ENVIRONMENTAL PROJECT MANAGEMENT IN THE HOSPITALITY INDUSTRY IN RUSSIA USING THE CRITERIA "RISK-PROFITABILITY"

GESTIÓN DE PROYECTOS AMBIENTALES EN LA INDUSTRIA DE LA HOSPITALIDAD EN RUSIA UTILIZANDO EL CRITERIO "RIESGO-RENTANCIA"

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ABSTRACT

The article describes the approach proposed by the authors to analyze the effectiveness of projects for the introduction of eco-technologies in hotels concerning the risk-return ratio. The net present value (NPV) of the project is used as a criterion for assessing the profitability of the green technology implementation project. The magnitude of the project risk is the second criterion, which can be calculated by various methods. Applying the proposed approach, the authors analyzed the experience of implementing environmental projects by Russian hotels. An illustration of the proposed method is the 'risk-return' diagram for introducing energy-saving technologies in a 3* hotel. The approach combines the advantages of the analysis method for discounted cash flow project efficiency and project risk analysis tools by using two criteria and can be applied for a quick and visual analysis of environmental projects in the hospitality sector.

Keywords: Environmental Project Management; Sustainable Development; Hotel business; Risk-return criterion.

Revista de Investigaciones Universidad del Quindío,
34(S3), 115-124; 2022.
ISSN: 1794-631X e-ISSN: 2500-5782
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RESUMEN

El artículo describe el enfoque propuesto por los autores para analizar la eficacia de los proyectos de introducción de ecotecnologías en hoteles en relación con la relación riesgo-retorno. El valor presente neto (VAN) del proyecto se utiliza como criterio para evaluar la rentabilidad del proyecto de implementación de tecnología verde. La magnitud del riesgo del proyecto es el segundo criterio, que se puede calcular por varios métodos. Aplicando el enfoque propuesto, los autores analizaron la experiencia de implementación de proyectos ambientales por parte de hoteles rusos. Una ilustración del método propuesto es el diagrama de 'riesgo-rendimiento' para la introducción de tecnologías de ahorro de energía en un hotel de 3*. El enfoque combina las ventajas del método de análisis para la eficiencia del proyecto de flujo de caja descontado y las herramientas de análisis de riesgo del proyecto mediante el uso de dos criterios y se puede aplicar para un análisis rápido y visual de proyectos ambientales en el sector hotelero.

Palabras clave: Gestión Ambiental de Proyectos; Desarrollo Sostenible; Negocio Hotelero; Criterio Riesgo-Retorno.

INTRODUCTION

Currently, the implementation of environmental projects in hospitality is becoming increasingly important in our country as the most critical direction of sustainable development in the industry to solve modern problems of environmental protection (D'Amato & Korhonen, 2021).

As one of the economy's leading sectors, the hospitality industry does not remain aloof from the trend, which is expressed in the increasing role of sustainable development and environmentally efficient technologies. Environmental projects for introducing green technologies in hotels and other accommodation facilities are a tool for sustainable development (Buharova & Vereshchagina, 2021). The great potential of the hospitality and tourism industries, particularly environmental, is one of the advantages of the Russian Federation. The use of green technologies can contribute to the development of this sector of the economy (Srovnalíková et al., 2020).

Thus, the analysis of the Russian experience of implemented environmental projects using green technologies in the hospitality and tourism industry, the study of factors affecting the economic and environmental efficiency of hotels, and organizational and economic mechanisms for implementing projects are urgent tasks (Makarova et al., 2021). The results can be used for planning the development of the hospitality and tourism sector at various levels.

The authors studied the decision-making procedures for implementing environmentally oriented projects and identified contradictions between different levels of decision-making. Accordingly, the authors conducted a survey of international standards and approaches to environmental certification and the practice of their application in hotels, studied the conditions for the use of green technologies in the Russian tourism and hospitality industry, analyzed the factors affecting the use of green technologies in hotels, contributing to hotel efficiency improvement and leading to an increase in operational risks. These studies made it possible to formulate the research purpose – to develop an approach to analyzing the effectiveness of projects for introducing green technologies in hotels, concerning the project profitability - the amount of project risk ratio.

