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QUALIFICATION WORK

on the topic: «**FORMATION OF A MECHANISM FOR STRATEGIC RISK MANAGEMENT IN THE ACTIVITIES OF PHARMACEUTICAL ENTERPRISES»**

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АНОТАЦІЯ

Дослідження присвячене формуванню механізму стратегічного управління ризиками в діяльності фармацевтичних підприємств. Було проведено впровадження ризик-менеджменту в управління діяльністю АТ «ФАРМАК». Робота викладена на 42 сторінках і містить 9 таблиць та 17 рисунок, які слугують для систематизації та візуалізації теоретичних положень, результатів аналізу та розроблених пропозицій. Теоретико-методологічну базу дослідження становить ґрунтовний огляд 30 літературних джерел.

Ключові слова: формування, механізм, стратегічний ризик, управління, діяльність, фармацевтичне підприємство

ANNOTATION

The study is devoted to formation of a mechanism for strategic risk management in the activities of pharmaceutical enterprises. Implementation of risk management in the management of the activities of JSC «FARMAK» was conducted. The study spans 42 pages and is supported by 9 tables and 17 figures, which serve to systematize and visualize the theoretical framework, analytical findings, and proposed recommendations. The research is grounded in a comprehensive review of 30 literary sources.

Keywords: formation, mechanism, strategic risk, management, activity, pharmaceutical enterprise

CONTENT

INTRODUCTION

Relevance of the topic. The relevance of the research topic is driven by the urgent need for pharmaceutical enterprises to adapt to conditions of extreme uncertainty caused by both global challenges and the current military and political instability in Ukraine. The pharmaceutical industry is a strategically vital component of national security, ensuring the well-being of the population and the resilience of the healthcare system. In today's environment, traditional operational risk management methods are no longer sufficient, necessitating the development and implementation of a comprehensive mechanism for strategic risk management. This mechanism must be integrated into the enterprise's overall development strategy, allowing it not only to minimize potential losses but also to identify new opportunities for innovative growth [16].

The management of risks gains particular significance in the context of European integration and the requirement to adhere to stringent international standards, such as Good Manufacturing Practice (GMP). The need to ensure business continuity, digitalize production lines within the Industry 4.0 framework, and diversify supply chains requires management to adopt new approaches to assessing strategic threats. Forming an effective strategic risk management mechanism allows pharmaceutical companies, such as JSC "Farmak," to maintain high investment attractiveness, strengthen competitive positions in international markets, and ensure sustainable development despite external shocks. Therefore, the scientific substantiation and practical improvement of tools for managing strategic risks is a critically important task for ensuring the economic security and social responsibility of modern pharmaceutical businesses [11].

In the context of reform, increased competition and the critical importance of ensuring patient safety, improving the management system of pharmaceutical enterprises through the implementation of risk management acquires special scientific, theoretical and practical significance. The study is timely, as it allows developing specific practical recommendations and tools to increase the

sustainability, efficiency and safety of the functioning of a medical institution using the example of a JSC «FARMAK» [11].

The theoretical and methodological principles of the risk management system (RMS) of modern organizations have been thoroughly reflected in the works of many domestic and foreign scientists [21].

However, despite the significant attention of scientists to the concept of risk management system, in modern scientific literature, in particular in the context of pharmaceutical enterprises, there is still no comprehensive and differentiated consideration of a number of key factors that determine new business conditions: the growing instability of market structures and the external environment, the impact of crisis phenomena increases pressure on the financial stability of medical institutions [20].

Thus, the need to develop and improve practical recommendations for integrating risk management into the management activities of a healthcare institution, considering the above-mentioned modern challenges, determined the choice of the topic of this qualification work [17].

The purpose of the qualification work is formation of a mechanism for strategic risk management in the activities of pharmaceutical enterprises.

To achieve the goal of the qualification work, it is necessary to solve the following **tasks**:

- to define the conceptual and categorical apparatus of risk management and formulate the key stages of the risk management process;
- to investigate the main quantitative and qualitative methods of risk assessment and identify the most effective risk management tools in pharmaceutical branch;
- analyze the organizational and economic activities and key financial and economic indicators of the JSC «FARMAK»;
- determine the list and analyze the level of probability and impact of key risks inherent in the activities of the JSC «FARMAK»;

- to explore the possibilities and determine the conceptual principles of forming and implementing an effective risk management system at JSC «FARMAK»;
- analyze the costs and determine the expected economic effect of implementing the proposed risk management initiatives.

The object of the study is the process of managing the activities of JSC «FARMAK»in the context of reform and growing market competition.

The subject of the study is a set of organizational and economic measures and tools aimed at identifying, assessing and minimizing risks in the activities of JSC «FARMAK».

To achieve the research goal, the following **methods will be used**: analysis and synthesis, induction and deduction, systemic approach, monographic method, comparative analysis, formalization and modeling, statistical analysis, expert assessments and questionnaires, matrix method and forecasting, and economic and mathematical modeling.

Practical significance of the obtained results. The practical significance of the results of the work lies in the development of specific, scientifically based recommendations and tools that can be immediately implemented in the management practice of JSC «FARMAK» and other similar pharmaceutical enterprises.

