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Digital Technologies and Innovative Models of Risk Management in International Tourism

Tecnologías digitales y modelos innovadores de gestión de riesgos en el turismo internacional

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ABSTRACT

Introduction: this study examines the readiness for developing and implementing innovative risk management models in international tourism. The research is part of the project «International tourism in the system of economic relations: research of security and sustainability. The purpose of the study is to examine the willingness of managers in the tourism system to make decisions regarding risk prevention and prompt elimination of the consequences of risk occurrence.

Method: a review of recent research and regulatory documents in risk management was conducted, followed by a sociological survey targeting managers from Ukraine, Estonia, and Kazakhstan. Data was collected from 255 managers in 68 companies, using anonymous questionnaires to assess their familiarity and engagement with risk management techniques in international tourism.

Results: the study revealed varying levels of risk management expertise among managers: 14 % had a low level, 43 % had an average level, 19 % had sufficient knowledge, and 10 % were proficient in managing risks and generating innovative ideas for risk identification, analysis, and management within the tourism sector.

Conclusions: risk management remains an undervalued yet essential aspect in international tourism, where its neglect can jeopardize valuable business ventures. This study highlights the need for enhanced risk management strategies and serves as a potential framework for broader research applications beyond the tourism industry.

Keywords: Digital Tools; Tourism Business; International Tourism; Risk Management; Sociological Research.

RESUMEN

Introducción: este estudio examina el grado de preparación para desarrollar y aplicar modelos innovadores de gestión de riesgos en el turismo internacional. La investigación forma parte del proyecto «El turismo internacional en el sistema de relaciones económicas: investigación de la seguridad y la sostenibilidad».

Método: se llevó a cabo una revisión de la investigación reciente y de los documentos normativos en materia de gestión de riesgos, seguida de una encuesta sociológica dirigida a directivos de Ucrania, Estonia y

Kazajistán. Se recogieron datos de 255 directivos de 68 empresas, mediante cuestionarios anónimos para evaluar su familiaridad y compromiso con las técnicas de gestión de riesgos en el turismo internacional.

Resultados: el estudio reveló distintos niveles de conocimientos sobre gestión de riesgos entre los directivos: el 14 % tenía un nivel bajo, el 43 % tenía un nivel medio, el 19 % tenía conocimientos suficientes y el 10 % era competente en la gestión de riesgos y la generación de ideas innovadoras para la identificación, el análisis y la gestión de riesgos dentro del sector turístico.

Conclusiones: la gestión de riesgos sigue siendo un aspecto infravalorado pero esencial en el turismo internacional, donde su descuido puede poner en peligro valiosas iniciativas empresariales. Este estudio pone de relieve la necesidad de mejorar las estrategias de gestión de riesgos y sirve de marco potencial para aplicaciones de investigación más amplias, más allá del sector turístico.

Palabras clave: Herramientas Digitales; Negocio Turístico; Turismo Internacional; Gestión de Riesgos; Investigación Sociológica.

INTRODUCTION

In the modern economy, international tourism plays a very significant role since, in the context of globalization of the entire economy, the development of international tourism is a catalyst for the creation and constant improvement of high-quality infrastructure for the preservation of cultural and historical heritage, preservation of environmental objects, maintenance of ethnographic identification, and much more of tourist interest.⁽¹⁾

Like any other sector of the economy, international tourism actively uses modern digital technologies. However, in this study, we will consider the possibilities of using digital technologies not as traditional tools for marketing goods and services but in the field of risk management in international tourism.^(2,3)

Risk management always requires and receives innovative solutions since the formation of risks is often of a non-standard, combined nature, and their management using standardized tools does not give the expected effect.⁽⁴⁾ This article will focus on risk management in international tourism, particularly risk prevention.⁽⁵⁾ All employees of travel companies participate in risk management since, due to this business, one specialist or group of specialists cannot track all risks, which requires the massive participation of all employees of travel companies in this process.⁽⁶⁾

Considering the possibilities of using digital technologies to assess risks and search for innovative models for managing identified and described risks, it should be noted that thanks to modern means of communication, such studies have received communication capabilities, the use of which is demonstrated in this article using the example of conducting a sociological study among employees of companies in the field of international tourism in Ukraine, Estonia, and Kazakhstan. The study's results will improve the skills of employees of all companies participating in the project «International Tourism in the System of Economic Relations: Research of Security and Sustainability» in risk assessment in international tourism.

