Scientific Bulletin
of Mukachevo State University

Series
Economics

Volume 11, No. 2, 116-125
Journal homepage: https://economics-msu.com.ua/en

UDC 338.48:640.43
DOI: 10.52566/msu-econ2.2024.116

Innovative risk management in the hotel and restaurant business: Scientific and practical aspect

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Received: 13.02.2024, Revised: 24.05.2024, Accepted: 28.06.2024

Suggested Citation: Shtal, T., Davydova, O., Sysoieva, S., Logvinkov, S., & Zhukov, V. (2024). Innovative risk management in the hotel and restaurant business: Scientific and practical aspect. *Scientific Bulletin of Mukachevo State University. Series "Economics"*, 11(2), 116-125. doi: 10.52566/msu-econ2.2024.116.

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Abstract. Effective risk management is essential for success in the dynamic development of the hotel and restaurant business. Amid increasing competition and market instability, there is a need to develop innovative risk management strategies. The purpose of the study is to develop and test methods for assessing and minimising risks aimed at strengthening and sustainable development of enterprises in the hotel and restaurant business. Using abstract-logical analysis and a systematic approach, the study classifies enterprises depending on the level of risk. The results of this study demonstrate a comprehensive understanding of innovative management methods in the hotel and restaurant industry. The findings indicate that enterprises from the initial cluster are less vulnerable to risks, confirming the effectiveness of cluster analysis in assessing risks in the hotel and restaurant sector. In conditions of economic and political instability, systematic analysis and risk management became important. Internal risk management strategies, including innovative methods, were successfully used to reduce potential threats to the hotel and restaurant business, considering the specifics of this industry. The development and support of a dynamic information system became a key element, facilitating effective risk management and enhancing the competitiveness of enterprises. The mentioned enterprises, remaining within the lowest level of risk, confirmed the importance of using cluster analysis for identifying and managing risks in the hotel and restaurant sector. This study introduces innovative approaches to risk management in the hotel and restaurant sphere, providing specific strategies that can be used by companies to increase resilience and adapt to market competition challenges

Keywords: strategic adaptation; group organisation association; economic-mathematical modelling; internal risk minimisation system; forecasting analysis

Introduction

Hotel and restaurant enterprises, as open systems, are subject to various influences that can significantly impact their operations, stability, and overall competitiveness. These influences encompass a wide range of factors, including economic fluctuations, technological advancements, changes in consumer preferences, regulatory requirements, and unforeseen events such as natural disasters or pandemics. Each of these factors introduces specific risks that, if not properly managed, can lead to substantial financial losses, operational disruptions, and a decline in customer satisfaction and reputation. Insufficient management of these risks can result in various negative outcomes. Financial losses may arise from decreased revenue, increased operational costs, or liability claims. Operational disruptions can affect service quality and customer experience, leading to a loss of market share. A decline in reputation can further exacerbate these issues by reducing customer loyalty and attracting negative publicity.

Given the dynamic and interconnected nature of the hospitality industry, traditional risk management approaches may no longer suffice (Dashchuk, 2023). The adoption of innovative risk management methods becomes critically important. These methods can include the implementation of advanced technologies for real-time risk monitoring and assessment, the development of flexible and adaptive management strategies, and the integration of comprehensive training programs for staff to handle emerging risks effectively. Innovative risk management methods not only help in identifying and mitigating potential threats but also in seizing opportunities that arise from change (Gavrysh *et al.*, 2024). For instance, leveraging data analytics and artificial intelligence can provide insights into consumer behavior and market trends, allowing businesses to adapt proactively (Ierko, 2023). Implementing sustainable practices can mitigate environmental risks and appeal to eco-conscious customers. Developing robust contingency plans and enhancing communication channels can ensure resilience in the face of crises. Thus, the relevance of this study lies in its focus on developing and testing effective methods for assessing and minimizing risks in the hotel and restaurant industry. By doing so, it aims to contribute to the strengthening and sustainable development of enterprises in this sector, ensuring they remain competitive and resilient in an ever-evolving market landscape.