The results obtained are significant in the following main areas: improving management decisions and increasing safety; systematization of risks (five key categories of risks were identified - clinical, infectious, operational, personnel and financial) and their ranking was carried out using a risk matrix). This gives management a clear priority for immediate management actions, in particular, regarding infectious incidents and complications. The creation of a centralized risk management system was substantiated and conceptualized, which provides a full risk management cycle, from qualitative analysis to corrective measures. The feasibility of creating a risk manager position to ensure professional and systemic risk management, which requires a clear distribution of powers and the

establishment of information channels within the pharmaceutical enterprise, was proven. The financial effectiveness of the project was proven by calculating the net present value (NPV), which confirms the high investment attractiveness and economic justification of creating a CRM. The predicted positive effect. Thus, the results of the work provide the management of pharmaceutical enterprises with a ready-made, economically sound roadmap for improving management, increasing business sustainability, and ensuring long-term competitiveness.

Approbation of research results and publication. Qualification work is approved on II All-Ukrainian Scientific and Practical Conference with International Participation “interdisciplinary approaches to drug development”. Abstracts of the reports have been published: Bondarieva I.V., Malyi V.V., Aghouri Aissam. Formation of a mechanism for strategic risk management in the activities of pharmaceutical enterprises. Interdisciplinary approaches to the creation of drugs: theses of the II All-Ukrainian Scientific-Practical Conference with international participation, April 14–15, 2026, Odesa / edited by Ph.D., Assoc. Prof. Menchuk V. V., Ph.D., Assoc. Prof. Raskola L. A., Ph.D., Assoc. Prof. Kalko K. O., Ph.D., Assoc. Prof. Kovpak A. V., Ph.D. Tsisak A. O. – Odesa: Odessa National University named after I. I. Mechnikov, 2026. – P. 372.

Structure and scope of the qualification work. The qualification work consists of an introduction, a literature review, an experimental part, generalized conclusions, a list of used literary sources and appendices. The total volume of the work is 42 pages, which contain 17 figures and 9 tables. Also, 30 literary sources were used and analyzed in the work.

CHAPTER 1
THEORETICAL BASIS OF PHARMACEUTICAL ENTERPRISES MANAGEMENT BASED ON THE RISK MANAGEMENT CONCEPT

1.1 The concept, essence and stages of risks in the activities of enterprises

In the context of the modern economic paradigm, characterized by permanent turbulence of the external environment, increasing dynamics of technological changes and asymmetry of information flows, the category of risk acquires the status of a fundamental element that determines the efficiency and strategic stability of the functioning of any economic entity. A deep explication of the epistemological essence of risk, its taxonomic structure and operationalization of the stages of risk management is the methodological basis for the formation of adaptive mechanisms of corporate governance [2]. Risk should be considered as an integral characteristic of uncertainty, which manifests itself in the potential deviation of the actual result of activity from the target (planned) indicator. From the position of decision-making theory, risk is a functional relationship between the probability of a certain event occurring and the magnitude of the potential economic consequences of this event [3]. The modern philosophy of risk management goes beyond treating risk solely as a source of financial losses (pure risk), integrating also speculative risk, which implies a bipolar possibility: receiving losses or additional profit [4].

The ontological essence of risk is manifested through its multifunctionality:

- innovative and progressive function – risk is a catalyst for finding optimal solutions, stimulating diversification of activities and the implementation of organizational and technological innovations;
- regulatory function – risk provides a self-regulation mechanism in conditions of limited resources, forcing the business entity to adhere to the principle of economic rationality;
- protective function – risk determines the need to create buffer systems, reserves and mechanisms for transferring potential losses (insurance);

- analytical function – the process of identifying and assessing risk is a necessary condition for an in-depth diagnostic analysis of the internal and external environment of the enterprise [5].

The types of risks are presented in Fig. 1.1 [5].

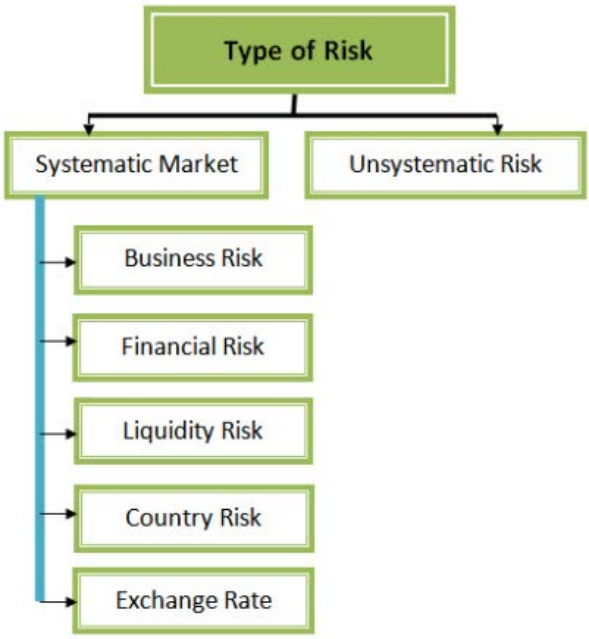

Fig. 1.1 Types of risks [5]

To ensure the adequacy of management influence, risks must be systematized. Key criteria of the taxonomy include:

1. By source of origin – systematic (external), which are uncontrolled (macroeconomic, political, inflationary), and unsystematic (internal), which are related to the operational activities of the enterprise and are subject to partial control (human resources, operational, marketing) [8].

