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## Article

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**CIRCULAR ECONOMY – A NEW DIRECTION FOR THE SUSTAINABILITY  
OF THE HOTEL INDUSTRY IN ROMANIA?**

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**Abstract**

The present article deals with aspects related to the transition to a new model of economy – the circular economy – a more appropriate model for the current tendencies of ensuring the sustainability of economic processes. Tourism, as an economic branch with strong dynamics in recent years, is one of the areas where resource conservation and environmental protection are of significant importance. Circular tourism, derived from the principles of circular economy, aims at recycling tourism resources and favoring the sustainable development of the environment, thus giving tourists a greater sense of responsibility.

The authors sought to study the influence of the implementation of integrated quality-environment-security systems on the economic performance of hotel establishments in Romania from the perspective of industry managers, as a starting point for determining the applicability of the principles of circular economy in this sector. In order to study this influence, questionnaires were addressed to tourism operators in order to establish the existing link between the implementation of ISO 9001, ISO 14001 and OHSAS 18001 standards and the economic, social and environmental performance of those operators.

From the perspective of the systemic approach and analyzing the obtained data, the authors of the paper argue that the hotel industry in Romania is not yet sufficiently prepared to adopt the principles of the circular economy, the adoption of an integrated management system not having as much influence as believed on the performances of the operators in the field.

**Keywords:** sustainable development, circular economy, circular tourism, integrated management system, economical performance

**JEL Classification:** L83, Q01, Q56, Z32

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## **Introduction**

At present, there is growing concern about the negative impact human actions have on the environment, taking into account the limited, but especially non-regenerative resources of the planet. Thus, sustainable development becomes a way of thinking and acting both for the population and for the business environment, and in this sense, well-defined principles and actions, meant to ensure, in the end, the protection of the environment, are needed. In this context, the circular economy becomes one of the greatest challenges and, at the same time, opportunities of the present, with new ideas and principles that support the reuse of resources instead of effective consumption, which leads to their exhaustion.

The tourism industry, the world's fastest growing industry, is strongly linked to sustainability, while being a highly sensitive sector, both from the point of view of (over)use of resources and waste generation. In a knowledge-based society, with large volumes of information accessible to anyone, anywhere, tourism consumers become more demanding; their requirements for quality are increasingly growing and they appreciate more and more the variety of products and services, the new and unprecedented experiences, the flexibility in creating a holiday. As a positive element, more and more tourists express their desire for a clean environment, but, at the same time, for tourism experiences in the nature and tourism products that include culture, heritage and history. Thus, all actors in this industry face profound challenges and are forced not only to look for new ways of becoming competitive on a market where competition is fierce, but also to pay more attention to developing and promoting sustainability. They are becoming more concerned about being compatible with the environment, especially by preserving the resources on which tourism's success depends on in both the short and long term.

Globally, sustainable tourism becomes more and more widespread - not only customers' demand for this type of tourism is growing, but also suppliers in the tourism area keep developing new green programs and governments increasingly create policies aimed at encouraging sustainable tourism practices.

According to the World Tourism Organization, "sustainable tourism development requires the informed participation of all relevant stakeholders, as well as strong political leadership to ensure wide participation and consensus building". (UNWTO, 2005) Achieving sustainable tourism is an ongoing process that requires constant monitoring of impacts and introducing the necessary preventive and/or corrective measures. Furthermore, sustainable tourism should maintain a high level of satisfaction for tourists, making them more aware of sustainability issues and promoting sustainable tourism practices among them. Thus, in the context of growing demands for sustainability, the circular economy, which has become the most viable model for the global economy, is also transferred to the tourism industry in the form of circular tourism.

### **1. Circular economy – a sustainable economic model**

In the current economy, the linear model is the dominant one, based on consumption, on large quantities of easily accessible resources and energy, which makes it increasingly inappropriate for the reality it is used in. (United Nations, 2015) An attempt of an efficient approach of reducing resources and fossil energy used by each economic agent will not alter their finite nature, but will only defer the inevitable, thus requiring other fundamental changes.

In this context, the concept of "circular economy" is attracting more and more attention in recent years. It is characterized, more than defined, as a regenerative economy, which aims at keeping products, components, materials at their highest level of utility and value at any time, making a distinction between technical and biological cycles. The circular economy is conceived as a continuous positive development cycle that preserves and improves natural capital, optimizes resource efficiency and minimizes system risks by managing finished stocks and renewable streams, proving efficiency at all levels. In this context, the concept of "circular economy" is attracting more and more attention in recent years. It is characterized, more than defined, as a regenerative economy, which aims to keep products, components, materials at their highest level of utility and value at any time, making a distinction between technical and biological cycles. The circular economy is conceived as a continuous positive development cycle that preserves and improves natural capital, optimizes resource efficiency and minimizes system risks by managing finite stocks and renewable streams, thus proving its efficiency at all levels.