When considering recent studies and some regulatory documents of international importance, there is a tendency to form a transparent system of requirements for risk management.⁽⁷⁾ Researchers consider various types of risks in international tourism. Many authors are interested in ways to prevent risks of economic content, that is, such risks that are associated with changes in exchange rates of countries in which tourist trips take place, the formation of prices in the domestic markets of countries under the influence of competition or manifestations of monopoly in various forms, and risks caused by competition within the industry.^(8,9)

Other researchers focus on the system of political risks, noting that sometimes political risks are difficult to predict and to manage this type of risk, it is necessary to make prompt decisions and be prepared for their drastic nature, depending on the level of danger of political risk for tourists.⁽¹⁰⁾ The authors consider risks of a social nature to be interconnected with political risks; however, to manage social risks, longer measures to manage this type of risk are recommended than political ones.⁽¹¹⁾ This is because social risks are largely protracted.⁽¹²⁾ To manage social risks, the authors consider it essential to thoroughly and comprehensively study the nature of risks and ways to manage them.

Researchers also pay great attention to environmental risks and classify these risks as natural and artificial. By managing natural environmental risks in international tourism, the authors understand the construction of a system of restrictions for tourists related to the safety of their stay in certain territories, permanently or temporarily, during certain types of natural phenomena, such as tornadoes, heavy snowfalls, abnormally high or abnormally low temperatures.⁽¹³⁾ Environmental risks of an anthropogenic nature are more extensive, which requires workers in the tourism industry to have a dual perception of risks. On the one hand, these are risks that can affect the life and health of consumers of tourism services.⁽¹⁴⁾ On the other hand, the cause of such risks may be the tourists themselves, which, according to the authors, requires workers in the tourism industry to follow instructions and strictly monitor their compliance with tourists.⁽¹⁵⁾

Examples of such risks could be forest fires caused by tourists, avalanches in the mountains due to improper behaviour of tourists, and much more. The problem of risk management goes far beyond any narrow field of study, which is reflected in international standards. According to The International Organization for Standardization, risk management can be effectively carried out using ISO 31000:2018, using the apparatus described in ISO 31010:2019. Let us look closer at ISO 31000:2018, the basis for creating a risk management system.⁽¹⁶⁾ The standard consists of six main sections.

The first section describes the scope of this standard. The second and third sections are devoted to normative references, terms, and definitions used in the standard text and the understanding of which is necessary to organize work according to this standard. The fourth section describes the principles of the standard, which include eight core principles: integrated, structured and comprehensive, customizable, employee engagement, agility, having the best available information, people and culture factors, and continuous improvement.^(8,17,18)

The fifth section of the standard describes the structure of the risk management system through a description of the general provisions of the section, a description of the leadership role and obligations assigned to leaders in terms of risk management, describes the conditions for the development, implementation, evaluation, and improvement of the structure of the risk management system.⁽¹⁹⁾ When developing a risk management system, it is necessary to understand the organization and its context, the degree of commitment of each employee to risk management, the rational use of human resources in assigning roles, authority, responsibility for results achieved, the procedure for allocating resources, and determining the procedure for communication and consultation. Also, special attention should be paid to improving the structure of the risk management system through its adaptation and continuous improvement.^(20,21,22)

In the sixth, according to the authors, the standard section describes the risks of process management.⁽²³⁾ The section describes the general provisions of the process, methods of communication and consultation, the scope of the process, its context and criteria, risk assessment, risk management, monitoring and analysis of the risk management process, and recording results and reporting the process.⁽²⁴⁾ The scope, context, and criteria of the risk management process mean the definition of the scope, the external and internal context of the action, and the definition of risk criteria.^(25,26) Risk assessment consists of identification, analysis, and direct risk assessment. To treat the identified risk, options for its treatment are selected, and risk treatment plans are prepared and implemented.