In the study by N. Sereda & I. Piiurenko (2023), focused on innovation activity in the hotel and restaurant business, technological, organisational, and marketing innovations are considered. Nevertheless, important aspects such as the impact of innovations on different market segments, cultural and social factors, and the interaction between innovative processes and risk management strategies are not explored. The study by H. Hrebeniuk *et al.* (2021) highlights current development strategies for the tourism and hospitality industry in Ukraine, focusing on the challenges facing the industry during economic difficulties. The study addresses changes caused by crisis conditions but lacks a focus on risk management. The research by O. Yakushev (2020) focuses on the use of innovative technologies in the management of business processes in the hotel, restaurant, and tourism sectors. The main emphasis of the study is on the importance of technological innovations in improving management processes in these industries.

The study conducted by N.S. Pryimak & O.A. Nikolaychuk (2023) is aimed at a deep analysis of the essence and organisational approaches to management in the hotel and restaurant sector. The paper focuses on key aspects of management in this industry, in particular, on defining strategies, methods, and effective practices. The study is aimed at identifying optimal organisational approaches that will allow hotels and restaurants to ensure efficiency in their activities. In the study by A. Dyakonova *et al.* (2023), an analysis of the impact of innovative technologies on the quality management strategy in the hotel and restaurant business is conducted. The authors discuss the importance of automation, digital marketing strategies, and intelligent management systems, as well as highlight the challenges associated with the integration of these technologies, including costs and the need for staff training.

The analysis of a number of studies in the hotel and restaurant business field indicates that innovative strategies and risk management are not always considered together. It was determined that some aspects, such as the impact of innovations on different market segments, cultural and social factors, as well as a detailed study of the risks associated with the introduction of new technologies, remain insufficiently explored in previous studies. The purpose of this study is to develop and test effective methods for assessing and minimising risks, which will contribute to the strengthening and sustainable development of enterprises in the hotel and restaurant business sector.

Materials and Methods

Various methods of innovative management strategies in the hotel and restaurant industry were applied in this study. The study integrated various scientific methods, providing an understanding of innovations in this sector. Academic sources thoroughly analyse approaches to minimising the impact of risks on the activities of these companies, as reflected in the studies of authors such as A. de Palma *et al.* (2009), O. Davydova & V. Protsenko (2019), N. Havlovska *et al.* (2019), I. Litvinova *et al.* (2022).

The use of the abstract-logical method was key in identifying and defining the main components of innovative management. This allowed for a deep examination of the theoretical foundations and principles underlying innovative practices, thereby preparing the groundwork for a more in-depth analysis of the subject. The study used a systematic approach. This created a context within which the interrelationships and interactions between different components of innovative management could be investigated. It also offered a view of the structural and functional dynamics of the innovation system, highlighting how different elements work together to stimulate innovations in the hospitality sector. A historical-economic analysis was conducted to trace the evolution of innovative management methods. This method highlighted the impact of historical development and economic trends on the adoption and adaptation of innovative strategies in the hotel and restaurant business. Understanding the historical context and economic consequences provided a deeper understanding of the forces shaping innovations in this field. The study also included taxonomy as a method of classification and evaluation of various aspects of innovative management. The use of this method allowed for a quantitative assessment of different dimensions of innovation, facilitating a structured understanding of the innovation landscape in the hospitality industry. In addition to these methods, extrapolation was used to forecast future trends and the development of innovative management methods. This method was crucial for predicting the areas in which innovations could develop, offering an understanding of possible future scenarios in the hospitality sector.

Graphical methods were used to visually display the results and facilitate their clarity and interpretation. This facilitated the summarisation of the findings, making them more accessible and understandable, and allowed for the clear expression of complex information discovered during the study. The study carefully selected various types of materials, including theoretical works, statistical data, and financial reports, ensuring comprehensive and reliable research on innovative risk management in the hotel and restaurant business. This meticulous material selection process contributed to a comprehensive understanding of the subject and bridged the gap between theory and practice. The study used a range of criteria to assess and select management strategies. Some of the key criteria included:

1. Laplace balance criterion:

$$Ft^{*}=opti\{n1j=1\sum n\Psi(A_{ij},S_{j})\}, \quad (1)$$

where: $\Psi(A_{ij},S_j)$ – utility function of action A_{ij} in state S_j; n – number of nature states.