LITERATURE REVIEW

The world has been aware of the importance and significance of the environmental component of the economy for the quality of life of the population for several decades (Skobkin et al., 2017; Porfiriev, 2019). The problems of integrating the green economy, circular economy, and bioeconomy in a strategic sustainability framework are considered by D'Amato & Korhonen (2021). Research on the development of the green economy is reflected in the works of some well-known Russian scientists. Approaches to the development of environmental project management, international hotel chains are studied by Gurnovich et al. (2019), Potravny et al. (2012), Ilina et al. (2019), Nikolskaya et al. (2018), Nikolskaya et al. (2020) Konovalova et al. (2018), Lepeshkin et al. (2017), Dzhandzhugazova et al. (2018), Mira et al. (2018), Vega (2013), Buharova & Vereshchagina (2021), Afanasieva et al. (2021), Makarova et al. (2021) and others. Scientific works on the implementation of project management in the field of environmental protection are of particular interest. Under the approach expressed by D. V. Nikitina (2019), environmental excellence for the state's sustainable development should become part of the strategic thinking of its participants. Businesses and society can find approaches that will move towards all three goals: environmental protection, social well-being, and economic development at the same time. The features of environmental projects include their uniqueness (novelty) and innovation; that is, an environmental project can be considered a process that leads to the green innovation creation (Potravny et al., 2019). The research of B. N. Porfiriev (2019) notes that the green economy includes those types and results of economic activity that, along with modernization and increasing production efficiency, contribute to improving the quality of life and the living environment. The impact of the sharing economy on the hotel industry was analyzed in the research of Srovnalíková et al. (2020). Also, the impact of digital technologies on the transformation of the tourism and hospitality industry was analyzed in the research of Buhalis (2020), Nikolskaya et al. (2021), and Chudnovskiy et al. (2021).

Environmental technologies, as a rule, can significantly reduce resource consumption and expand the use of by-products. Today, the most effective methods of reducing energy consumption and solving other environmental problems are using technologies to improve the thermal insulation of buildings and modern automation tools for managing power systems (Dmitriev et al., 2019).

Many well-known scientists agree that the effective development of this direction in Russia requires a combination of political will, international efforts, and a change in the economic paradigm, which consists of the transition from the economic system of civilization to the ecological and economic system of state policy. In the current conditions, the contradictions between the high rate of urbanization and the environmental safety of the country appear, and there is a need to review the current legislation in this area and improve the state control system.

RESULTS

The research conducted by the authors showed that the implementation of environmental projects in the field of hospitality in the Russian Federation contains a contradiction (conflict) related to the fact that decision-making takes place at different levels of management. The contradiction associated with different levels of decision-making regarding the implementation of environmental projects in hospitality and tourism is shown in Fig. 1. at the micro-level, enterprises that conduct business in a market economy proceed from the need to increase profits and reduce costs. On the other hand, at the enterprise level (micro-level), environmental considerations are usually not the priority for decision-makers.

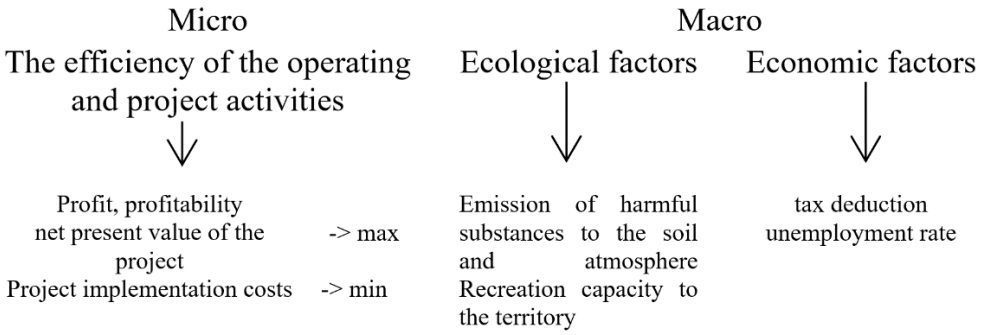

Figure 1. Levels of decision-making regarding the implementation of environmental projects

Accordingly, for the broader introduction of green technologies in the field of hospitality and tourism, based on economic criteria, in our opinion, it is necessary to create conditions that contribute to reducing the cost of implementing relevant projects. These conditions are not limited to reducing tax deductions regulated by Federal law. Costs that are not directly regulated by law are related to connecting to technical infrastructure or using transport infrastructure. Accordingly, Fig. 2 shows the factors that can contribute to the formation of an environment-oriented economic activity.