Thus, the ISO 31000:2018 standard fully describes the risk management process. To support this standard, the ISO 31010 standard was approved as a methodological base in 2019. This standard is auxiliary to this standard and contains a full set of analytical tools necessary for risk management.⁽¹⁶⁾

METHOD

Since all employees of tourism enterprises are involved in the risk management process, a sociological study was chosen as the methodology for this study⁽²⁷⁾. The study was conducted within the framework of the project «International Tourism in the System of Economic Relations: Research of Security and Sustainability» among employees of companies providing services in the field of international tourism in three countries: Ukraine, Estonia, and Kazakhstan. The sociological study involved senior and middle management employees of travel agencies, hotels, restaurants, and tourist locations in various directions⁽²⁸⁾. The study was conducted anonymously using digital tools, which suggests confidence in the results obtained.

The respondents were selected randomly based on the existing list of employees involved in risk detection and management of their impact. The study aims not only to determine the level of preparedness of specialists for risk management, but also a motivating component, the purpose of which is to motivate employees to consider their actions in situations in which risks may arise, or in the process of eliminating risks, the answers for analysis were selected from a third of the respondents. The choice of answers for analysis was made randomly.

A precondition for conducting a sociological study was that respondents had at least three years of work experience in the company. Table 1 presents the central part of the questionnaire, which was sent in Google form format to employees of tourism infrastructure facilities and travel companies.

Question	Always	Often	Sometimes	Rarely	Never
Do you take time zone differences into account in your work?					
How often do you personally communicate with clients who express their dissatisfaction with the quality of services?					
How often do you come up with ideas to improve the quality of tourism services provided?					
If you observe a situation that could lead to risk, do you discuss it with your colleagues?					

How often do you participate in teams working to identify the causes of possible risks?
 Have you personally made decisions on your own that contributed to the obsolescence of possible risks?
 Have you worked on risk management teams in the last three years?
 In the process of eliminating risks, did you personally propose options for eliminating them?
 In the last three years, have you been involved in monitoring the impact of risk management?
 Do you keep personal notes on which risk was eliminated by which method?

When receiving answers, for each answer “Always”, there were 4 points; for the answer “Often”, 3 points; for the answer “Sometimes”, 2 points; for the answer “Rarely”, 1 point; and for the answer “Never”, there were any points. Thus, for each employee, it is possible to determine the degree of his involvement in the risk management process and his readiness to perceive innovative methods of risk management in the tourism business, which is especially valuable in the field of international tourism since this type of tourism has a much higher level of risk than domestic tourism.⁽²⁹⁾

RESULTS

The study involved employees of tourism infrastructure facilities and travel companies involved in international tourism from Ukraine (26 companies), Estonia (11 companies) and Kazakhstan (31 companies). On average, 3 or 4 employees from each company participated in the study. The distribution of participants in the study is shown in figure 1.

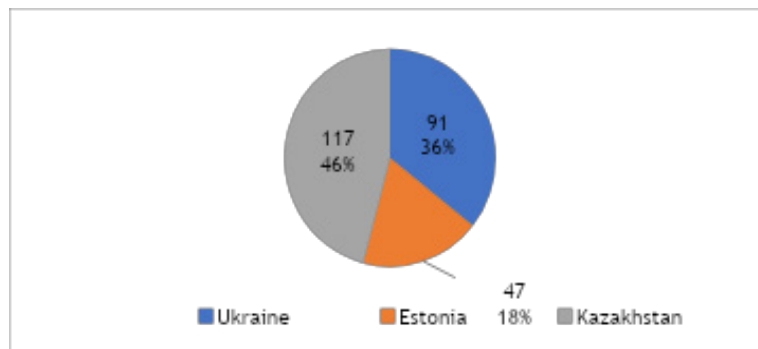


Figure 1. Distribution of respondents by country

As the data in figure 1 shows, the most significant number of respondents are from Kazakhstan, where they showed interest in this study in 31 tourism sites. It should be noted that, according to the conditions of this sociological study, seminars were previously held within the framework of the project «International Tourism in the System of Economic Relations: research of Security and Sustainability», during which various tourism problems were discussed, including management methods risks in the field of international tourism. The seminars were available online, with an average attendance of 135 users per seminar. The study was conducted not as an independent event but as part of more extensive management training. Let us consider the results of sociological research. Table 2 presents criteria for assessing the preparedness of management representatives in international tourism for innovative approaches to risk management.