2. According to the possibility of management – controlled (whose quality can be managed) and uncontrolled (whose consequences only need to be minimized).

3. By area of manifestation – financial risks (credit, liquidity, interest), operational risks (business process disruptions, technical failures), strategic risks (incorrect choice of target market, inadequate investment policy).

The risk management process (risk management) is a systematic, iterative sequence of actions aimed at ensuring the sustainability of the organization's functioning in accordance with the ISO 31000 series of standards. The primary stage – identification and verification of risk and involves the systematic identification, documentation and classification of all potential sources of uncertainty that can destructively or constructively affect the achievement of enterprise goals. The methods of business process audit, expert assessments, scenario analysis and drawing up a detailed register (map) of risks are used. The definition of the concept of “risk” by various authors is presented in Table 1.1 [9].

The second stage is risk analysis and quantification. At this stage, the identified risks are assessed according to two main parameters: the probability of occurrence and the magnitude of the potential impact (consequences). Qualitative assessment is carried out by ranking and categorizing risks, often using a “probability–impact” matrix. Quantitative assessment involves the use of tools from mathematical statistics and probability theory, including the calculation of risk measure indicators (variance, standard deviation) and modeling the distribution of possible outcomes [10]. The third stage is risk processing and regulation. The response stage consists of selecting and implementing a risk impact strategy that is optimal in terms of cost-effectiveness [7].

Table 1.1

Definition of the concept of "risk" by various authors

Author	Definition of the concept of "Risk"
A. Marshall, A. Pigou	The marginal utility of possible fluctuations in the size of expected profits.
D. V. Dyachkov	The danger of unforeseen and undesirable consequences of the subject's actions.
M.R. Wiedemann	The cumulative effect of the probability of occurrence of uncertain events that may negatively affect the achievement of the enterprise's goals.
O. V. Shepelenko	A method of managing in unforeseen conditions (circumstances) created by the entrepreneur's special abilities; the ability and necessity to prevent stochastic conditions, reduce their adverse effects, and obtain entrepreneurial income under these conditions.

J. Pfeffer	A combination of several types of excitement, it is measured by probability; risk is a state of the world; uncertainty is a state of the imagination.
A. G. Zagorodniy, G. Voznyuk	Activities related to overcoming uncertainty in a situation of inevitable choice, in the process of which it is possible to qualitatively and quantitatively assess the probability of achieving the intended result, failure, deviation from the goal.
I.Yu. Ivchenko	Awareness of the possibility of the risk of unforeseen losses of expected profits, property, and money due to random changes in the conditions of economic activity and adverse circumstances.
V.V. Lukyanova, T.V. Golovach	The probability of losses, loss of profits, undesirable development of the operating environment, deviation from established goals.
Economic encyclopedic dictionary	Unpredictability and the possibility of events with negative consequences (incurring losses, losing profits, etc.) caused by certain actions or decisions that will take place in the future.
M. Granaturov, A. S. Shapkin	Activities related to overcoming uncertainty in a situation of inevitable choice, in the process of which it is possible to quantitatively and qualitatively assess the probability of achieving the expected result, failure and deviation from the goal.
V.V. Machine	An objective-subjective category that is associated with overcoming uncertainty, randomness, and conflict in a situation of inevitable choice and reflects the degree of achievement of the expected result.

Main stages of the risk management process presented in the table 1.2.

Table 1.2

Main stages of the risk management process

N	Stage name	Main content / Purpose
1	Risk identification	Identifying, recognizing, and describing potential risks (threats and opportunities) that may affect the objectives of a project or organization.
2	Risk analysis and assessment	Determining the probability of risks occurring and their potential impact (consequences). Conducting quantitative and qualitative assessments, as well as ranking risks.
3	Strategy development/risk response planning	Selection of management methods and tools for each risk. Development of specific actions (strategies) to avoid, reduce, transfer risks (threats) or use, enhance, share risks (opportunities).
4	Implementing a risk response plan	Implementation of selected strategies and measures aimed at preventing risks or minimizing their consequences.
5	Risk monitoring and control	Continuous monitoring of existing risks, tracking of residual and secondary risks, and assessment of the effectiveness of applied management measures. Adjustment of the plan as necessary.

Four main strategies include: eliminating risk-generating activities; applying control procedures to minimize the likelihood or consequences of risk (e.g., diversification, implementing quality standards); shifting financial responsibility to third parties (insurance, hedging, outsourcing); and making a conscious decision to finance potential losses with one's own resources (relevant for low-impact risks) [22].

The classification of risk types is presented in Fig. 1.2. [9].

