BABEŞ-BOLYAI UNIVERSITY
FACULTY OF ECONOMICS AND BUSINESS ADMINISTRATION
DEPARTMENT OF MANAGEMENT

PhD THESIS

IMPROVING THE ACTIVITIES OF AQUATIC FACILITIES INTENDED FOR SPORTS AND RECREATION

SUMMARY

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KEY WORDS

Sports management, aquatic facilities intended for sports and recreation, customer satisfaction, swimming, sports organizations, safety measures, performance.

INTRODUCTION

The thesis entitled “Improving the activities of aquatic facilities intended for sports and recreation” tries to establish interdisciplinary connections between the management field and that of sports, and to provide solutions for improving the performance of sports and recreational aquatic facilities. The present work is aimed at evaluating the current state and suggesting new methods within the management of the aquatic facilities in Romania, as compared to the management within the same industry in the United States of America.

Delimitation and motivation of the PhD thesis

The management of the aquatic facilities is not a well-known area of study in Romania yet, but there had been a growing importance of this in the developed countries of the European Union and the United States of America. The importance is given by the large segment of the sports and recreation industry, which absorbs an increasing number of participants, from children to older people and people with disabilities. These facilities, where aquatic activities are carried out, include: competitive swimming pools, public swimming pools, aqua parks, beaches, lakes and marinas, all attracting a large number of patrons each year. The aquatic activities can be performed outdoor during the summer season or inside the indoor pools all year round.

Sports managers admit that sports facilities influence the organization in several ways. First of all, the number, type and quality of the sports programs and activities are directly influenced by the available facilities. Second, the quality of the sports facility is a direct reflection of the organization and its programs. Third, the sports facility represents an important advantage for the organization, which can affect the revenue generation in a positive or negative manner, the brand image and the customer satisfaction (Covell et al., 2003).

The lack of empirical studies in this research area, both at national and international level, prompted us to tackle the topic of the aquatics and recreation facilities management.

Defining the research objectives

Within the present work we are trying to combine the information regarding the aquatic and recreation activities with the management ones and to find the ways that can optimize the management of the aquatics facilities and can develop the programs such facilities provide in a complex manner.

The objective of the present work is not only that of a theoretical research but also that of an empirical one concerning the management of the aquatic and recreation activities. Considering the complexity of the research topic, we intended to set the following objectives.

I. Theoretical objectives

- Obtaining as much information and knowledge as possible regarding certain aspects less covered by the scientific literature.

- Developing certain theoretical and conceptual delimitations about the aquatic facilities management and its classification within the sports management.

- Establishing the role and usefulness of the aquatic and recreation facilities management, as well as examining the management activities that can contribute to the improvement of the aquatic facilities performance.

II. Empirical objectives

- Analyzing the activities of the aquatic facilities in Romania and comparing them with those in the United States of America.

- Evaluating the way in which the Romanian aquatic and recreation facilities give importance to the customer satisfaction and to the risk management.

- Establishing the existing correlations among the study variables and how certain variables influence others, as well as establishing the relationships among them.

Starting from these objectives, our study tries to find answers to the aspects presented previously, to establish interdisciplinary connections between the management field and that of sports, and to provide solutions for the improvement of the aquatic facilities performance. We hope that the results of our research, in a field not well-addressed in Romania, will manage to contribute to the completion of the scientific literature and will provide support to the managers who lead the aquatic and recreation facilities.

Structure of the PhD thesis

The PhD thesis is structured into four chapters, the first three of which are focused on the theoretical and conceptual frameworks, intended for the study of the scientific literature, while the fourth chapter is dedicated to the empirical research regarding the management of the aquatic and recreation facilities.

The first chapter aims at presenting a conceptual and theoretical classification of the sports organizations, as well as the particularities of the management within these organizations. Aside from the functions of the general management, the characteristics and functions of the sports organizations are also covered. At the end of the chapter, we approach the management objectives and methods of the sports organizations, as well as certain organizational matters of the sports facilities.