2. The mixed Hurwicz selection criterion:

$$Ft{-}=opti\{\alpha^{*}j_{max}\Psi(A_{ij},S_{j})+(1\text{-}\alpha)^{*}j_{min}\Psi(A_{ij},S_{j})\}, \quad (2)$$

where: α – optimism parameter; $j_{max}\{\Psi(A_{ij},S_j)\}$ and $j_{min}\{\Psi(A_{ij},S_j)\}$ – maximum and minimum value of the function over j.

3. Savage cautious criterion:

$$Rt^{*}=opti\{\Psi(A_{is},S_{s})\text{-}\Psi(A_{ij},S_{j})\}, \quad (3)$$

where: $\Psi(A_{is},S_s)$ and $\Psi(A_{ij},S_j)$ – functions that reflect the relationship between the elements of matrix A and vector S for specific and general values respectively.

These criterions were used to assess the effectiveness of management strategies in the context of the study. The formulations of these criteria were used for calculations and comparisons during data analysis.

Results

Intense competition in the hospitality and restaurant sector encourages management to create innovative strategies. This necessitates the use of a comprehensive method for a deep analysis of potential threats and a focus on high quality and performance implementation. Effective risk management in the hotel and restaurant sector requires the comprehensive application of various methods for predicting and neutralising potential challenges. In the context of current market changes, the application of accurate and efficient risk assessment methods in the implementation of new projects is important. For adequate risk management in this industry, it is necessary to first identify the main risks, conduct their objective quantitative assessment, and then develop an effective method to reduce their impact. The risk assessment procedure includes the selection of potential solutions, the evaluation of possible consequences of their application, and a comprehensive analysis of risks that takes into account both qualitative and quantitative factors. Key approaches to analysing the impact of risks on the functioning of the hospitality and restaurant sector are identified in academic sources, including statistical methods, cost feasibility assessment, expert assessments, analytical methods, and comparison methods (de Palma, 2009; Litvinova *et al*., 2022;).

Thus, existing approaches to risk analysis in the hotel and restaurant industry focus on comprehensive measures that include identifying decision options, determining potential consequences of their use, and a comprehensive risk assessment, considering both qualitative and quantitative parameters. Therewith, there is a universal approach to risk assessment, which is divided into two main dimensions: the degree of risk and the temporal aspects of risks. When assessing the level of risk for hotel and restaurant businesses, regardless of the method used, the key element is the variability of results from the application of a particular decision. Risk assessment is conducted by analysing the relationship between potential losses and the total value of the company's assets and the probability of these losses occurring (Davydova & Protsenko, 2019).

The rational application of risk assessment techniques contributes to ensuring sustainable development in the hotel and restaurant sector, increases the rationale for making innovative management decisions in high-risk situations, and improves financial efficiency through activity optimisation. The development of an integrated scientific and practical approach to assessing the impact and reducing risks associated with innovative management in the hotel and restaurant industry involves identifying the causes of risks, classifying potential threats, analysing the probability of risks in the context of innovation management, and selecting approaches to assessing their impact (Table 1). The key tasks in risk management in the hotel and restaurant industry cover a wide range of aspects. The establishment of a comprehensive risk assessment system in an enterprise includes not only identifying potential threats but also their detailed analysis, as well as assessing the company's ability to cope with these risks and determining the rationale for the anticipated benefit. The results of this assessment indicate the accuracy of the analyses conducted. In the case of positive results, innovative management strategies are developed for the development of the hotel and restaurant business, and effective management decisions are taken to minimise risks in this area. If there is insufficient information for risk assessment, further data search is conducted. The information obtained is used to develop principles and make balanced management decisions for effective risk control in this industry. Risk management in the hotel and restaurant sector through innovation involves a set of methods and principles for forecasting, minimising, assessing, and eliminating the potentially harmful effects of threats on the company's economic and financial indicators, taking into account current market trends, requirements, new technologies, and other key aspects.