Fig. 1.2 Classification of risk types [9]

The final stage (monitoring and adjustment) involves continuous tracking of the level of risks in dynamics, assessment of the effectiveness of applied control measures, and timely adjustment of the SRM in response to changes in internal and external conditions. Monitoring ensures the updating of the risk register and the integration of the acquired experience into subsequent iterations of the management cycle [9]. Risk management ceases to be an auxiliary function and is transformed into a cornerstone of strategic management. Comprehensive understanding of the essence of risk and strict adherence to systematic stages of risk management not only

protects the value of the enterprise, but also creates the prerequisites for the implementation of new investment opportunities, thereby increasing the adaptability and long-term competitiveness of the organization in conditions of economic uncertainty [1].

1.2 Assessment methods and risk management tools in pharmaceutical branch

Risk management (RM) in the pharmaceutical sector is a critically important integrative process aimed at identifying, assessing, prioritizing and mitigating potential threats that may negatively impact patient safety, quality of healthcare delivery, financial sustainability and reputation of healthcare institutions. This multifaceted discipline draws on the principles of systems thinking, epidemiology, biostatistics and organizational psychology, transforming a reactive culture (focused on post-facto incident investigation) into a preventive system. Central to this process is the risk assessment (RA) methodology, which is the first and most important stage of RM, providing for the systematic analysis of existing or potential hazards and determining the probability of their occurrence, as well as the severity of their consequences. Qualitative and semi-quantitative methods are used for initial identification and rapid prioritization of risks. A key proactive tool borrowed from engineering is failure mode analysis, which systematically analyzes a process to identify potential “failure modes,” their causes, and their ultimate consequences. The FMEA methodology assigns three numerical ratings (usually on a scale of 1 to 10) to each potential failure: severity, probability of occurrence, and probability of detection. These values are multiplied to obtain a risk priority number. Risks with the highest RPN require immediate intervention [11]. Semi-quantitative methods also include the risk matrix, a visual representation of risk as a function of probability and severity. This tool, where probability and severity are determined by experts (e.g., a scale of 1–5), is used for initial screening, classifying risks into categories from “unacceptable” to “low”. Table 1.3 summarizes the main assessment methods and risk management tools in healthcare, grouped by their focus [10].

Table 1.3

Assessment methods and risk management tools in pharmaceutical branch

Category	Method/tool name	Type (rating/ management)	Directionality	Main goal and principle
rating	analysis of types and consequences of failures	evaluation (process)	proactive	systematic identification of potential failures, their causes and consequences. determination of a risk priority number for prioritization
rating	risk matrix	assessment (quick)	proactive	semi-quantitative visualization of risk as a function of probability and severity. used for rapid screening
rating	fault tree analysis	evaluation (system)	proactive	a deductive method that analyzes what combinations of initial faults can lead to a final undesirable event
rating	cause-and-effect analysis	assessment (incident)	reactive	in-depth investigation of a serious incident that has already occurred to identify systemic (latent) causes, not just the immediate error
rating	epidemiological data analysis	assessment (data)	reactive	calculation of quantitative indicators based on retrospective data to identify the relationship between risk factors and consequences
management	creating a culture of justice	management (organization)	proactive	promoting open reporting of incidents and near-misses without fear of retribution, which is the basis for identifying risks
management	process standardization	management (process)	proactive	reducing practice variability and errors through the implementation of standardized, scientifically based protocols and checklists (e.g. WHO)
management	human factor management	management (design)	proactive	optimization of the work environment, equipment and interfaces considering human cognitive and physical limitations to prevent usage errors
management	financial liability insurance	management (finance)	reactive	transfer of financial risk associated with professional negligence to external insurance companies
management	audit and compliance with regulatory requirements	management (system)	proactive/ reactive	ensuring that the institution's activities comply with legislative and regulatory standards to avoid legal and financial sanctions

In contrast to proactive approaches, quantitative and retrospective methods are used to deeply analyze complex systems and assess risks based on real data.

Causal analysis is a reactive tool used after a major incident. Its goal is to identify not only the immediate error, but also the latent systemic factors and organizational weaknesses that contributed to the error, using techniques such as the fishbone diagram or the five whys method. More formalized logical-deductive methods include fault tree analysis, which starts with an undesirable end event and deductively traces all possible combinations of initial faults or errors through logical operators, and event tree analysis, which inductively models the sequences of consequences starting from the initial event and passing through critical barriers. Furthermore, epidemiological data analysis uses retrospective data (incident reports, medical records) to calculate quantitative metrics such as risk frequency, relative risk, and odds ratio, providing a statistical estimate of the association between a risk factor and an outcome [10].

After the assessment phase, the risk management phase begins, which consists of developing and implementing control and monitoring measures that can be classified according to the main strategies of the "four Ts ": transfer, treat/reduce, terminate/avoid and tolerate. Systemic and organizational tools are critical to reducing risks. A fundamental tool is the creation of a patient safety culture that requires openness, no punishment for unintentional errors and encouragement of staff to actively report incidents and potentially dangerous situations, which allows collecting the necessary data for preventive analysis. A second powerful tool is the standardization of processes through the implementation of unified, scientifically based clinical guidelines and protocols, which minimizes the variability of practice, which is a major source of medical errors. In particular, the use of " checklists", such as the WHO surgical checklist, significantly reduces intraoperative and postoperative risks. At the same time, human management is applied, which focuses on the design of the work environment, equipment and processes considering human limitations and capabilities, including ergonomics and standardization of device interfaces to prevent errors caused by improper use [15].