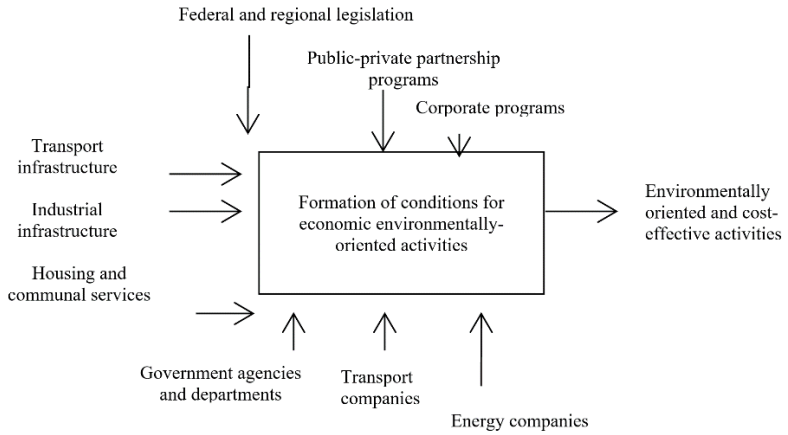

Figure 2. Factors providing the formation of environment-oriented economic activity conditions

The authors have studied the experience of Russian hotels using green technologies. Examples of Russian hotels focused on using green technologies and certified for compliance with The Green Key Program requirements are listed in Table 1.

In the framework of the study, the authors classified accommodation facilities. The factors that were analyzed include hotel characteristics (type and scale of the building), hotel network/non-chain hotel, participation of the hotel/hotel chain in international environmental programs, characteristics of the tourist destination (megalopolis, national park, etc.), and climatic conditions (number of sunny days per year, average annual air temperature). The study of the experience of Russian hotels allows us to conclude about the directions (market segments) of using green technologies: large hotels in megalopolises that are interested in reducing economic costs. This direction is developing in large

cities and regions most visited by tourists (see Table 1).

Table 1. Russian hotels using green technologies

HOTEL	LOCATION	NUMBER OF ROOMS
MERIDIAN HOTEL	Samara	23
RAKURS HOTEL	Ulyanovsk	36
HOTEL NOGAI	Kazan	167
PARK INN BY RADISSON NIZHNY TAGIL	Nizhny Tagil	127
PARK INN BY RADISSON	Ekaterinburg	160
CRONWELL INN TURSUNT	The Khanty-Mansi Autonomous Area	32
PARK INN BY RADISSON	Novosibirsk	150
PARK INN BY RADISSON	Novokuznetsk	174
RADISSON BLU SHEREMETYEVO	Moscow	391
RADISSON RESORT ZAVIDOVO	Moscow	239
SOLO SOKOS HOTEL VASILIEVSKY	St. Petersburg	255
PARK INN BY RADISSON PULKOVSKAYA	St. Petersburg	842
PARK INN BY RADISSON PULKOVO AIRPORT ST. PETERSBURG	St. Petersburg	200
ORIGINAL SOKOS HOTEL OLYMPIA GARDEN	St. Petersburg	348
PARK INN BY RADISSON PRIBALTIYSKAYA	St. Petersburg	1184
SOLO SOKOS HOTEL PALACE BRIDGE	St. Petersburg	324
RADISSON SONYA	St. Petersburg	173
RADISSON ROYAL HOTEL	St. Petersburg	164
CRONWELL INN STREMYANNAYA HOTEL	St. Petersburg	49
PARK INN BY RADISSON NEVSKY	St. Petersburg	269
PARK INN BY RADISSON POLIARNIEZORI	Murmansk	262
RODINA GRAND HOTEL & SPA	Sochi	60
RADISSON BLU RESORT & CONGRESS CENTRE	Sochi	508
RADISSON COLLECTION PARADISE RESORT & SPA SOCHI	Sochi	516
RADISSON ROSA KHUTOR	Sochi	181