The second chapter is intended for discussing certain principles and practices applied within the sports management. The management, marketing, financial and economic, legal and ethical principles applied within the sports management represent the main object of this chapter. We have also focused our attention on the sports manager's profile and qualities, as well as on the sports facilities management. The analysis of how sports facilities are organized and the presentation of the types of sports facilities have been our concern as well, while creating this chapter.

Within **the third chapter,** we have tried to combine the information regarding aquatic activities and management activities and to find the ways that allow for the optimization of the aquatic facilities management and the development of the programs they provide. In addition to analyzing the aquatic programs, the modalities of ensuring the material basis and personnel are the main topics of the present chapter.

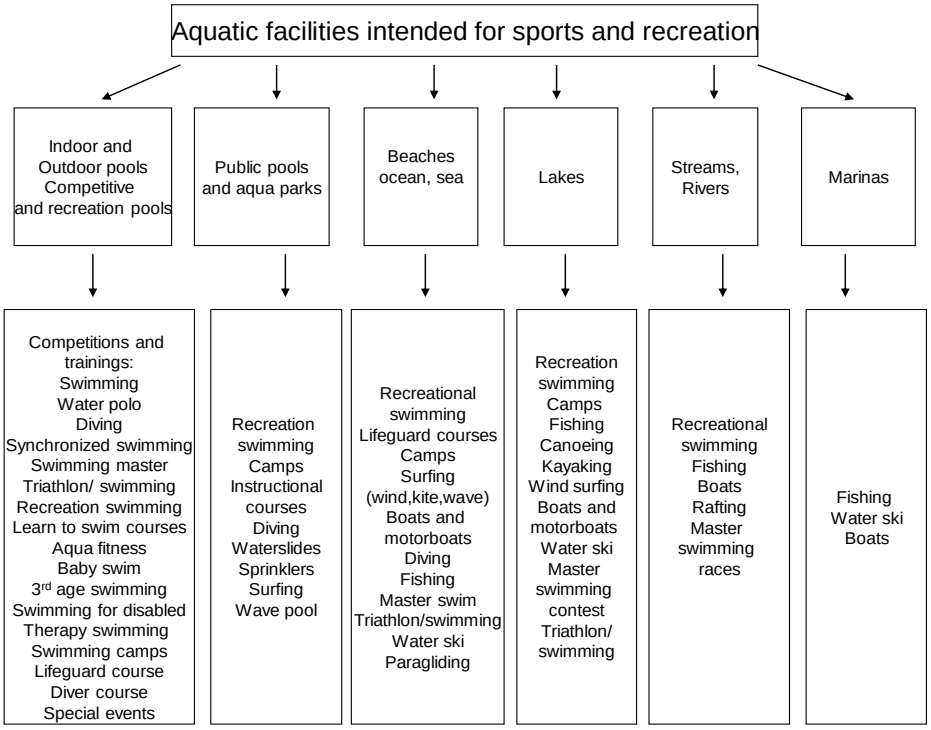
Chapter 4 is dedicated to the empirical research, presenting the research methodology, the study hypothesis, establishing the subjects and elaborating the surveys (in Romanian and English). Subsequently, we proceed to processing the data and interpreting them as well. Thus, based on the results obtained, we have tried to evaluate the activities of the aquatic facilities management in Romania.

As a conclusion, we wish that, by means of the theoretical documentation and the empirical research, we can contribute to the development of the sports management field of study and, implicitly, of the aquatic and recreation facilities. Lastly, we hope that our study will provide support from the management point of view to those who lead sports facilities.

MANAGEMENT OF AQUATIC FACILITIES INTENDED FOR SPORTS AND RECREATION

Activities of aquatics facilities intended for sports and recreation are performed within certain indoor and outdoor equipped facilities, which include competitive swimming pools, recreation and therapeutic pools, public swimming pools and aqua parks, as well as facilities set up on lakes, seas, oceans, rivers, marinas, where sports, recreation and recovery activities are pursued. The main aquatic activities can be classified according to the location where they are performed (Figure 3.1.).