From a financial and legal management perspective, liability insurance is used as a classic tool for transferring financial risk associated with medical negligence to

insurance companies. In parallel, internal legal audit and compliance with regulatory requirements ensures constant monitoring of changes in legislation (for example, regarding the protection of patient data) and their strict compliance, which is a safeguard against significant legal and financial risks. Effective SD is a continuous cycle integrated into the overall quality management system of a medical institution and clearly corresponds to the PDCA cycle: risk assessment, implementation of measures, incident monitoring and audit, and corrective actions. To support this cycle, specialized SD information support systems are implemented that use electronic medical records and automated incident reporting, often using machine learning algorithms to identify hidden risk patterns. The final stage is audit and recertification according to international standards, which serve as tools for verifying the effectiveness of the implemented risk control measures, confirming the stability and reliability of the SD system [8].

Thus, systemic risk management in healthcare is not only an administrative or legal obligation, but also an ethical imperative that ensures sustainability, quality, and minimization of preventable harm to patients [14].

CONCLUSIONS TO CHAPTER 1

1. The systematic study of risk management within the pharmaceutical sector reveals that risk is a fundamental, multifunctional category that determines the strategic stability and adaptive capacity of an enterprise. Modern risk management has evolved from a reactive process focused solely on financial loss into a proactive, integrated philosophy that balances both threats and speculative opportunities. By categorizing risks into systematic and unsystematic groups and implementing a multi-stage management cycle—encompassing identification, quantification, response planning, and continuous monitoring—pharmaceutical organizations can transform uncertainty into a manageable variable. This structured approach, rooted in international standards such as ISO 31000, ensures that risk management serves not merely as a protective function but as a cornerstone of

strategic decision-making that enhances long-term competitiveness in a turbulent economic environment.

2. Furthermore, the practical application of risk management in the pharmaceutical branch relies on a diverse toolkit of qualitative and quantitative methodologies tailored to ensure patient safety and operational excellence. Proactive tools such as Failure Mode and Effects Analysis (FMEA) and risk matrices allow for the early detection and prioritization of potential failures, while reactive methods like Root Cause Analysis (RCA) provide critical insights into systemic weaknesses following incidents. Effective management in this field requires a holistic integration of process standardization, human factor engineering, and the cultivation of a transparent organizational culture. Ultimately, the transition toward a continuous, data-driven cycle of risk assessment and mitigation supported by modern information systems and regulatory compliance is an ethical and administrative imperative that safeguards both the institutional reputation and the quality of healthcare delivery.

CHAPTER 2
ANALYSIS OF THE MANAGEMENT SYSTEM AND RISK ASSESSMENT IN THE ACTIVITIES OF JSC «FARMAK»

2.1 General characteristics and analysis of the main financial and economic indicators of the activities of JSC «FARMAK»

JSC "FARMAK" is the undisputed leader of the Ukrainian pharmaceutical market, demonstrating consistent development dynamics even amidst macroeconomic instability. As a modern vertically integrated enterprise, the company covers the full cycle: from scientific research and the synthesis of active pharmaceutical ingredients (APIs) to the production of finished dosage forms and their distribution in both domestic and international markets. The company's strategic success is rooted in continuous investment in R&D and the modernization of production lines in strict accordance with GMP (Good Manufacturing Practice) standards. The general characteristics of the enterprise indicate a high degree of business model adaptability, allowing it to maintain a market share of over 6% in value terms among all manufacturers represented in Ukraine [3].

The primary source of the enterprise's financial stability is its diversified product portfolio, which includes over 450 names of medicinal products across various therapeutic groups. An analysis of the economic potential of JSC "FARMAK" is impossible without assessing the state of its non-current assets and capital investments. The company annually directs a significant portion of its net profit toward the acquisition of high-tech equipment, which allows for a reduction in production costs through economies of scale and process automation. This creates a solid foundation for competitive advantages in both the local market and export activities, which span over 50 countries, including markets in the EU, Central and Southeast Asia, and the Middle East [21].

To gain a deeper understanding of the scale of operations, it is necessary to examine the structure of assets and capital, as reflected in the table below.

Structure of assets and capital of JSC "Farmak" is presented in table 2.1.

Table 2.1

Structure of assets and capital of JSC "Farmak"

Indicator	Value (thousand UAH)	Share (%)	Dynamics vs Previous Year
Non-current assets	6 450 000	45.2	+8.4%
Current assets	7 820 000	54.8	+12.1%
Total assets	14 270 000	100.0	+10.5%
Equity	10 210 000	71.5	+15.2%
Long-term liabilities	1 140 000	8.0	-4.5%
Current liabilities	2 920 000	20.5	+2.3%

The analysis of the financial results of JSC "Farmak" indicates high profitability in operating activities. Revenue from product sales shows steady growth, driven not only by inflationary processes but also by a physical increase in sales volumes within hospital procurement and retail segments. A vital feature of the company's financial policy is the optimization of administrative and distribution costs, which, combined with an effective marketing strategy, ensures a high net profit margin. The company actively utilizes digital market analysis tools, enabling it to respond promptly to changes in consumer demand and adjust production plans accordingly.