The circular economy refers to a regenerative system by intent and design, replacing the "end of life cycle" term with restoration. The direction is that of using renewable energy, eliminating toxic chemicals and reducing waste and rubbish through a superior design of materials, products, systems and, implicitly, business models. (Van Rheede, 2012)

There are three principles underpinning the circular economy (World Economic Forum, 2016):

- *principle 1* – conservation and improvement of natural capital by controlling the finite stocks and balancing the renewable resources flow (eg. replacing fossil fuel with renewable energy or using the maximum sustainable yield method in order to conserve fish stocks)
- *principle 2* – optimization of resource efficiency through products, components and materials that run at the highest level of utility at all times, for both technical and biological cycles (eg. sharing products and extending their use cycles)
- *principle 3* – promotion of the effectiveness of the system by identifying and designing negative externalities such as water, air, soil and noise pollution, climate change or health-related harm associated with resource use

Studies and good practice examples identified over time demonstrate that a transition to the circular economy could bring lasting benefits to a more innovative and productive economy. The tourism industry, as the fastest-growing economic sector globally, also benefits from these positive aspects, all the more so in the context of sustainable development.

As the latest statistics show, the environment is in a continuous process of degradation, the oldest of the planet's economies using natural resources at a faster pace than their ability to regenerate. Moreover, as the middle class in emerging countries develops and real estate investment in hotels in these regions grows, the resource problem is getting bigger, which translates into a greater responsibility of Western companies involved in such projects, both from the environmental point of view and the social perspective of sustainability.

## **2. Integrated management systems, an important tool for sustainable development**

As of 2007, a group of 27 organizations (the Partnership for Global Sustainable Tourism Criteria) have decided to conceive some criteria that intend to draw some basic directions

for the development of sustainable tourism. Approximately 100,000 stakeholders from the tourism industry have been consulted, more than 4,500 criteria from over 60 existing certifications have been analyzed and the comments from more than 1,500 people have been taken into consideration. Thus, the Sustainable Tourism Criteria have been developed, which are in a permanent improvement process, being evaluated every 2 years according to the ISEAL Code of Best Practice and modified accordingly. These represent, in fact, a response of the tourism community to the global challenges of the United Nations' Millennium Development Goals, poverty reduction and environmental sustainability (including climate change) being the main issues addressed through these criteria.

The Global Sustainable Tourism Criteria represents an attempt to create a unified vision regarding the sustainability concept and will be the minimum that any tourism business should aspire to. Although the criteria were originally designed for use only by hoteliers and tour operators, they have applicability throughout the entire tourism industry. Thus, the Sustainable Tourism Criteria can be considered as the beginning of a process meant to make sustainability a standard practice for all forms of tourism. It is expected, among other things, for these criteria to (Global Sustainable Tourism Council, 2012):

- serve as basic guidelines for businesses of any size to become more sustainable
- support businesses in the tourism industry to adopt sustainable programs that meet the criteria
- help consumers identify tourism programs and businesses that are truly sustainable
- support certification and other voluntary programs in ensuring that their standards are in line with a widely accepted baseline
- offer governmental, non-governmental and private sector programs a starting point for developing sustainable tourism requirements
- serve as basic guidelines for education and training bodies

The Sustainable Tourism Criteria are organized around four main themes as follows:

- effective sustainability planning - (e.g.: legal compliance, guidance and training, customer satisfaction, accurate promotion, buildings and infrastructure, respect heritage, land water and property rights)
- maximizing social and economic benefits for the local community and minimizing the negative impact (e.g.: community support, local employment, local purchasing, local entrepreneurs, equal opportunity, employee protection and wages)
- enhancing cultural heritage (e.g.: code of behaviour - visits, site protection and access, presenting culture and heritage)
- maximizing environmental benefits and reducing the negative impact (e.g.: conserving resources, reducing pollution, conserving biodiversity, ecosystems and landscapes)

The Sustainable Tourism Criteria act, to some extent, like standards designed to create a series of universally accepted practices regarding sustainable tourism. Their scope intertwines with that of other standards, an eloquent example in this case being the International Standards Office (ISO) standards relating mainly to environmental management, standards that can successfully support the implementation of the Sustainable

Tourism Criteria. However, ISO standards regarding the environmental management are more and more often used with the standards of quality management and occupational health and safety, becoming more effective in an integrated approach.