Points	Description
0-10	Unfortunately, the manager is not ready to contribute innovative solutions to problems related to risk management or effectively identify and eliminate them at the current moment. It is necessary to improve the training of this specialist, not only in risk management but also in working with clients and other areas of his professional activity.
11-20	The degree of readiness of the manager to traditionally solve problems associated with risks in international tourism is sufficient; however, when conditions are created that require innovative approaches from the manager, these specialists are not ready to participate in relevant events, not ready for innovative ideas.

21-30	Managers from this group are ready to actively participate in innovative solutions to problems related to finding the causes and eliminating risks in international tourism. However, it is necessary to create situations in which they can be motivated to produce innovative ideas in risk management more often.
31-40	Specialists from this group independently propose and promote innovative ideas and are ready to motivate their colleagues to find new methods for detecting, accounting for, and eliminating risks. This group's activities are precious for business in international tourism.

Let us consider the study results for each country separately in more detail than the overall results. Figure 2 shows the results for Ukraine. According to the results obtained, a distinctive feature is the significantly low number of employees who received ratings from 0 to 10 points (29 % of the total result). In other positions, the indicators for the country are higher than for the entire study. The most significant positive gap was observed in the group that received 21 to 30 points (84 %). The results indicate the presence of advanced human resources that, with proper management, can move to the independent production of innovative ideas in terms of risk management, organizing the implementation of these methods, and planning and implementing control over their implementation.

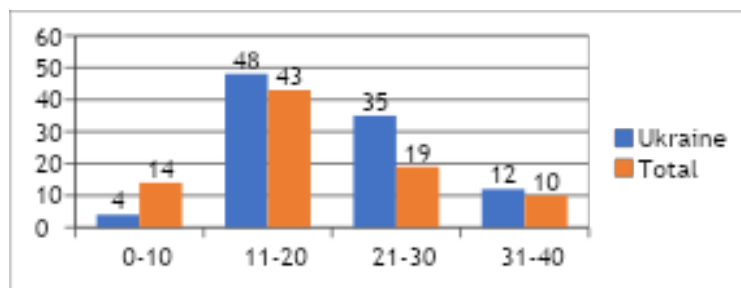


Figure 2. Results for Ukraine

Figure 3 shows the results for Estonia. Just like in Ukraine, it is characterized by a low number of those who received from 0 to 10 points, which is 43 % of the percentage in the study. The remaining categories of specialists are characterized by a positive gap with the research indicators, with the most significant gap observed in the group that received from 11 to 20 points at 16 %. According to the results, Estonia should more actively train managers on how to work with risks and manage them and create conditions for more active expression of their thoughts in the field of risk management, which is a catalyst for the production of innovative solutions.

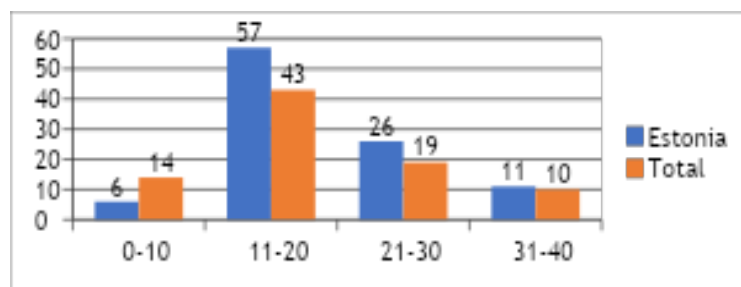


Figure 3. Results for Estonia

For Kazakhstan, the results of the study are shown in figure 4. There are slight excesses compared to the study results in almost all categories. However, the most alarming is the excess of the number of managers who received from 0 to 10 points compared to the study's overall results (at 14 %). Taking into account the fact that the most significant excess of results in the country compared to the overall results falls on the group from 11 to 20 points (by 16 %), then in Kazakhstan, it is necessary to pay maximum attention to the training of specialists in the field of international tourism management. Risk management, innovative management methods, and ways to find them must necessarily be included in training programs as their integral part.