*Source: Ilina et al., (2019)

Another direction for developing green hotels, which has not become widespread yet, involves small hotels in the areas with environmental restrictions and a relatively small flow of tourists (for example, national and natural parks, medical and recreational areas, and health resorts).

The factors listed above affect the value of the first criteria, which is used as the net present value (NPV) of the project. On the other hand, indicators based on discounted cash flows associated with the project, such as NPV or discounted payback period (DPBP), allow for consideration of the effect of using green technologies in monetary terms. At the same time, environmentally-oriented projects are characterized by a reasonably high level of uncertainty; therefore, taking into account the risk of the project in the discount rate is not entirely correct. In this regard, to evaluate environmental projects, the authors propose using the second criterion and indicators based on discounted cash flows associated with the project.

It is proposed to use the amount of risk of the project as a second criterion. Available statistical data or expert assessments can be used to calculate the risk of a project.

The first step for project risk analysis is a qualitative risk analysis; in this case, the project strengths and weaknesses, opportunities, and threats are analyzed (SWOT analysis). For example, table 2 shows a fragment of the qualitative risk analysis results for a 3* hotel exemplified by a project to implement an information system of the 'smart home' type.

Table 2 An example of a SWOT analysis of the eco-project for a 3* hotel

	Strengths	Weaknesses
INTERNAL OPPORTUNITIES	Reduction of energy consumption, reduction of utility bills	Inconveniences for hotel guests and staff in case of failures in the information system operation
EXTERNAL OPPORTUNITIES	Formation of a positive reputation of the hotel in the industry	
THREATS		Threats to information security

*Source: compiled by the authors

The smart home information system and other software and hardware usually include a mobile application and a cloud service for data collection and analysis. That leads to the emergence of security threats to the information system and the need to analyze the corresponding risks. A fragment of the project risk list, for example, is shown in Fig. 3.

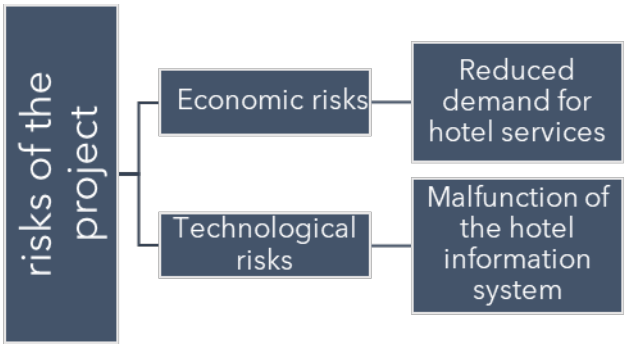

Figure 3. Types of risks of the project for introducing green technologies in the hotel

The decline in demand for hotel services may be related somewhat to the general deterioration of the economic situation due to the consequences of the COVID-19 pandemic. However, the sources of the risk of the hotel information system malfunction in compliance with the rules of operation to a greater extent may be external causes. An estimate of the magnitude of project risks is given in Table 3.

Table 3. Assessment of the magnitude of the risks of the project for introducing green technologies in the hotel

RISK	PROBABILITY	DEGREE OF INFLUENCE	THE AMOUNT OF DAMAGE
REDUCED DEMAND FOR HOTEL SERVICES DUE TO THE EFFECTS OF THE PANDEMIC	Very low	Strong	Large
REDUCED DEMAND FOR HOTEL SERVICES	Very low	Strong	Large
TERMINATION OF THE PROJECT DUE TO LACK OF FINANCIAL RESOURCES	Low	Average	Large
MALFUNCTIONS IN THE HOTEL INFORMATION SYSTEM	Average	Average	Average

The risk of reducing demand for hotel services due to the pandemic consequences is not related to the project. However, it should be taken into account, as it may lead to the termination of the hotel. Having assessed the risk of the project, the authors constructed a diagram for two criteria (Fig. 4).