Table 1. A holistic scientific and practical method for assessing the impact and reducing risks associated with innovative management in the development of the hotel and restaurant business

<table>
<tr><th colspan="7">Establishment of the factors leading to risks in innovative management practices for hotel and restaurant business development</th></tr>
<tr><td>Economic instability within the nation</td><td>Inflation rate</td><td>Political instability</td><td rowspan="2">Government regulation of the discount banking rate</td><td rowspan="2">Competitive struggle (significantly increased under conditions of WTO accession)</td><td rowspan="2">Price fluctuations in the world market</td><td rowspan="2">Inefficient management of the financial policies of industrial enterprises</td></tr>
<tr><td>Increasing costs of industrial enterprises</td><td>Currency rates fluctuations</td><td>Economic instability</td></tr>
<tr><th colspan="7">Identification of varieties of risk in pioneering leadership for the advancement of hospitality and dining establishments</th></tr>
<tr><th colspan="7">Examination of new risks associated with the innovative growth strategies in the hotel and restaurant sector management</th></tr>
</table>

<table>
<tr><th colspan="4">Qualitative analysis</th><th>Quantitative analysis</th></tr>
<tr><td>The necessity to evaluate the anticipated beneficial outcomes against potential financial, societal, and additional impacts, both current and prospective</td><td rowspan="2">Identification of the relationship of interdependence (correlation) between key arguments (risk factors)</td><td rowspan="2">Creation of a predictive model to estimate the value of significant performance metrics of the subject</td><td rowspan="2">Production of stochastic scenarios grounded on a set of agreed assumptions about the potential values of critical elements</td><td>Building a collection of likely estimates for principal variables (risk elements)</td></tr>
<tr><td>Establishment of the impact of decisions made under conditions of uncertainty on interests of economic life subjects</td><td>Selection of principal variables (risk elements) for the object under analysis</td></tr>
</table>

Table 1, Continued

Selection of methods to assess the degree of risk impact linked with inventive administration in the advancement of the hospitality and restaurant industry. enterprises					
Statistical method	Cost expediency method	Expert evaluation method	Analytical method	Analogues method	Statistical analysis of simulation results. Interpretation of analysis results
Appropriate assessment of the risk impact level connected with innovative approaches in the development of enterprises in the hotel and restaurant sector has been carried out					

Establishment of guidelines for managing innovative risks in hotel and restaurant business enterprises			
Awareness of risk acceptance	Accounting of the possibility of risk transfer	Manageability of risks	Cost-effectiveness of risk management
Autonomous handling of separate risks	Contrasting the degree of risk with the profitability margins of financial operations.	Incorporation of the temporal element in the management of risks	Comparison of the level of risk to the financial capacity of the enterprise
		Incorporation of the business strategic approach into the management procedures	
Production and making of effective, innovative management decisions to mitigate risks for hotel and restaurant business enterprises			

Source: compiled by the authors

Risks are characterised by a mathematically significant probability of loss, which can be statistically determined and calculated with high accuracy. To formulate effective strategies for managing potential risk scenarios in business, it is important to use economic-mathematical models. These models help localise and mitigate the negative effects of risks. Various criteria are included, such as Laplace Bayes, Savage, Wald, Hurwicz, Hodges-Lehmann. Using data from 2011-2020, an integrated index for innovation management in the hotel and restaurant sector was calculated (Dyakonova *et al.*, 2023). Using Statistica software version 6 and its cluster analysis module, a hierarchical dendrogram was created, showing the association of 20 operating hotel and restaurant businesses from different regions of Ukraine based on integrated innovation management indicators. From this dendrogram, it was concluded that these enterprises can be divided into three different clusters. The average value was calculated to determine the leading enterprises in each cluster. The selection of the least risky enterprise in the hotel and restaurant sector was conducted using various methods, focusing on the last three years of analysis (Table 2).