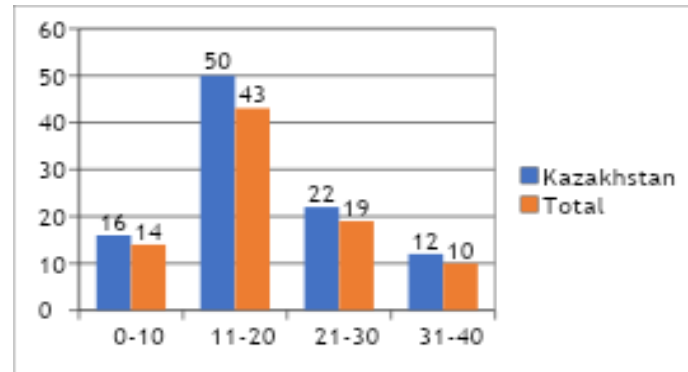


Figure 4. Results for Kazakhstan

The research carried out thanks to the project «International tourism in the system of economic relations: research of security and sustainability» allowed many employees of companies providing services in the field of tourism business to rethink the problems of risk management in international tourism. The formation of a risk management structure in many firms that took part in the study was either frozen or such a system did not exist. The study became the motive for understanding each employee's responsibility for the final result, which is especially important for the life and health of people who use tourism services.

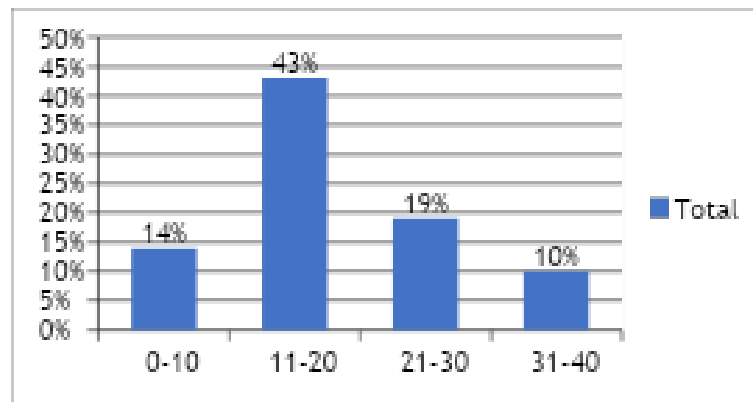


Figure 5. Results of research

If consider the results of the study as a whole, then, as can be seen from figure 5, at the moment, the majority of managers working in the field of management in a tourism business providing international tourism services are people who partially understand risks and how to manage them (43 %). The general trend in working with managers in risk management should be to consolidate systematic professional development, with mandatory participation in the work of teams to identify, describe, and manage risks in which more experienced managers are present. Also especially noteworthy is the need to create conditions for the production of innovative ideas, which is especially important when training managers in risk management.

DISCUSSION

Doing business in international tourism is associated with certain risks that must be promptly identified, analyzed, and, if possible, eliminated, or an algorithm must be developed to minimize the negative consequences of the risk. In modern industry digitalization, various ways of using digital technologies to register the information necessary for analytical activities are possible. A timely and thorough analysis of incoming information contributes in some way to risk management; however, to a greater extent, risk management depends on how competently local managers approach risk management issues. In many ways, the success of any business depends on the degree of controllability of the risks that arise during its operation.

The results of the study show that in the countries participating in the project “International tourism in the system of economic relations: research on security and sustainability”, a disproportion has been found in the skills of tourism specialists in preventing risk situations and eliminating negative consequences caused by the manifestation of risk situations. Since in this area, there is a high responsibility for the life and health of people, consequently, not all tourism workers have the necessary level of skills to implement measures to prevent harm to the life and health of tourists. The worst situation in the tourism risk management field is in Kazakhstan, where 66 % of tourism management specialists have low or average skills in preventing and

eliminating negative consequences caused by risks. This means that when developing training programs or improving the qualifications of these specialists, it is necessary to pay increased attention to risk management issues. Master classes conducted by highly trained specialists, problem situations, and training exercises to identify and eliminate risks can be used as effective training methods.