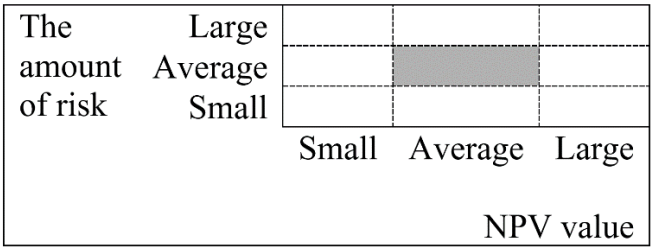

Figure 4. Example of a diagram for evaluating a project for the introduction of green technologies in a hotel

DISCUSSION

One of the ways to achieve the Sustainable Development Goals is the practical implementation of the 'smart home' concept. This concept includes providing economy, comfort, and security for people permanently residing in the hotel or temporary visitors. One of the ways to achieve the desired level of comfort is to expand the use of environmentally-friendly (green) technologies.

The development of green technologies in hotels follows the path of improving architectural and design solutions of hotels, the quality of the internal environment, methods for assessing the energy characteristics of buildings, the efficiency of engineering equipment of buildings, and reducing construction costs. This path leads to the need to expand the use of modern digital technologies in the design of buildings and structures, the use of environmentally friendly building materials, and introduce digital technologies in the operational processes of hotels. Successful implementation of such approaches means that hotel buildings become buildings with zero energy consumption (zero-energy buildings, ZEB) or almost zero energy consumption (near zero-energy buildings, nZEB).

In Russia, achieving zero energy consumption is complicated by climatic factors, so we can discuss achieving such goals as reducing energy consumption and improving energy efficiency. The introduction of energy management systems such as the 'smart home' is one of the most common ways to increase energy efficiency.

In the authors' opinion, when analyzing projects for introducing green technologies in Russian hotels, more attention should be paid to project risks, which the authors did within the framework of the proposed approach.

An essential step toward introducing green technologies is the use of ISO 14000 environmental management standards in the activities of hospitality enterprises. However, the wider use of green technologies in the Russian hospitality sector is restrained, in particular, by such factors as insufficient investment attractiveness (Dedusenko, 2017), the complexity of administrative procedures, and the insufficient activity of industry organizations.

CONCLUSION

Implementing the general principles of sustainable economic development requires the creation of a legal framework and institutional conditions aimed at economic stimulation of the green economy development, including waste processing, energy-saving technologies, and green construction. Therefore, an important aspect of developing this direction is the formation of a sufficient regulatory

framework that should be harmonized with international requirements for the quality of waste processing and consider the need to create certification institutions and control systems. Legislation must include technical regulations containing common and understandable terminology, clear requirements for waste sorting, processing, and recycling, and a description of the processes for checking the quality of these types of work to comply with the established requirements. The improvement of the state management system in this area is necessary to resolve the contradiction between ensuring economic efficiency and the environmental safety of production. The main priority of state policy in this area should be thoughtful and effective support for economic entities that act as producers and promote modern green technologies to the market.

The mechanisms for market regulation, preferential lending, and taxation should be developed as comprehensive measures on the part of the state. Priority areas of state policy in this area should include expanding infrastructure for sustainable development of territories, training highly qualified specialists, introducing research results, and advanced technologies in production and technological processes.

The results of studying the practice of implementing environmentally-oriented projects in the hospitality sector in the Russian Federation enable to draw the following conclusions:

1. Environmentally-oriented projects for introducing green technologies are one of the ways to implement the principles of sustainable development.
2. Additional risks characterize Russian environmentally-oriented hospitality projects; therefore, it is not enough to use only investment performance indicators, such as NPV, to evaluate them.
3. The approach proposed by the authors to the assessment of environmentally-oriented projects in hospitality concerning the risk-return ratio makes it possible to evaluate the project and present the evaluation results in a visual form more fully.

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