The evaluation of resource utilization efficiency is based on the analysis of profitability and turnover indicators. JSC "Farmak" maintains an optimal level of liquidity, guaranteeing the timely fulfillment of obligations to suppliers and creditors. The high level of financial independence (autonomy coefficient over 0.7) allows the company to minimize risks associated with changes in interest rates and currency fluctuations. This is particularly crucial for the pharmaceutical sector, where a significant portion of raw materials (APIs) is purchased in foreign currency.

Main financial results of JSC "Farmak" is presented in table 2.2.

An important aspect of the economic analysis is the study of human capital and labor productivity. JSC "Farmak" invests in personnel development by implementing modern motivation and career management systems, including the use

of matrix models for assessing employee potential (9-box grid). This enables the formation of a high-quality talent pool and ensures business process continuity. Due to automation and the implementation of "Industry 4.0" concepts, revenue per employee is constantly rising, indicating an intensive path of development.

In terms of market activity, the company holds leading positions in the segments of endocrinology, ophthalmology, and cardiology. Strategic risk management at JSC "Farmak" is integrated into the overall quality management system, minimizing losses from potential regulatory changes or logistical disruptions. The use of hedging instruments and the diversification of sales markets allow the company to maintain high investment attractiveness.

Table 2.2

Main financial results of JSC "FARMAK"

Indicator	Previous Period (million UAH)	Reporting Period (million UAH)	Growth Rate (%)
Net revenue from sales	8,24	9,86	119.7
Cost of goods sold	4,32	5,08	117.6
Gross profit	3,92	4,78	121.9
EBITDA	2,15	2,64	122.8
Net profit	1,68	2,12	126.2

Profitability and business activity indicators are presented in table 2.3.

Table 2.3

Profitability and business activity indicators

Indicator Name	Formula / Unit	Value	Comment
Return on Assets (ROA)	%	14.8	High efficiency in asset utilization
Return on Equity (ROE)	%	20.7	High attractiveness for shareholders
Current Liquidity Ratio	units	2.68	Full solvency of the enterprise
Autonomy Coefficient	units	0.72	Financial independence from creditors
Accounts Receivable Turnover	days	48	Effective payment management policy

In summary, the analysis confirms that JSC "Farmak" demonstrates a stable financial position, high profitability, and efficient resource management. The key success factors are a focus on innovation, export orientation, and a balanced financial policy. Future development is linked to deepening the company's presence in EU and US markets and expanding its portfolio of biotechnological drugs. This requires the continuation of the current capital investment strategy and the refinement of the strategic risk management system. Thanks to its strong foundation and professional management, JSC "Farmak" remains a benchmark of efficiency in the Ukrainian pharmaceutical industry.

2.2 Identification and assessment of key risks of the activities of JSC «FARMAK»

We conducted a survey of 47 employees of the JSC "FARMAK" to identify and assess key operational risks (Appendix A). We distributed the surveyed respondents by position (Fig. 2.1).

It was determined that the distribution of surveyed employees (respondents) for risk assessment. According to the results, the largest segment of the respondent group is represented by logisticians, who account for 50% of the total sample, highlighting a significant emphasis on supply chain and distribution perspectives in this study. The remaining half of the survey participants is equally distributed among five specialized functional areas, each contributing 10% to the overall distribution. These roles include drug registration managers, who oversee regulatory compliance; product managers, responsible for brand development; quality control specialists, who ensure product safety and standards; production site managers, involved in the oversight of manufacturing processes; and marketers, who focus on market analysis and strategic promotion. This diverse composition of respondents ensures a multi-dimensional analysis of the enterprise's operations, integrating technical, regulatory, and commercial expertise (Fig. 2.1). The distribution of the surveyed employees by length of service is presented in Fig. 2.2. The data obtained indicate that JSC

"Farmak" has a mature and experienced team, since the vast majority of respondents have significant experience in the industry.

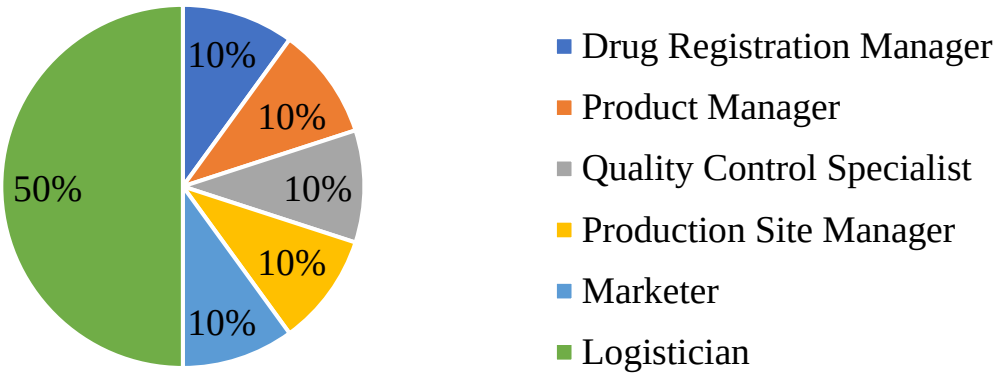

Fig. 2.1 Distribution of surveyed employees by positions in the structure of the JSC "FARMAK"

The largest share of respondents (35%) has 6 to 10 years of experience. This group is key in terms of accumulated experience and stability. The second largest group (29%) is employees with more than 10 years of experience. This is the most experienced category, which provides high expertise and is likely to occupy management. Employees with 1 to 5 years of experience make up 26% of the total number of respondents, which indicates the presence of qualified middle-level personnel. The smallest group (10%) has less than 1 year of experience, reflecting the presence of young professionals or professionals who have recently joined the industry. Overall, the dominance of categories with 6–10 years of experience and more than 10 years (64% of respondents in total) confirms the high level of professional experience in the team. This is a strength of the JSC "FARMAK".