Table 2. Calculation of the least risky hotel and restaurant business by cluster

Name	2018	2019	2020	Laplace (2018-2020)	Hurwicz (2018-2020)	Savage (2018-2020)
"Savoy" JSC	0.704	-	-	0.762	0.548	0
"Vinnytsia Hotels" JSC	-	0.783	-	0.435	0.348	0.309
"Podillia" JSC	-	-	0.799	0.446	0.315	-
"Premier Palace" JSC	0.384	-	-	0.309	0.498	-

Source: compiled by the authors

Using formula (1), the Laplace equilibrium criterion (Ft∗) was determined, which allowed evaluating the optimality of decisions based on the average value of the $\Psi(A_{ij},S_j)$ function for each element. According to formulas (2), the mixed Hurwicz selection criterion (Ft-) was applied, combining the maximum and minimum values of the $\Psi(A_{ij},S_j)$ function with the weighting parameter α. In addition, using formula (3), the Savage cautiousness criterion (Rt∗) was implemented, which considers the difference between specific and general values of the $\Psi(A_{ij},S_j)$ function.

The average probability value includes calculating the average probabilities by summing them up and dividing by the total number of cases. This provides an indicator of the overall probability of various risk scenarios occurring. The weighted choice of maximum and minimum involves calculating using the coefficient α (alpha) considering the weighted evaluation of optimistic and pessimistic scenarios. This method allows for considering different impacts of extreme results, providing a more balanced perspective. The maximum loss deviation focuses on the difference between the worst-case scenario and the selected result. It highlights possible deviations from maximum loss, providing an idea of the seriousness of risks and aiding in decision-making. The three decision-making stability assessment methods include the Laplace equilibrium criterion, the mixed Hurwicz selection criterion, and the Savage cautiousness criterion. The Laplace equilibrium criterion uses the average value of the $\Psi(A_{ij},S_j)$ function for all alternatives. The mixed Hurwicz selection criterion depends on a weighted combination of the maximum and minimum values of this function using the parameter αα. The Savage cautiousness criterion is determined by the difference between the value of the $\Psi(A_{is},S_s)$ function for the best alternative and the value of this function for each other alternative.

Analytical results obtained based on the established criteria demonstrate that the lowest level of risk characterises enterprises grouped in the initial cluster. This fact serves as a reliable confirmation of the effectiveness and feasibility of using cluster analysis methodology in the context of risk assessment. Modern enterprises operating in the hotel and restaurant sector face the need to constantly analyse and assess risks affecting various aspects of their activities (Romaniuk *et al*., 2022). This becomes particularly relevant during periods of unstable economic and political conditions, which can be observed both in individual countries and globally. These conditions lead to an increase in the intensity of risks, requiring businesses to adapt and be flexible in decision-making. To reduce the risks faced by hotel and restaurant enterprises, comprehensive internal risk reduction strategies are used. The development and implementation of such risk reduction strategies form the basis of an innovative management system in these enterprises. The strategies encompass a wide range of measures implemented internally to minimise potential threats. Modern hotel and restaurant businesses must effectively identify the main causes of risks, their scale, potential losses, and develop a set of measures to prevent and mitigate them. The specifics of operations in the hotel and restaurant industry significantly influence the choice of factors and methods that underlie internal risk reduction strategies. This is due to the nature of such businesses, which involves interaction with a large number of stakeholders, market volatility, and the need to comply with high standards of service quality. An important aspect of risk management strategies in the hotel and restaurant business is the creation and continuous updating of a dynamic information system (Matviichuk *et al*., 2023). Such a system allows for collecting and analysing detailed data not only on the current state of specific hotel and restaurant establishments but also on changes in the legislative and regulatory environment, which can have a significant impact on their development and successful operation.