In the current global economic context, companies in all sectors face numerous challenges, so that management systems and standards have become a key issue and, at the same time, a prerequisite for survival. The pressure and growing demands from various stakeholders, both internal and external, including the regulatory bodies, the community, the customers, the employees, the suppliers and the governments impose the necessity to adopt such systems/standards. (Psomas, Pantouvakis and Kafetzopoulos, 2013)

The ISO 9000 family addresses various aspects regarding quality management and includes some of the most popular ISO standards. These standards offer companies and organizations guidance and the necessary tools to provide the same quality every time, according to customer requirements. At present, the ISO 9000 standards are periodically revised following the feedback received from those who are implementing them.

ISO 9000 is based on eight quality management principles defined in ISO 9000:2005 – "Quality management systems - Fundamentals and vocabulary" and ISO 9004:2009 – "Managing for the sustained success of an organization - A quality management approach" (ISO, 2012):

- *customer orientation* – the organization needs to understand clients' needs, meet their requirements and try to overcome their expectations
- *leadership* – leaders outline the direction and scope of the organization; they should create and maintain that environment where people can be fully involved in achieving the organization's goals
- *staff involvement* – the staff is the essence of an organization and their full implication allows using their abilities for the benefit of the organization
- *process approach* – the desired results can be obtained more efficiently if the activities and related resources are managed as a process
- *system approach* – identifying, understanding and managing interdependent processes as a system contributes to the organization's effectiveness and efficiency in achieving goals
- *continuous improvement* – the permanent goal of an organization must be that of continuously improving its performance
- *factual approach in decision-making* – effective decisions are based on data and information analysis
- *mutually beneficial relationships with suppliers* – an organization and its suppliers are interdependent, and a mutually beneficial relationship increases their ability to create value

The purpose of the ISO 14000 standards family regarding the environmental management is that of helping organizations minimize the negative impact of their operations on the environment, and also ensuring the compliance with actual legislation and other environmental requirements. It is sought to promote a more effective and efficient environmental management within organizations and to provide useful tools, efficient from the point of view of costs, flexible, that reflect the best organizational practices in terms of collecting, interpreting and communicating relevant environment information.

The most important element of the ISO 14000 series is ISO 14001, which represents the basic set of standards used by organizations for designing and implementing an effective environmental management system. Therefore, ISO 14001 does not set conditions for achieving performance in the environment domain, but it outlines a framework in which companies can develop an effective environmental management system, making it possible to be implemented by any organization wishing to improve resource use efficiency, reduce waste and costs.

Among the most important benefits of using the ISO 14001 standard, the following can be mentioned (ISO, 2015b):

- demonstrating the compliance with current and future regulations
- increasing leadership and employee engagement
- improving the company's reputation and increasing stakeholders' trust through strategic communication
- achieving strategic business goals through incorporating environmental issues into business management
- providing a competitive and financial advantage by improving efficiency and reducing costs

OHSAS 18001 is a British standard referring to occupational health and safety management systems applied internationally, being widely recognized.

Organizations around the world recognize the need to monitor and improve performance in the health and safety area and, therefore, use occupational health and safety management systems. Increasing the number of national standards and patented certification schemes created confusion and led to market fragmentation, and has affected the credibility of individual schemes, so that the need for a common approach to these issues has been imposed. In 1999, a group consisting of representatives from national standardization bodies, academic units, accreditation and certification bodies and institutions in the field of occupational health and safety, together with the national standards body of the United Kingdom (BSI) published the OHSAS 18000 series. This was composed of OHSAS 18001 (requirements of an occupational health and safety management system) and OHSAS 18002 (instructions for implementation).

The OHSAS 18000 series supporters argue that an occupational health and safety management system promotes a safe and healthy work environment by providing a framework that helps organizations:

- to identify and control risks regarding health and security
- to reduce the likelihood of accidents
- to be in accordance with the existing regulations
- to improve global performance

Taking into account the tourism industry, we can also mention the ISO 22000 and ISO 27001 standards, important for the optimal evolution of the tourism activity.