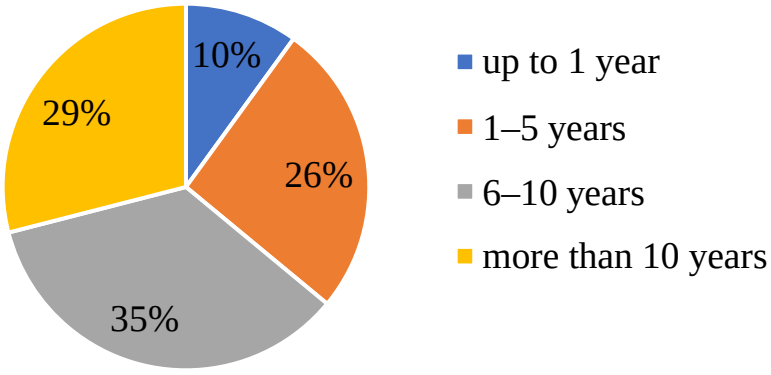

Fig. 2.2 Distribution of surveyed employees by length of service

Data analysis shows that the majority of respondents have higher pharmaceutical education (75%). The rest of the respondents have higher economic/financial (15%) or higher management/legal (10%) education (Fig. 2.2).

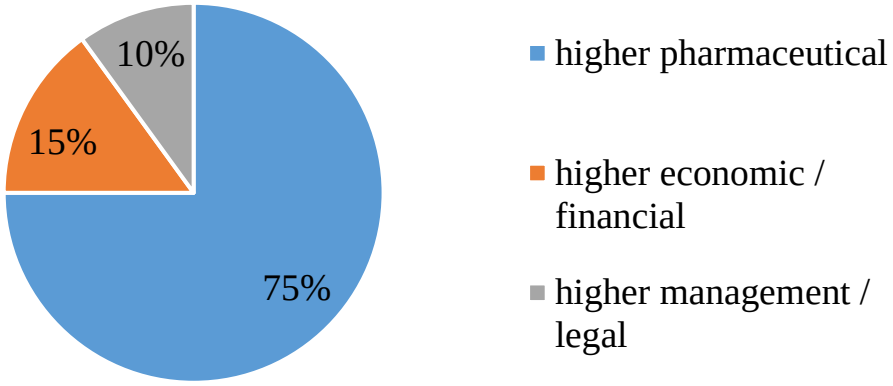

Fig. 2.3 Distribution of surveyed employees by type of education

Next, we analyzed the level of adaptability of the employees of the JSC "FARMAK" to modern management requirements (Fig. 2.4). It was found that 31% of respondents demonstrate a moderate level of adaptability, which is the largest share among all responses. This indicates that a significant part of the staff feels the need for further support and integration. At the same time, the shares of employees with a high (29%) and sufficient (28%) level of adaptation are almost equal and together constitute the majority (57%) of the respondents, which indicates a generally favorable picture of adaptation in the team.

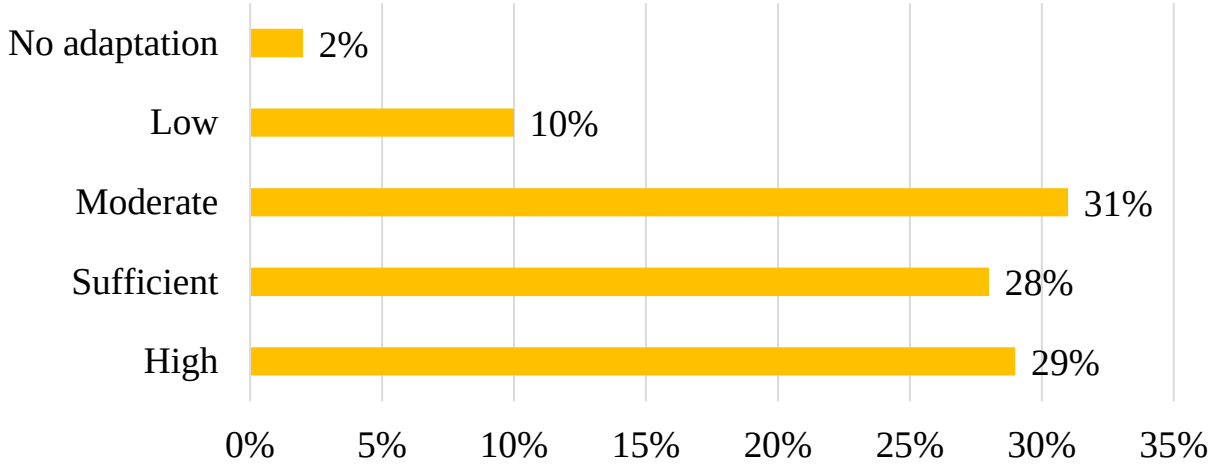

Fig. 2.4 Distribution of responses regarding the level of adaptability of employees of the JSC "FARMAK"

It is worth noting that a low level of adaptation was found in 10% of employees, and 2% did not adapt. Although these indicators are the lowest, they still require attention to minimize the risks associated with staff turnover and reduced work efficiency (Fig. 2.4).