Table 3 illustrates the developed method for improving the innovation risk management system in the hotel and restaurant business sector. According to this scheme, the risk associated with innovation development in this industry is divided into basic components: primary risks, classified as compatible and incompatible. Each of these types of risks is analysed, considering the factors that cause them. Typically, all acceptable risks, a significant portion of critical risks, and dangerous, catastrophic risks that do not threaten life are borne by hotel and restaurant enterprises out of objective necessity and become the main subject of internal risk reduction mechanisms. These strategies include various approaches and methods aimed at identifying, assessing, and minimising potential risks. They may involve measures such as staff training, the introduction of new technologies, strengthening internal control and audit processes, and the development of effective crisis management plans. Therefore, the use of a comprehensive approach to risk management, which includes both strategic planning and operational response to current challenges, is crucial for maintaining the stability and development of hotel and restaurant enterprises. Innovations in risk management, focusing on the individual needs of each enterprise and continuously updating information systems, allow achieving a high level of efficiency and competitiveness in this dynamic industry.

Table 3. System for improving approaches to innovation risk management in hospitality and restaurant companies

System of internal risk management mechanisms of hotel and restaurant business enterprises and their characteristics	
Risk avoidance	This field of risk mitigation is the most radical. It aims to develop such internal measures that completely eliminate a specific type of risk
Risk concentration limitation	The approach to curtail the aggregation of risks is typically employed for scenarios that exceed acceptable thresholds, particularly for economic activities in zones of significant or extreme risk. This reduction is achieved by establishing suitable in-house benchmarks within the company during the execution of diverse economic operations
Hedging	Mitigating risks through the execution of corresponding derivative transactions is an efficacious method for lessening possible financial detriment in the event of risk manifestation. Although there are associated expenses such as brokerage fees and options premiums, these are generally less substantial than the costs associated with external risk insurance policies. A range of risk hedging techniques has been widely adopted in the realm of domestic risk management practices
Diversification	The strategy of diversification is primarily applied to alleviate the adverse financial effects of non-systematic (unique) risk types. Primarily, it serves to reduce the risks associated with a portfolio
Risk sharing	This financial risk mitigation technique involves partially transferring risk to partners involved in certain business dealings. In this arrangement, partners assume a share of the risks, for which they are better equipped to minimise potential adverse outcomes and possess more efficient means of internal insurance safeguards

Table 3, Continued

System of internal risk management mechanisms of hotel and restaurant business enterprises and their characteristics		
Self-insurance	This method of financial risk reduction relies on an enterprise setting aside a portion of its funds, enabling it to counteract the negative financial impacts of business operations that are unrelated to actions of third parties	
Other method of neutralisation of internal risks	Allocation of an extra layer of the risk premium for business operational activities to secure certain assurances, curtailing the scope of force majeure conditions and guaranteeing restitution for potential risk-induced losses through an established framework of penalties	
Enhancement of the innovative approach to risk management within the hospitality and dining sector enterprises		
Implementation of effective analytical and early warning techniques	Integration of risk assessment into strategic and operational processes	Improvement of risk measurement and monitoring
Identification of risks at the business process level leads to more informed, innovative management decisions	With the integration of risk management into the operational strategy, leaders grow more cautious in their approach to making decisions related to innovative administration	Risk reports will facilitate the exchange of knowledge regarding various aspects of the innovative management system

Source: compiled by the authors

Table 3 presents a system that includes key elements for effective management of innovative risks in the hospitality and restaurant business. This system is based on the integration of advanced risk management practices and considers the specifics of the industry. Using this approach allows companies not only to minimise potential risks but also to respond effectively to rapid changes in the market environment, which is critical to ensuring their competitiveness.

Effective risk management involves identifying key risks, conducting quantitative assessments, and developing strategies to mitigate their impact, using approaches like statistical and cost feasibility assessments. Integrating risk assessment into strategic and operational processes allows enterprises to make informed, innovative decisions. Techniques like the Laplace, Hurwicz, and Savage criteria, along with cluster analysis, aid in evaluating and mitigating risks, helping identify low-risk enterprises for better decision-making. Continuous risk analysis and adaptation are crucial, especially in unstable economic and political climates. Internal risk reduction strategies, such as staff training, technological advancements, and robust crisis management plans, are vital for maintaining stability and sustainable growth. A dynamic information system for data collection and analysis on regulatory changes and market conditions is essential for effective risk management. In essence, a comprehensive approach to risk management, combining strategic planning and operational responses, enhances efficiency and competitiveness in this dynamic industry. Innovations tailored to the specific needs of each enterprise, coupled with continuous information updates, significantly bolster their resilience and success.