ISO 22000 is an international standard used by organizations in the food chain and contains traditional preventive quality assurance measures and preventive food safety measures. Its main purpose is to reduce or even eliminate food safety risks as a way of protecting consumers. ISO 22000 allows the creation of a food safety management system, being, at the same time, an important component of the quality management system. It includes HACCP principles and requirements regarding the food chain safety and has numerous benefits, including:

- it ensures the compliance of products and services with international standards
- it offers a quality and safety guarantee
- it increases consumer confidence
- it increases the quality of life
- it represents an important source of technological know-how in the nutrition field
- it creates a regulatory framework for certification
- it represents auditable standards, with clear requirements
- it optimizes the use of resources

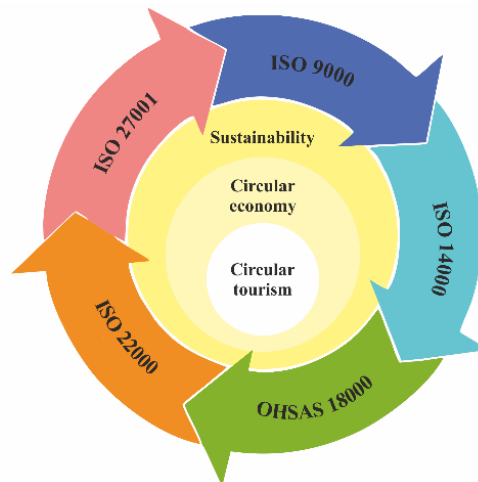
ISO 27001 is the only international auditable standard that clearly establishes the requirements for an information security management system, helping to identify, manage and minimize threats that may affect information. ISO 27001 certification demonstrates to existing and potential customers that a company has defined and implemented information security processes. The main benefits offered by this standard are as follows:

- avoiding financial losses associated with leakage of information
- protecting and improving the company's reputation
- improving the company's structure
- reducing the frequency of audit activities
- gaining new clients and improving the loyalty of the existing ones

Management systems and standards have become an essential aspect for any company and, at the same time, a precondition for survival in the current global context. The increasing pressure and demands of various stakeholders, both internal and external, including regulatory bodies, the community, customers, employees, suppliers and governments, impose the necessity of the adoption of systems/standards.

In order to meet the needs of different stakeholders, organizations typically use individual management systems such as those regarding the environment, social responsibility, quality or health and safety. Implementing and maintaining such systems requires the allocation of important resources with a direct impact on the entity. Thus, as the number of independent management systems grows within an organization, the need to integrate them into a single system appears, in order to facilitate their understanding, to streamline their use, and to eliminate redundancies. (figure no.1 )





**Figure no. 1: Integrated management systems – support for the circular economy**

Briefly, the integration process involves identifying stakeholders' requirements, structuring them and then addressing them in an integrated manner. An integrated management system gives rise to structures and processes that facilitate the integration of management systems and expectations and requirements of stakeholders in business processes. Consequently, such a system is conceived as a set of interconnected processes that share the same human, material, financial, informational resources in order to achieve specific objectives. (Karapetrovic, 2003)

Integration fundamentally transforms an organization through strategic, tactical and operational changes. At strategic level, for example, it provides a mechanism aimed at increasing the interaction with stakeholders and, thus, a way to meet their requirements by channelling the organizations' resources. From a tactical point of view, integration focuses on designing an integrated management manual, procedures and processes, but also on developing criteria and norms used at subsequent evaluation of the integration. Finally, at the operational level, instructions and work activities are integrated. Support activities, such as auditing or general administration, are also designed to promote efficiency, save resources, and reduce confusion amongst operational staff. (Asif et al., 2011)

Among the most important benefits of the integration process within a company (Zutshi and Sohal, 2005) are:

- costs reduction and increase of efficiency
- the existence of simpler, more concise management systems
- the reduction of the time needed to adopt different systems (a single objective is pursued – continuous improvement)
- the improvement of communication between different organizational levels
- the increase of clients' trust level
- image improvement on the market

- the attraction of new clients
- elimination of duplicate, redundant policies, procedures and records, which means, implicitly, less effort for implementing and maintaining the systems
- a better control of documents
- a more efficient use of internal audits for preparing third-party assessments
- the facilitation of operational control

Given the importance of sustainability in the current economic context and the strong dynamics of the tourism industry, we believe that a study that looks at the impact of using integrated management systems (taking ISO 9001, ISO 14001 and OHSAS 18001 as suggestive individual systems), as tools for sustainable development, on an important part of this sector, namely the hotel industry, could act as a starting point for drawing future directions in this respect and, moreover, as a good opportunity to define the potential for applying the principles of the circular economy in this area.