Figure 3.1. Aquatic activities



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PART 2:

EMPIRICAL RESEARCH ON THE AQUATIC AND RECREATION FACILITIES MANAGEMENT

CHAPTER 4: ANALYSIS OF THE SPORTS AND RECREATION ACTIVITY

Usually, a study has a goal, followed by addressing a research question or by testing a hypothesis. Formulating questions helps us guide the research process. The questions can originate from several sources including theories, observations, experience or from mere curiosity (Palys,1997).

Within our research, we have established the following hypotheses:

Hypothesis 1: Professional competences and experience influence the holding of leadership positions within the aquatic facilities.

Hypothesis 2: Professional competences and experience of the aquatic facility manager influence the way in which he/she provides support to the employees.

Hypothesis 3: Aquatic facilities that offer more instructional swimming services and more complementary products and services are more profitable.

Hypothesis 4: The performance of the aquatic and recreation facilities differs according to the type of ownership (public or private).

Hypothesis 5: The performance of the aquatic and recreation facilities differs according to their size and complexity.

Hypothesis 6: The innovativeness of the aquatic facility manager influences the employee and customer satisfaction.

Hypothesis 7: Risk management by means of the safety provided within the aquatic facilities influences customer satisfaction.

4.1.2. Establishing subjects and elaborating the survey

Within our research we have selected the aquatic facilities in Romania and the United States of America. This selection is due to the fact that in the United States of America, there is a tradition in the organization system of the aquatic facilities and training programs for professionals in this field since 1914 by means of the resources provided by the American Red Cross, which are also due to the personal experience of many years of professional activity in the two countries.

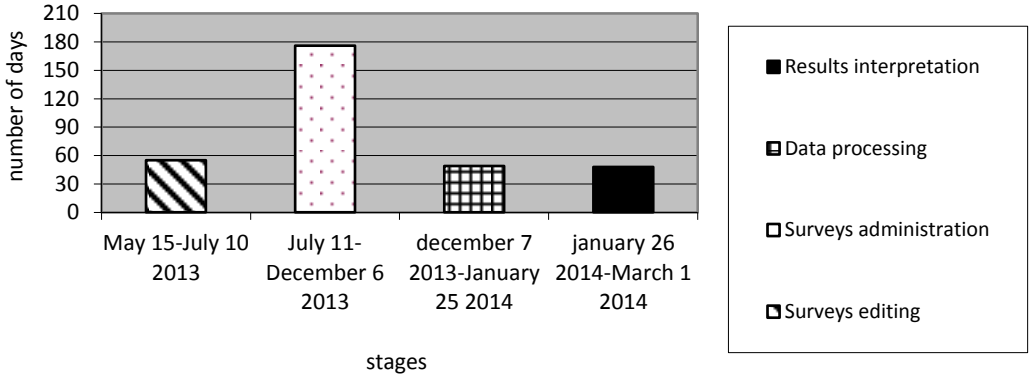
The American Red Cross teaches CPR and first aid courses to approximately 16 million people annually (ARC, 2010). Our wish is to take the American system characterized by customer safety and satisfaction as a model, but also by providing various aquatic programs in the sports branches where the USA excels when it comes to major sporting events (World Championships, Olympic Games). The comparative study deals with the management of aquatic and recreation facilities in Romania and abroad. The subjects of the research have been 24 managers and 156 patrons of certain aquatic facilities.