Discussion

In the hospitality and restaurant service sector, managing innovative risks is a key topic that requires careful study. In the modern world, where the business environment is changing rapidly, the hotel and restaurant sector faces various challenges and risks. These risks may be related to market fluctuations, technological innovations, changes in consumer preferences, political uncertainty, and even global crises, such as the COVID-19 pandemic. In this context, innovative risk management becomes crucial for ensuring the sustainable development and competitiveness of enterprises (Havlovska, 2019; Novykova *et al*., 2023).

M. Breier *et al.* (2021) emphasize the importance of business model innovation (BMI) in helping the hospitality industry recover from the COVID-19 crisis. Their study reveals that firms adopting BMI were able to create new revenue streams and improve liquidity. This aligns with the current study's findings, which highlight the necessity of innovative risk management to maintain stability and competitiveness. The integration of new business models, as suggested by M. Breier *et al*. complements the comprehensive risk assessment methods identified in this study, showcasing the critical interplay between innovation and risk management.

Authors explore the relationship between strategic agility, BMI, and firm performance. Their findings indicate that strategic agility enhances the adoption of BMI, particularly in turbulent environments. The current study corroborates this by demonstrating that effective risk management requires agility and adaptability to mitigate potential challenges. The positive impact of value creation and value proposition BMIs on firm performance, as noted by T. Clauss *et al*., parallels the emphasis on high-quality performance and innovative strategies in the hotel and restaurant sector discussed here (Clauss *et al*., 2021).

M. Mazurek (2020) provides a critical discussion on tourism disaster management, highlighting the importance of proactive risk management models. This study extends M. Mazurek's work by applying these principles to the hospitality sector, demonstrating that comprehensive internal risk reduction strategies, such as staff training and technological advancements, are vital for sustainable growth. The creation of dynamic information systems, as recommended by M. Mazurek, is also echoed in the current study, reinforcing the need for continuous data collection and analysis to adapt to changing market conditions.

A. Salamzadeh *et al.* (2023) investigate the effect of BMI on crisis management, emphasizing the mediating roles of entrepreneurial capability, resilience, and business performance. The current study supports these findings by illustrating that innovative risk management not only mitigates risks but also enhances overall business performance. The inclusion of entrepreneurial capability and resilience as key factors aligns with the comprehensive approach to risk management advocated here, which includes strategic planning and operational responses.

Also it was discussed turnaround management through business process reengineering in the hospitality sector. Their research highlights the importance of rethinking and redesigning management processes to overcome crises. This is consistent with the current study's focus on innovative management strategies to mitigate risks. The application of economic-mathematical models and cluster analysis in this study provides a structured approach to identifying and managing risks, supporting the need for continuous improvement and adaptation in management practices (Stefani & Priatmodjo, 2021).

F. Musiello-Neto *et al.* (2021) assess the relationship between open innovation and competitive advantage, mediated by organizational strategy. Their findings highlight that open innovation and strategic planning are crucial for maintaining competitiveness. The current study extends this by demonstrating that integrating risk assessment into strategic processes enhances decision-making and business performance. The emphasis on organizational strategy as a mediator supports the idea that innovative risk management must be embedded in the overall business strategy.

S. Sardar *et al.* (2022) examine the socio-economic impacts of COVID-19 on the restaurant business in Bangladesh, highlighting the challenges faced by restaurant owners, such as increased operational costs and the need for financial support. This aligns with the current study's identification of economic instability and increased costs as major risk factors. The call for government assistance and financial support in S. Sardar *et al.*'s study underscores the importance of external support mechanisms, which complement the internal risk management strategies discussed here.

These studies underscore that innovative risk management is an integral part of successful hotel and restaurant business management. They point to the need for flexibility, adaptation, and continuous innovative development to ensure resilience and success in this industry. The importance of these aspects is particularly pronounced in the face of changing market conditions, technological innovations, and global challenges such as the COVID-19 pandemic. The main goal of risk management in this industry is not only to minimise potential losses but also to use opportunities for innovative development and the creation of new competitive advantages.