### **3. Research methodology**

In order to have a view on the impact of applying the three quality, environment and occupational health and security management systems (ISO 9001, ISO 14001, OHSAS 18001) on the performance of the hotel industry and, thereby, to see to what extent this sector is prepared for the application of the principles of the circular economy, a correct approach implies the development of a research model. Econometrics can help find the right tools to build a model to describe the current phenomenon and allow for in-depth analysis.

The research was carried out in the first quarter of 2017, at national level, the instrument behind it being a questionnaire with 15 questions. This aimed at identifying the hoteliers' perception on the impact that the three families of standards (ISO 9001, ISO 14001 and OHSAS 18001) have on the economic performance of the accommodation units, especially through the main industry-specific indicator – RevPAR. The perception of hotel managers is the result of their practice and experience, so we can trust that their responses reflect the reality fair enough. Furthermore, identifying this perception supports the outlining of an opinion on the possibility of applying the principles of circular economy in the hospitality industry. In addition, it can be analyzed whether the standards used in this study have a greater impact on the economic performance compared to other commonly used standards. The questionnaire was sent to 100 hotels in Romania (by e-mail or following direct visits) and was addressed to the management staff, the authors considering that these were the ones to provide the most accurate information. 74 responses were received, most of them online, even if a visit to certain hotel units was previously undertaken.

Regarding the structure of the respondent hotels, these were:

- in almost equal proportions leisure hotels and business hotels (31 leisure hotels and 43 business hotels)
- 10 hotels classified, according to existing national standards, at 2\*, 26 hotels classified at 3\*, 29 hotels classified at 4\* and 9 hotels classified at 5\*

- 17 small hotels (with less than 25 rooms), 31 medium size hotels (25-99 rooms), 24 over average size hotels (100-299 rooms) and 2 very large hotels (over 300 rooms)
- in higher proportion independent hotels, not affiliated to a group/hotel chain (45 independent hotels, compared to 29 hotels belonging to a hotel chain)
- out of the 29 hotels that belong to a hotel group/chain, 12 operate under a management contract and 7 under a franchise agreement, while 10 are in the ownership of the group/chain, these results confirming the global preference for operating hotels under management or franchise contracts

According to managers, almost all hotels participating in the study have already implemented integrated management systems that deal with quality, environment and occupational health and safety. Out of these, 48 started this move less than five years ago, while 26 went through these changes more than five years ago. The study reveals that, in Romania, the most widely used families of standards at the level of the surveyed hotels are ISO 9001 (67 hotels), ISO 14001 (55 hotels) and OHSAS 18001 (43 hotels).

However, the limits of the research have to be mentioned and taken into account from the start. Firstly, for reasons of confidentiality, hotels generally refuse to provide concrete financial data, so that in the questionnaire the authors had to address questions to identify the influence that using integrated management systems has on the economic performance from the perspective of hoteliers. These questions, of course, are subject to subjectivity, without having the pragmatism of some statistical data offered directly. A second limitation arises from the fact that the specialty literature claims that a company that applies all three families of standards (ISO 9001, ISO 14001 and OHSAS 18001) does not necessarily integrate them. In cases where respondents did not provide a tangible response regarding the integrated systems, research is based on the assumption that hotels that have implemented all three management systems apply, actually, an integrated quality-environment-security management system, the three systems not being considered separately.

#### 4. Research on the effects of implementing an integrated management system on the hotel industry's performance

The conducted study intended to make a research model using econometric analysis. The specification of the multifactorial econometric model is based on the economic theory starting from the reality on which the study is applied, and the general form of this model is given by the following relation:

$$y = f(x_1, x_2, \dots, x_n) + \varepsilon \quad (1)$$

where:

f – the function that expresses the dependence of the endogenous variable y on the exogenous influence variables  $x_i$

The stages in elaborating the research model are as follows:

##### Step 1: Formulation of hypotheses

**Research issue:** the influence of the implementation of integrated management systems on the financial and economic performance of hotels

**Research model:** the application of a questionnaire to hoteliers aiming to assess their perception on the effects of the implementation of quality-environment-security integrated management systems (QESIMS) on the economic, social and environmental performance

**Research hypothesis:** in the context of integrated management systems, environmental measures stemming from the ISO 14001 standard are perceived by hotel industry managers as having at least an equal importance to those regarding quality and occupational health and safety in increasing the economic and financial performance of hotel establishments

**Step 2: Identifying the variables**

*Dependent variable:* RevPAR (a performance indicator in the hotel industry, used to make investment decisions)

*Independent variables:*

ISO 9001 (quality management system)

ISO 14001 (environmental management system)

OHSAS 18001 (occupational health and safety management system)

**Sample size**

In order to determine the sample size (N), it has to be taken into account that this should be representative, in order to allow extending the results to the entire studied population. Two methods have been considered, out of which, the first is  $N = 50 + 8 \cdot NVI$ , where NVI is the number of predictors (independent variables), and the second one recommends that the ratio between the number of respondents (subjects) and the number of predictors is at least equal to 15/1.