For our investigation regarding the centralized situation of the swimming pools, we have resorted to information provided by the National Institute of Statistics, the Romanian Swimming and Modern Pentathlon Federation, as well as the Romanian Water Polo Federation. As a result, we have learned that in 41 counties in Romania and Bucharest, there are 167 swimming pools, and 152 of which are functional. Only 15 of the 152 aquatic facilities are functional all year

round in the regions considered in our study, where training or competitions are held in certain sports disciplines that exist within the specialized national sports federations. Our research aimed at analyzing these aquatic facilities, with 93.33% coverage, more precisely 14 aquatic facilities in 9 counties: Arad, Bihor, Bistriţa Năsăud, Braşov, Cluj, Harghita, Mureş, Satu Mare, Sălaj and Bucharest. The research at the swimming pools in the United States of America was confined to 10 aquatic facilities in 3 states: New York, New Jersey, Connecticut, with similar activities to those in Romania, in which there were from 1 to 7 swimming pools included (at each sports facility).

The graphic representation of the research period is presented in Figure 6, highlighting the research time and stages. Thus, the editing period of the surveys started on May 15 and July 10, 2013, followed by a period of survey administration between July 11 and December 6, 2013, the results processing and interpretation being performed between December 7, 2013 and January 25, 2014 and between January 26 and March 1st of 2014, respectively.

Figure 4.1. Research stages, graphic representation



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We have used two surveys in our research, both edited in Romanian and English: one survey was addressed to managers and it contains 28 questions and the other survey was addressed to customers and it contains 9 questions.

The survey provides us with a quantitative or numerical description of the tendencies or attitudes of a population we are interested in (Creswell, 2003).

We have also introduced in the survey questions where those surveyed had to choose according to their preferences on a scale (a) from one to four, for managers and (b) from one to five for patrons. One of the most frequently used scoring scale is the Likert scale, which is intended for evaluating the attitude of the subjects who express their agreement or disagreement degree regarding a certain topic. The scale has, usually, a set of equal steps for the agreement and the disagreement. The subjects are asked to choose one of the four or five answers, respectively.

Since the information obtained by means of the survey is interpreted in a relative manner or as statistical indicators, it is very important that the surveyed people belong to as many categories as possible, interested in those facts (Gagea, 1999:227). Therefore, 24 managers from different aquatic facilities have been surveyed, from 26 years old to 62 years old, 72.85% of whom were males and 27.15% were females. At customer level, 156 people have been surveyed, from 18 years old to 83 years old, 44.9% of whom were males and 55.1% were females (Table 4.1.).

Table 4.1. Number, age and gender of the surveyed people

	Number of those surveyed	**Minimum age (years)**	**Maximum age (years)**	**Females (%)**	**Men (%)**
Managers	24	26	62	27.15	72.85
Patrons	156	18	83	55.10	44.90

For the processing of the results of the surveys we have used the SPSS 14.0 statistic program and Microsoft Office Excel 2007.

4.3. TESTING THE HYPOTHESES AND INTERPRETING THE RESULTS

For the analysis of the data within our research, we have resorted to three methods and statistical tests:

- Chi square – the test of associating the qualitative variables;

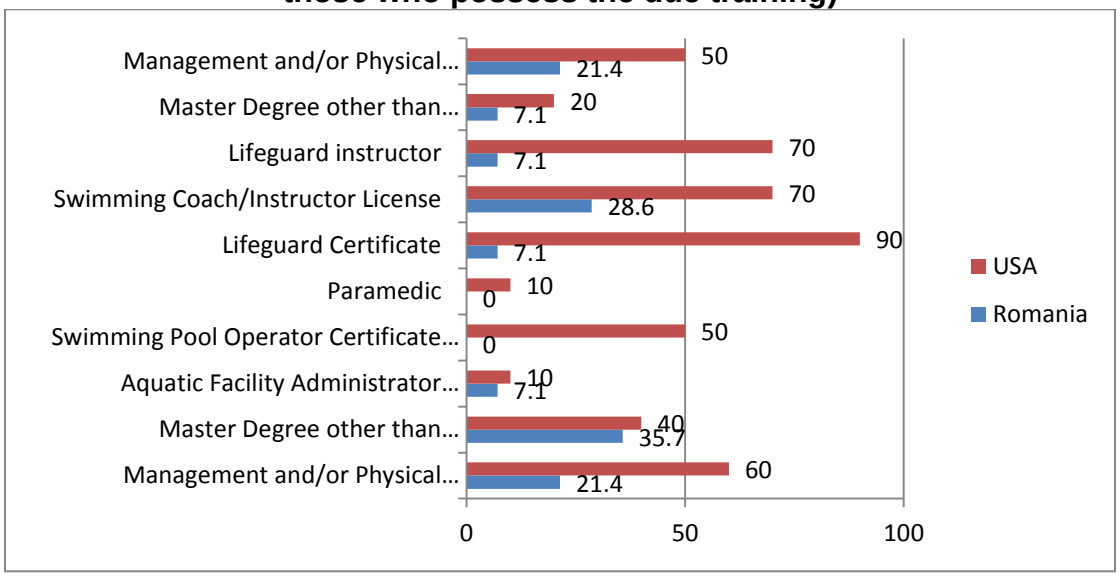
- ANOVA test, by means of the "F" value at comparing the averages between the categories;