For Estonia, a high percentage of specialists with low and average skills in assessing the possibility of risk situations in tourism and insufficient skills in eliminating the consequences of situations that have arisen under risk conditions were also obtained. However, in this country, the number of specialists with high-risk management skills is also above the average for the entire range of observations.

The presence of such specialists (11 % of the number of responses taken into account) makes it possible to study and disseminate their experience on time and create specialized support groups for training the behavior of specialists in pre-risk and risk situations. For Estonia, the indicators are below the average (57 %) and above the average (26 %), which may also mean a lack of confidence in the correctness of their actions on the part of respondents. To prevent uncertainty in its actions, Estonia needs to participate more often in programs like the “International Tourism in the System of Economic Relations: Research on Security and Sustainability” program, which will allow specialists responsible for tourist accommodation to feel more confident not only in the process of answering questionnaires, but also in the process of identifying, recognizing risks, and eliminating the consequences of risks that were caused by force majeure circumstances or were not identified and prevented on time.

Let’s consider the results of the study for Ukraine. It should be noted that more than half (52 %) of the respondents showed low and average results in self-assessment of the skills of identifying, recognizing, and preventing risks. A low level of proficiency in these skills was shown by 4 % of respondents, which is the lowest indicator among the countries that participated in the project. This result means that when forming the personnel of specialists who are responsible for accommodating tourists, a preliminary analysis of their skills in working in situations that may be threatening to the life and health of tourists is carried out. The presence among respondents in Ukraine of a large number (48 %) of specialists who assess these skills as average indicates the need to form a constantly active system for improving the qualifications of specialists in the tourism industry to improve their skills in identifying, recognizing risks, correctly interpreting risk factors, the ability to recognize the area of possible risk and provide relevant information to other specialists.

When considering the general trends in all three countries that participated in the project “International Tourism in the System of Economic Relations: Research on Security and Sustainability”, the specialists from which were covered by this study, it is disappointing that 61 % of respondents give themselves low and medium assessments in terms of working with risks in tourism. This fact is the basis for a series of events aimed at improving the skills of tourism specialists in working with risks.

Since risk situations can not only harm the physical health of consumers of tourism services but also cause psychological harm, the timely identification and prevention of risks is an important factor in the system of providing services in the tourism industry. A clearer mechanism for training personnel is needed to systematize the readiness of personnel to work with risks. Since this work was started within the framework of the project “International Tourism in the System of Economic Relations: Research on Security and Sustainability”, similar national programs would be a reasonable continuation. The results of both the work of the program “International tourism in the system of economic relations: research on security and sustainability” and this study can be used to develop and implement national programs for training and retraining tourism specialists in identifying, recognizing, classifying, and cataloging risk situations.

The system of national catalogs of risk situations in tourism is important not only for each country individually but also for the tourism industry as a whole. The presence of such catalogs, which can be accessed in real-time by all interested specialists, will not only prevent negative consequences of risk situations for the life and health of tourists but also adhere to the standards of providing tourist services in different countries. Typology of ready-made algorithms for recognizing and preventing risks will also reduce possible insurance payments to clients and increase the safety rating of staying in a particular country. This study has limitations related to the professional affiliation of the respondents since the study is special and specific. Special limits of the study are manifested in the type of activity of the respondents, and specific limits are determined by the degree of development of risk management skills.

CONCLUSION

As part of the project “International tourism in the system of economic relations: research of security and sustainability”, extensive work was carried out to develop the skills necessary for workers in the field of international tourism, including in risk management. Thanks to modern digitalization tools, interested managers from three countries could participate in seminars and sociological research. The main result of the work carried out can be considered the motivation of employees to produce innovative methods for eliminating risks. Currently, only 10 % of managers in international tourism can independently produce innovative risk

management ideas and find the conditions for their implementation. However, as the study showed, 19 % of managers with appropriate training will be able to produce innovative ideas in the future.

Risks that arise in international tourism can affect not only the state of the business but also its clients. This imposes additional obligations on managers in international tourism in the field of risk management and requires a constant search for innovative ways to manage risks. Digital tools are a reliable source of information for risk management, but good risk management requires a smart symbiosis of human factors and digital components.

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