Since the survey also covered other issues not considered in this paper, a sample of N=74 respondents has been set, providing a 24.66>15 respondents-predictors ratio.

The data obtained following the application of questionnaires were entered into a database and, then, processed using SPSSv23. The calculation of each indicator required a process of converting the value judgements into numeric expressions on a Likert-type scale. Depending on the spectrum of value judgments offered to respondents, through the construction of the questionnaire used to collect primary information, for questions under investigation, the conversion has been done on scales, as follows: - 5, meaning “has increased a lot / to a very large extent“; - 4, meaning “has increased a little / to a large extent“; - 3, meaning “has decreased a lot / to a little extent“; - 2, signifying “has dropped a little / to a very little extent“; - 1, meaning “has not changed at all / do not know“.

The descriptive statistics of the variables considered in the study is exposed in table no. 1.

**Table no. 1: Main characteristics of analyzed variables**

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
RevPAR	74	2	4	3.45	.553	.305
ISO 9001	74	2	4	3.55	.553	.305
ISO 14001	74	2	5	3.74	.703	.495
OHSAS 18001	74	2	5	3.59	.571	.327
Valid N (listwise)	74					

Note: \* *Dependent Variable: RevPAR*

For all considered variables, the standard deviation leads to variation coefficients ( $v = \frac{Std.Deviation}{Mean} \times 100$ ) smaller than 35% and, consequently, their mean value is statistically significant, and the statistically studied population is homogeneous.

**5. Results and discussions**

The simple correlations of each independent variable (predictor) with the dependent variable (RevPAR) are presented in table no. 2.

**Table no. 2: Partial correlations matrix**

		RevPAR	ISO 9001	ISO 14001	OHSAS 18001
RevPAR	Pearson Correlation	1	.750**	.581**	.711**
	Sig. (2-tailed)		.000	.000	.000
	N	74	74	74	74
ISO 9001	Pearson Correlation	.750**	1	.477**	.634**
	Sig. (2-tailed)	.000		.000	.000
	N	74	74	74	74
ISO 14001	Pearson Correlation	.581**	.477**	1	.521**
	Sig. (2-tailed)	.000	.000		.000
	N	74	74	74	74
OHSAS 18001	Pearson Correlation	.711**	.634**	.521**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	74	74	74	74

Note: \*\* Correlation is significant at the 0.01 level (2-tailed)

From table no. 2, it appears that the most significant relationship is between RevPAR and ISO 9001, establishing a direct strong link between them. The value of the correlation coefficient is 0.750, with a Sig. value smaller than 0.05. Moreover, there is a direct strong correlation between RevPAR and OHSAS 18001, and a direct, medium intensity correlation between RevPAR and ISO 14001.

The Enter/Remove method is illustrated in table no. 3, this being used for developing the model with all independent variables, which, with each step, creates a model, by eliminating the variable with the lowest significance.

**Table no. 3: Variables introduced in the model and step-by-step removed variables**

Model	Variables Entered	Variables Removed	Method
1	OHSAS 18001, ISO 14001, ISO 9001 <sup>b</sup>	.	Enter

Note: <sup>a</sup> Dependent Variable: RevPAR

<sup>b</sup> All requested variables entered

Next, the ANOVA analysis and the F (Fisher) test will be used in order to validate the model as a whole. These are used to replace the sequential testing of the significance of the regression model's parameters with the model's bulk testing, while also testing the homoscedasticity hypothesis in the least squares method.

The result of applying the ANOVA methodology (Table no. 4) shows that Model\_1, as a whole, is statistically significant, meaning that regressors' influence is significantly greater than that of residues. This conclusion is based both on the fact that the calculated value of

F-statistic=50.050 is significantly greater than the critic value  $F_{0.05;3;70}=2.70$ , and on the value of  $Sig.=0.000 < \alpha=0.05$ .