- testing the relationship between two quantitative variables using the correlation analysis, by means of the "r" value.

While analyzing the research hypotheses, considering the relationships between the investigated phenomena, we have performed descriptive and comparative analyses for obtaining more eloquent results.

According to the results, we can observe a better professional qualification of the managers in the United States of America as compared to the managers in Romania, both from the point of view of the certifications achieved and the work experience in the field.

Figure 4.4. Education degree of the aquatic facility manager (percentage of those who possess the due training)

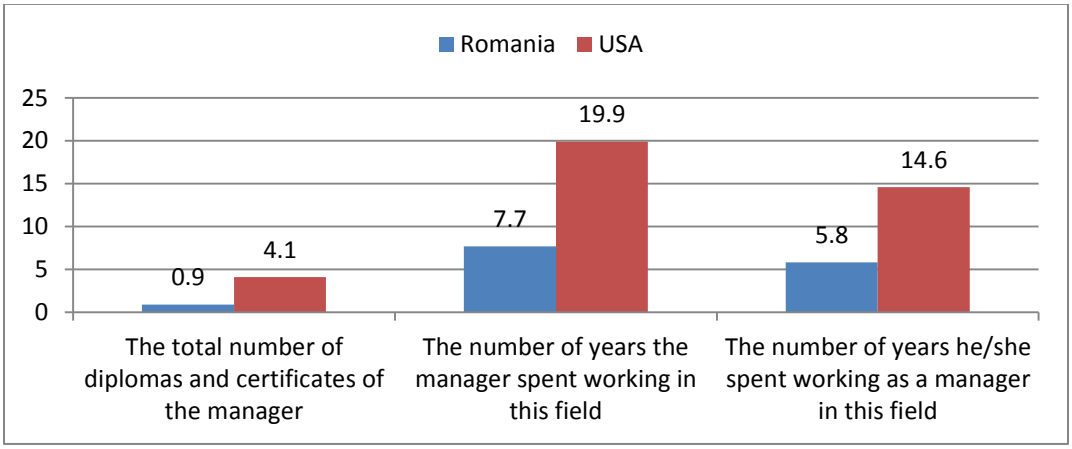


A value of the significance threshold under 0.05 can be observed when studying the experience in the work field as a manager, and also when it comes to the number of diplomas and certifications achieved by the managers of the aquatic facilities of the two countries studied. In order to be able to make the comparison, we have used the analysis of variance (ANOVA). The managers of swimming pools in the USA hold an average number of 4.1 diplomas and certifications in the field and 19.9 years of work in the field, 14.6 of which are holding a management position, while, in Romania, the managers of the swimming pools have achieved an average number of 0.9 diplomas and certifications and have a work experience in the field of 7.7 years, 5.8 of which in a managerial position (Figure 4.5.).