Conclusions

The results of the study indicate the importance of developing and implementing effective risk management mechanisms in the hotel and restaurant business. Determining the level of riskiness of enterprises in this sector is a priority task that requires an adequate assessment of possible losses, the probability of their occurrence, and the impact of individual factors on the overall risk of innovative development.

The findings of this study indicate that a risk management strategy based on risk minimisation involves implementing innovative management decisions based on comparing financial-mathematical models of different scenarios to determine the scenario with the lowest risk level. However, in conditions of market uncertainty, the existence of an absolutely risk-free scenario is problematic. In some cases, the risks of innovative management cannot be offset by internal financial stabilisation mechanisms, and then it is advisable for the management of hotel and restaurant enterprises to turn to insurance services. Risk impact analysis techniques for hospitality and restaurant companies focus on comprehensive actions: developing possible problem-solving options, assessing the potential consequences of choosing a particular solution, and a comprehensive risk assessment that combines both quantitative and qualitative elements. There is a tendency to assess risk in two areas: risk level and time risk. When determining the level of risk for enterprises in the hotel and restaurant business, the main criterion is the instability of the results of a specific decision. Risk analysis is presented in the form of a ratio between projected losses and the total value of the organisation's assets, including an assessment of the probability of such losses. Effective and deliberate application of risk analysis methods contributes to ensuring the stable development of hotel and restaurant sector enterprises, strengthening the validity of innovative management decisions in high-risk situations and improving the financial condition due to various aspects of their activities.

In further research, it is important to focus on a detailed analysis of the impact of external factors on the hotel and restaurant business, the development of adaptive risk management models, the study of the impact of innovative technologies such as artificial intelligence and big data on risk reduction, as well as the analysis of cultural and regional characteristics in risk management strategies. A comparative analysis of different approaches to risk management and an assessment of the impact of training and staff development on the effectiveness of these strategies are also important, as this will help to enhance the resilience and sustainable development of hotel and restaurant enterprises.

Acknowledgements

None.

Conflict of Interest

None.

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Інноваційне управління ризиками на підприємствах готельно-ресторанного бізнесу: науково-практичний аспект

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Анотація. Ефективне управління ризиками необхідне для успіху динамічного розвитку готельно-ресторанного бізнесу. В умовах зростання конкуренції та нестабільності ринку існує потреба в розробці інноваційних стратегій управління ризиками. Метою дослідження є розробка та апробація методів оцінки та мінімізації ризиків, спрямованих на зміцнення та сталий розвиток підприємств готельно-ресторанного бізнесу. За допомогою абстрактно-логічного аналізу та системного підходу проведено класифікацію підприємств залежно від рівня ризику. Результати цього дослідження демонструють комплексне розуміння інноваційних методів менеджменту в готельно-ресторанному господарстві. Отримані дані свідчать про те, що підприємства початкового кластеру менш вразливі до ризиків, що підтверджує ефективність кластерного аналізу в оцінці ризиків у готельно-ресторанному секторі. В умовах економічної та політичної нестабільності системний аналіз та управління ризиками стали важливими. Внутрішні стратегії управління ризиками, в тому числі інноваційні методи, були успішно використані для зниження потенційних загроз для готельно-ресторанного бізнесу з урахуванням специфіки цієї галузі. Розробка та підтримка динамічної інформаційної системи стала ключовим елементом, що сприяє ефективному управлінню ризиками та підвищенню конкурентоспроможності підприємств. Зазначені підприємства, залишаючись у межах найнижчого рівня ризику, підтвердили важливість використання кластерного аналізу для ідентифікації та управління ризиками в готельно-ресторанному секторі. Це дослідження представляє інноваційні підходи до управління ризиками в готельній та ресторанній сфері, надаючи конкретні стратегії, які можуть бути використані компаніями для підвищення стійкості та адаптації до викликів ринкової конкуренції

Ключові слова: стратегічна адаптація; об'єднання групових організацій; економіко-математичне моделювання; внутрішня система мінімізації ризиків; прогнозний аналіз