**Table no. 4: Model Summary and ANOVA**

Model Summary <sup>b</sup>										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.826 <sup>a</sup>	.682	.668	.318	.682	50.050	3	70	.000	2.279
ANOVA										
Model		Sum of Squares		df	Mean Square	F	Sig.			
1	Regression	15.198		3	5.066	50.050	.000 <sup>b</sup>			
	Residual	7.085		70	.101					
	Total	22.284		73						

Note: <sup>a</sup> Dependent Variable: RevPAR

<sup>b</sup> Predictors: (Constant), OHSAS 18001, ISO 14001, ISO 9001

R<sup>2</sup> represents the determination coefficient and is calculated based on the decomposition of the total dispersion in the dispersion of the observed values from the theoretical ones and the dispersion of the theoretical values from the average. R<sup>2</sup> shows how much of the total dispersion is explained by the variation of the chosen factors and is calculated as a ratio between the deviations of the calculated values and the total deviation.

After a brief analysis of the data in table no. 4, a relatively strong influence of predictors' values on RevPAR is shown. A first information in this respect is offered by the value of the multiple correlation coefficient (R = 0.682), showing that there is a high intensity correlation between the result variable RevPAR and the predictors. As well, the value of the determination coefficient R\_Square (R<sup>2</sup>) shows that the variation of RevPAR is determined in proportion of 68.2% by the combined variability of predictors. The smaller than 0.05 Sig. value, indicates that the model is generalizable from the sample to the population. Therefore, the null hypothesis is rejected and the alternative one is accepted, meaning that Model\_1 is valid (statistically significant) for the chosen significance level.

The situation of the regression coefficients, the standard errors, the t statistical test value, the Sig. value and the collinearity statistics are presented in table no. 5.

**Table no. 5: Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF	
1	(Constant)	.142	.272		.522	.603	-.401	.686		
	ISO 9001	.453	.089	.453	5.062	.000	.274	.631	.568	1.760
	ISO 14001	.155	.064	.198	2.443	.017	.029	.282	.693	1.444
	OHSAS 18001	.310	.089	.320	3.479	.001	.132	.487	.536	1.867

Note: <sup>a</sup> Dependent Variable: RevPAR

All three coefficients of the model (ISO 9001, ISO 14001, OHSAS 18001) have significantly different from zero values. Sig.>0.05 for all coefficients, which means that they are statistically significant. Therefore, RevPAR, respectively the indicator for measuring performance, is directly influenced by ISO 9001 to the largest extent, and, obviously, by the other two indicators, ISO 14001 and OHSAS 18001.

In the last column of Table 5, differences between the values of the tolerance and the values of VIF can be noticed, which implies certain instability of the estimation. VIF values being less than 6, the factor independence hypothesis is confirmed, therefore multicollinearity does not affect the estimates.

The multiple linear regression model reflecting the correlation between the RevPAR values and those of the three considered standards is as follows:

$$Model\_1: RevPAR = 0,142 + 0,453 \times ISO9001 + 0,155 \times ISO14001 + 0,310 \times ISO18001$$

In order to capture the existence of a correlation between the independent variables, the dependent variable being excluded from the model, collinearity has been calculated in the table no. 6.

**Table no. 6: Collinearity Diagnostics<sup>a</sup>**

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	ISO 9001	ISO 14001	OHSAS 18001
1	1	3.961	1.000	.00	.00	.00	.00
	2	.018	14.877	.20	.05	.94	.02
	3	.013	17.524	.79	.19	.05	.23
	4	.009	21.420	.01	.76	.01	.75

Note: <sup>a</sup> Dependent Variable: RevPAR

The Eigenvalue column shows the number of links existing among the independent variables.

Given the fact that the values of the condition index, for sizes 3-4, are greater than 15, but smaller than 30, this means that there are possible collinearity problems for the variables ISO 14001 and OHSAS 18001, but they are not serious. The last column of table no. 6 highlights the contribution of each variable to the variance.

Following the obtained results, given the fact that ISO 14001, the environment standard, has a smaller influence on RevPAR than other widely used management standards in hotels (ISO 9001 and OHSAS 18001), it can be concluded that, at this moment, the implementation of integrated management systems and, consequently, the circular economy do not significantly contribute to the increase of the economic performance in the Romanian hospitality industry, at least in terms of the perception of managers in this field. The possible lack of interest in the application of environment management systems comes, most likely, from the clients' direction. It is obvious that hoteliers will not focus on these issues as long as these do not produce tangible results in terms of attracting customers and, implicitly, of financial nature because there is no demand, either because tourists are not interested or do not have a culture in this regard, not being very concerned yet about the environmental performance of the accommodation units they choose, or because, although hotels have sustainability initiatives, they are not communicated well enough in order to be appreciated or further requested. The perception of hotel managers influences the priority

with which they distribute their efforts to adopt different categories of measures. Thus, they attribute a lower priority to environmental measures, which is likely to be reflected in low efforts in this direction in the coming period.