Table 4.4. Experience of the aquatic facility manager in this field – averages (ANOVA analysis)

	Romania	USA	Significance (p)
The average number of the manager's diplomas and certifications	0,9	4,1	0,000
The average number of years since the manager is working in this field	7,7	19,9	0,001
The average number of years spent working as manager in this field	5,8	14,6	0,009

Figure 4.5. Experience of the aquatic facility manager in this field (the comparison of environments in Romania and the USA)



A relationship can be observed by classifying the number of activities for the profitable or unprofitable aquatic facilities in both countries. Thereby, in Romania, the category that represents a strong relationship with the profitability of the aquatic facility is the one that provides services related to various swimming programs, which means that the swimming pools that offer more competitive swimming services are less profitable (the unprofitable ones provide an average of 3.3 types of swimming programs, while only 2.4 for the profitable ones). When it comes to the swimming courses in Romania, a higher profitability of the aquatic facilities can be noticed for those facilities that provide several such services (2.4 as compared to the 2.0 average number of programs in the case of the unprofitable ones). In the United States of America though, there is a significant relationship for two categories, depending on the profitability of the sports facility. These are the competitive sports services, respectively the instructional swimming courses, with a significance of p=0.011 and p= 0.048 respectively. The aquatic facilities that provide such services are more profitable (Table 4.11.).

Table 4.11. The average number of services provided for each category, according to the profitability of the aquatic facility in the past year in the USA (ANOVA analysis)

USA	Unprofitable	Profitable	Total	Significance (p)
The average number of services provided – competitive sports	0.5	3.0	2.0	**0.011**
The average number of services provided – swimming programs, aqua fitness	2.8	3.2	3.0	0.675
The average number of services provided – courses	1.5	3.2	2.5	**0.048**
The average number of services provided – other additional services	3.0	2.0	2.4	0.160

For the performance testing, we have considered the correlation between the overall area of the swimming pools and the average number of customers visiting in a week, respectively in an year (the previous year) the aquatic facility, both in

the United States and Romania (Tables 4.17-4.20.). The Pearson`s r values indicate that the performance of the aquatic facilities is closely related to their size and complexity, having a significance below 0.05. Thereby, the more services the aquatic facilities provide and the greater the swimming pool's area is, the higher the number of customers will visit.

Table 4.17. Correlation between the overall area of the pools and the average of customers visiting the aquatic facility in a week

Overall	Pearson Correlation (r)	0.876
	Sig. (2-tailed)	0.000
Romania	Pearson Correlation (r)	0.929
	Sig. (2-tailed)	0.000

Table 4.18. Correlation between the total number of the services provided and the average of customers visiting the aquatic facility in a week

Total		Pearson Correlation (r)	0.576
		Sig. (2-tailed)	0.003
	Romania	Pearson Correlation (r)	0.820
		Sig. (2-tailed)	0.000

Figure 4.8. Chart of correlation between the total number of services provided and the average of the customers who visit the aquatic facility in a week (the aquatic facilities in Romania)

