a)	Option b)	Option c)
Criterion	N_i	N_i	N_i
DO	10	10	10
IA	9	7	7
IR	8	9	5
EI	9	6	5
ID	8	9	6
IV	10	5	6
ICS	8	10	9
DI	6	7	8
CER	9	7	6
IP	7	8	10
LTR	9	7	8
STR	5	10	7

Table 11

Final score for options

		Option a)		Option b)		Option c)	
Criterion	γ_i	N_i	$N_i \times \gamma_i$	N_i	$N_i \times \gamma_i$	N_i	$N_i \times \gamma_i$
DO	1.20	10	12	10	12	10	12
IA	2.25	9	20.25	7	15.75	7	15.75
IR	4.67	8	37.36	9	42.03	5	23.35

EI	0.30	9	2.7	6	1.8	5	1.5
ID	2.67	8	21.36	9	24.03	6	16.02
IV	1.67	10	16.7	5	8.35	6	10.02
ICS	2.67	8	21.36	10	26.7	9	24.03
DI	0.15	6	0.9	7	1.05	8	1.2
CER	3.286	9	29.57	7	23.0	6	19.72
IP	3.286	7	23	8	26.3	10	32.86
LTR	4.00	9	36	7	28	8	32
STR	0.30	5	1.5	10	0.3	7	2.1
Final ranking			222.7		209.31		190.55

Until 2014, the company had a strategy focused on the production and sale of wine, these being the main activities. The sale of products was conducted mainly through HoReCa channel. Diversification of the company's services, by building a modern accommodation unit, took place recently. This allowed the company to enter the wine tourism market. From this point further, the company had a conglomerate diversification strategy, which brought additional income from tourism, but without excelling in the profit brought by this field. Currently, the company's management wants to invest in building a new winery equipped with ultra-modern equipment and a wine tasting center with a children's playground. This indicates that the company wants to expand its wine production capacity to increase its sales revenue. However, if the company chooses to implement the optimal option according to the multi-criteria analysis carried out in this study, i.e. to expand into new market segments, the company could benefit from the following advantages: increased revenues from tourism, increased accommodation unit occupancy, growing of international visibility, mitigating the phenomenon of seasonality, keeping up with current trends, etc.

Following the application of the multi-criteria analysis in the context of this study, the usefulness of the method was also confirmed in the field of wine tourism, in agreement with previous research that showed the applicability of the method in industrial companies [18].

5. CONCLUSION. FINAL REMARKS

Multi-criteria analysis is a useful technique for the management of wine tourism companies, as it can assist in the process of making objective

decisions, since its efficiency is based on accelerating the decision-making process of management.

The present paper proposed an advanced multi-criteria analysis model for a medium-sized wine tourism company from Romania. The analyzed company is part of the more than 80 wineries that offer wine tourism services in Romania, most of them falling into the categories of small and medium-sized companies. Currently, the management of the company has decided to expand the production capacity by building a new ultra-modern wine cellar and a wine tasting center with the help of European funds. The analyzed company has a good score from tourists' comments on online booking platforms. However, wine tourism services contribute only a small percentage to the profit of the business. The SWOT analysis of the company and the tourists' comments on two well-known online booking platforms indicate that the food, staff, and entertainment services need optimization, plus the image of the company is not well promoted. Instead, the company excels in the sale and quality of wines.

The multi-criteria analysis indicated that expansion into new market segments is the best management decision for overcoming this situation. By using the newly obtained information, the company could increase: its income from tourism, the occupancy rate of the accommodation unit, visibility, etc.

It is particularly important that ergonomics and multi-criteria analysis are taken into account by management when considering the continuous improvement of processes within the company. On top of that, from time to time the company should adjust following the reanalysis of the current situation. The data collected and evaluated in this study was sufficient for a small-

scale analysis. The number of valid comments was relatively low, with few comments from foreign tourists. This fact is due to the lack of visibility of the company and insufficient online feedback.

For future research, it is recommended additional data from other sources to be used, such as the company's personal reservation system or questionnaires addressed to tourists etc., as only the two booking platforms used were eligible for extracting data for analysis. Further research could provide a better overview of the activity of wine tourism companies and their need to improve managerial processes, helping to achieve business efficiency and competitive advantage.

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Optimizarea oenoturismului prin ergonomie: o analiză multi-criterială

Managementul eficient al afacerii se bazează întotdeauna pe adoptarea unor decizii înțelepte. În oenoturism colaborarea cu diferiți parteneri este necesară pentru succesul afacerii. O singură decizie managerială poate influența profitul, evoluția și reputația firmei. Lucrarea de față oferă un model de aplicare al analizei multicriteriale pentru adoptarea deciziilor de management în cadrul unei firme de oenoturism. Prin analiza calitativă și statistică a comentariilor turiștilor și analiza SWOT, problemele firmei au fost identificate. Analiza multi-criterială realizată a indicat că, extinderea pe noi segmente de piață este opțiunea optimă pentru creșterea profitului și a gradului de ocupare al unității de cazare. Analiza multi-criterială poate fi aplicată și în alte domenii ajutând în luarea deciziilor obiective.

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