Thus, the model shows, in the opinion of the authors, that, although there is a correlation between RevPAR and integrated management systems, this is not enough for the Romanian hospitality industry to be prepared for the application of the principles of the circular economy, fact that comes mainly from the results regarding the ISO 14001 standard, which seems to be the best label for this possible direction (the closest standard to the circular economy issue). The only element with a significant influence on the increase of the economic performances of the hotel industry in Romania is the ISO 9001 quality standard, but this is not enough to consider the circular economy; this is a simple indicator of the customers' desire for quality.

### **Conclusions**

The application of the circular economy principles can provide companies in the tourism industry in general and in the hotel industry in particular with the necessary framework for business development and, at the same time, can help create a more sustainable experience for all stakeholders by reducing the negative implications on social and environmental sustainability. However, hospitality companies (hotels and other accommodation units) that are involved in sustainability initiatives act primarily on economic reasons, in order to gain competitive advantages, so that the focus is more on reducing energy and water use and waste, while environmental and socio-cultural aspects are often neglected. (Girard and Nocca, 2017)

In the context of the circular economy, the concept of "*circular tourism*" has been developed, as a business model based on the principles of sustainable development. Just as the circular economy aims at creating a virtuous circle that produces goods and services without wiping out the limited resources of the planet (raw materials, water, energy), circular tourism proposes a model where each involved party (supplier, tour operator, host or tourist) adopts a friendly environment approach (eco). The circular tourism sector refers to its ability to trigger and stimulate circular flows in order to reconcile the tourism sector and sustainable resource management. Circular tourism is not, however, just a form of green tourism that limits the consumption and waste of non-renewable energy sources, recovery, reuse, redevelopment, valorisation and regeneration being key words when it comes to this type of tourism. In order to obtain a sustainable tourism offer, the future also covers the protection of cultural and natural heritage. The emphasis on heritage can successfully contribute to reviving the local economy with new jobs, new businesses, tax revenues and local spending, all to regenerate values. Tourism can also act as a way of regenerating the knowledge produced by each destination, transferring them over time. (Girard and Nocca, 2017)

One of the main goals of a manager is to find solutions to problems related to optimization of resource planning in order to increase the economic performance of the coordinated entity. In the current global economic context, the sustainability of carried out activities can only be achieved by harmonizing the economic, social and environmental objectives. Taking into account the new performance standards that go beyond the economic sphere, we believe that ignoring social and environmental issues can cause losses for economic entities, especially in the tourism sector. In order to be able to cope with market



requirements, each tourist entity must provide a guarantee of reaching the targets of excellence, ensuring its success not only by introducing a quality management system aimed at satisfying customer requirements, but also its own needs.

The present paper is based on an empirical study regarding the influence of integrated management systems on the increase of economic performance in the hotel sector, by identifying the vision of Romanian hoteliers on the existing link between the implementation of these systems and the increase of RevPAR, study based on which the possibility of applying in this area the principles of circular economy, as a new trend in sustainability, can be identified.

The analyzed set of data proved to be correct, both from the point of view of the coefficients' correlation verification, and also from that of compliance with the chosen confidence level. ISO 9001, ISO 14001 and OHSAS 18001 are important factors for the evolution of RevPAR, but not so much as to support the eventual application of the principles of the circular economy, the impact of the environmental standard being lower than the others'. The circular economy is, for the time being, a desideratum, and it is not clear yet whether the society is prepared for it, the more when it comes to the hotel industry.

The Pearson correlation coefficients outline direct, medium to strong intensity links between the predictors and RevPAR, the most significant relationship being that with ISO 9001, while the one with the lowest intensity is with ISO 14001, considered by the authors to be an indicator of the degree of preparation for the circular economy.

It should be noted that any scientific action is limited, and, as has been stated above, in the present case, limits are found in the difficulty of collecting concrete data regarding the economic performance of the surveyed hotels and in the absence of full information regarding the integration of the three studied management systems. With all these limits, the study provides, however, pertinent information that can support strategies for improving the economic performance in the hospitality industry in Romania in the context of the principles of sustainability and circular economy.

Based on the conducted analysis, in the future, our desire is to continue the empirical research by carrying out a comparative study regarding the applicability of the model built by us within the tourist entities operating in the European Union. We believe that the similarities and differences that would result from the comparative analysis represent real sources of inspiration for the improvement and efficiency of global tourism. Also, the continuation of the research regarding the possibility of the existence or application of circular tourism principles in Romania may be an area of interest.

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