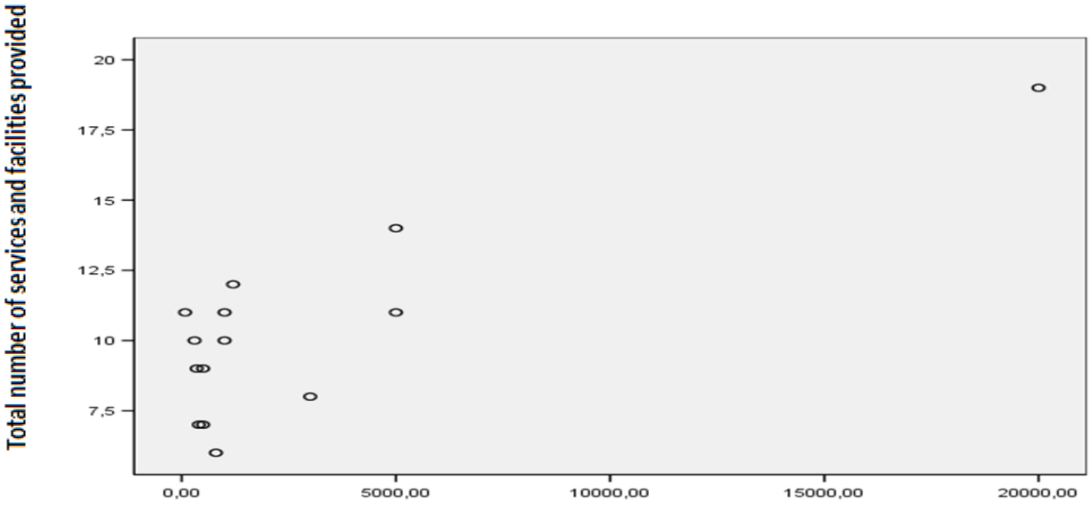


Table 4.19. Correlation between the number of customers who have visited the aquatic facility the previous year, per employee and overall area of the pools

Romania	Pearson Correlation (r)	0.863
	Sig. (2-tailed)	0.000

Table 4.20. Correlation between the number of customers who have visited the aquatic facility the previous year per employee and the total number of services and facilities

Romania	Pearson Correlation (r)	0.756
	Sig. (2-tailed)	0.000

In order to find out if the risk management through the safety provided influences customer satisfaction, we have used the customer satisfaction index for each aquatic facility and the overall number of safety measures employed within those aquatic facilities. Table 4.22 presents the number of safety measures in the two countries we have analyzed. This average number of the safety measures in the USA (9.6) exceeds significantly the number in Romania (5.6) and the difference proved to be thus significant at p=0,000.

Table 4.22. The average number of the safety measures in the aquatic facilities in each country (ANOVA analysis)

	Average number of the safety measures	**Significance (p)**
Romania	5.6	0.000
USA	9.6	
Total	7.2	

The correlation between the safety measures number and the customer satisfaction index, and the correlation between the number of safety measures and the customer satisfaction index regarding the safety provided leads us to the idea that there is an obvious difference in the concerns regarding the risk management within the aquatic facilities that influences customer satisfaction.

The number of safety measures is much higher in the aquatic facilities in the United States as compared to Romania.

FINAL CONCLUSIONS AND PERSONAL CONTRIBUTIONS

Throughout our research, we have aimed at achieving the set objectives and we have approached the topic “Improving the activities of aquatic facilities intended for sports and recreation” in an interdisciplinary manner. In accordance to the research methodology, we have tried to demonstrate the use of the theoretical information and to validate the research hypotheses.

Based upon the work’s main objective, after studying the scientific literature and carrying out the empirical research, we have noticed the following:

- The relationship that exists between general management, sports management, sports facilities management and aquatic facilities management;

- The similarities and differences between the activities of the aquatic facilities in Romania and the United States of America;

- The examination of the professional certification and work experience of the managers leading the aquatic facilities studied;

- The correlation between customer satisfaction and risk management within aquatic and recreation facilities;

- The examination of the aquatic facilities performance in terms of activities conducted within these facilities.

Our study has tried to find answers to the aspects presented above, to establish interdisciplinary connections between management area and sports area and to provide solutions for the improvement of the performance of aquatic and recreation facilities. We hope that the results of our research, within a field that does not have a broad related literature not only in Romania, but also abroad, will manage to contribute to the supplementation of the scientific literature and to provide a real support to the managers who are leading the aquatic and recreation facilities.

The comparative study between the aquatic facilities in Romania and those in the United States of America has confirmed, from the point of view of the research hypotheses, certain differences regarding the management of these sports facilities. The differences are as follows:

The managers in the United States of America have professional qualification not only from the point of view of the diplomas obtained, but also of the work experience in the specific field, which is better than the one of the managers in Romania. This is why it would be recommended for the aquatic facilities to organize management courses, as well as certain courses to obtain lifeguard certificates, recognized also abroad, in partnership with international organizations.

In the United States of America, there is a significant relationship for two of the analyzed categories, depending on the profitability of the sports facility. These are the competitive sports activities and the swimming initiation courses respectively. The aquatic facilities that provide this kind of services are more profitable in the United States of America. In Romania, only those for which the high share of activities is oriented towards the swimming initiation courses prove to be more profitable; on the other hand, the swimming pools that provide more competitive swimming services are less profitable. This is due to the fact that the preparation during trainings and the attendance of courses of competitive

swimming, water polo and diving generate higher revenues in the United States of America, while in Romania certain swimming pools provide free or discounted rent for training and competition area to the sports clubs (for such activities).

As a consequence of the study carried out within the present work, we have reached the conclusion that not all aquatic programs are suitable to any sports facility. The programs shall be carefully chosen, first of all selecting those based on the customers' interests and skills, monitoring if the programs fulfill the main purpose of the aquatic facilities. Nevertheless, it will be necessary to establish if the sports facility has the personnel, the space and the equipment necessary for providing the desired programs.

Moreover, the research confirmed that the number of the safety measures specific for the risk management provided within the aquatic facilities influences customer satisfaction and this indicator is much higher in the USA as compared to Romania. Customer satisfaction from the point of view of the safety provided within the aquatic facilities in Romania could be improved by: the endowment with quality equipment and suitable for prevention and rescue in case of injury; preparing the personnel by means of various qualification and first aid courses; the endowment of the aquatic facilities with devices allowing access to the water for people with disabilities; setting up a national commission for the accreditation and supervision of the aquatic facilities operation.

LIMITS AND PERSPECTIVES OF THE RESEARCH

Although the empirical research has been conducted without a very large sample because of the financial limitation and the difficult access to information related to these aquatic facilities, we wish to extend the research in the future to a wider geographical spreading that would express a growth of the representativeness of the results within the present field of study.

PERSPECTIVES

Conducting a similar comparative analysis between other countries of the European Union, which could provide essential information for the development of the research within the sports management field.

Extending the research by making a forecast in order to see how this study will evolve in the near future. It would be interesting to see what changes could be reported concerning the activities carried out by the aquatic facilities, 10 years from now.

SUGGESTIONS

The evaluation of the aquatic areas usage within the swimming pools is important in order to establish if they are fully used at operating hours. In order to perform this evaluation, the pool should be monitored each operating hour, the number of registered patrons and the number of present patrons should be observed and then the area surface usable within the programs hours be determined. Thus, the available area could be reassigned to another program, generating higher revenues per hour.

Customer satisfaction from the point of view of the safety provided within the aquatic facilities in Romania could be improved by: the endowment with quality equipment, suitable for prevention and rescue in case of injury and especially the endowment of the aquatic facilities with devices granting access to the water for the people with disabilities.

If there are ideas for planning a new program, but there is no certainty that it would attract many people who would like to subscribe, a “pilot test” can be conducted. These pilot tests are giving the customers the chance to try a new activity during a course and to decide if they want to attend the new program.

A solution for attracting customers would be adding a playground for children with a shallow pool with waterslides, spray features, toys, etc. These mini aqua parks added to the traditional indoor and outdoor pools have increased significantly the number of patrons in the last two years within the aquatic facilities studied in the United States of America.

The personnel in the aquatic facility should do everything necessary in order to keep up to date in their profession as sports facility manager. Therefore, it would be recommended for them to attend national and international meetings and conferences, to obtain the necessary certifications, to be up to date with the changes that take place within the personnel training programs and to be constantly looking for the best professionals available to work within the aquatic facilities they lead.

We believe it would be important for the managers and teachers in aquatic facilities to organize management courses within the field of aquatic facilities intended for sports and recreation, including courses resulting in the acquisition of a lifeguard certificate recognized abroad as well, in partnership with international organizations. We also believe that is essential to establish a national commission for accreditation and supervision of aquatic facilities operation.

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