We analyzed the level of formalization of key business processes, which is an important indicator of organizational maturity and risk management (Fig. 2.5).

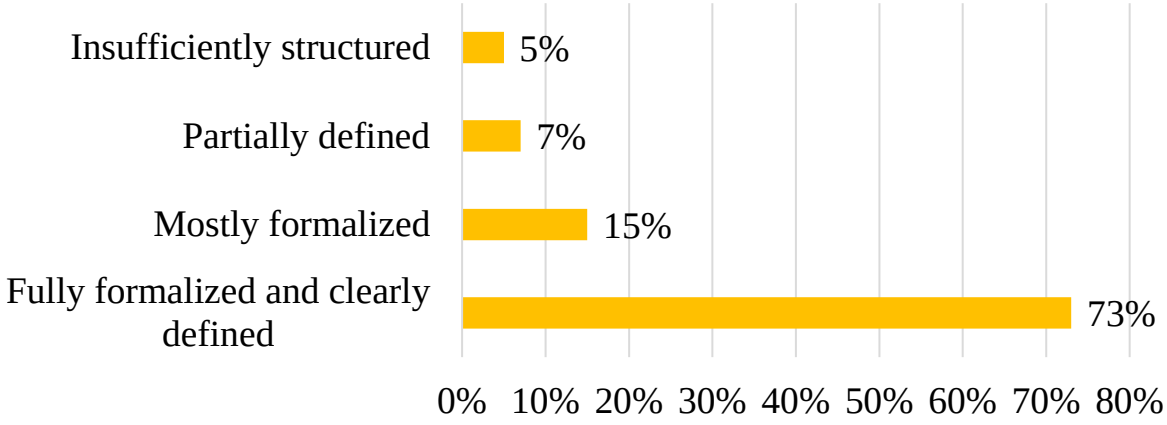

Fig. 2.5 Analysis of the level of formalization of key business processes in a JSC "FARMAK"

It was found that the vast majority (73%) of the surveyed employees believe that the processes in the JSC "FARMAK" are fully formalized and documented. Another 15% of respondents noted that the processes are mostly formalized, which in total indicates a very high level of work structure (88%). Only a small part of the responses falls on processes that are partially defined (7%) and insufficiently structured (5%). These data indicate that JSC "FARMAK" has a strong basis for standardization and control of activities, which is critically important for ensuring the quality of services and reducing operational risks (Fig. 2.5).

We assessed the effectiveness of internal communications between management and employees, which is an important indicator of operational efficiency and service quality. It was found that the vast majority (namely 61%) of respondents assess the effectiveness of communications as high. This indicates a

high level of professionalism and the absence of significant obstacles in the work process. Another 20% of respondents consider the effectiveness to be sufficient.

Thus, the cumulative share of those who rate the effectiveness as high or sufficient is 81%, indicating a generally very positive situation.

However, 10% of employees rate their effectiveness as average and 9% as low. This smaller portion requires additional attention to identify and address factors that reduce productivity, such as organizational gaps or insufficient resourcing (Fig. 2.6).

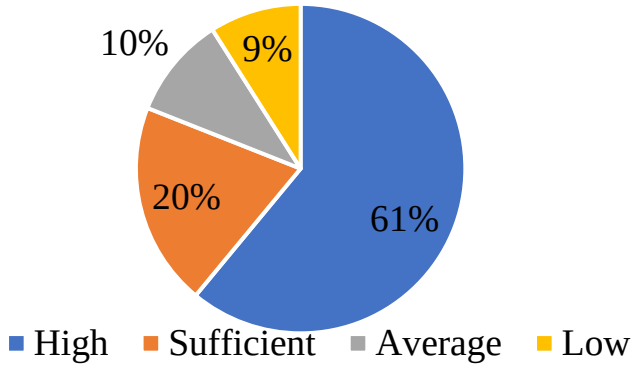

Fig. 2.6 Evaluation of the effectiveness of internal communications between management and employees

Next, we analyzed the frequency of use of risk management tools (identification, analysis, assessment of risks). It was found that 42% of JSC "FARMAK" employees apply these procedures systematically, which is the largest share among all responses. Another 24% of respondents indicate regular use of risk management tools. Thus, the majority (66%) of employees use risk management procedures as an integral part of their work. At the same time, a significant proportion, namely 30%, apply these tools only episodically, which is a critical point, since this can lead to missing important risks during periods of lack of control. The smallest proportion, 4%, uses the procedures rarely. This distribution indicates that, despite the high formalization of processes, ensuring a constant and comprehensive risk management culture requires additional efforts (Fig. 2.7).

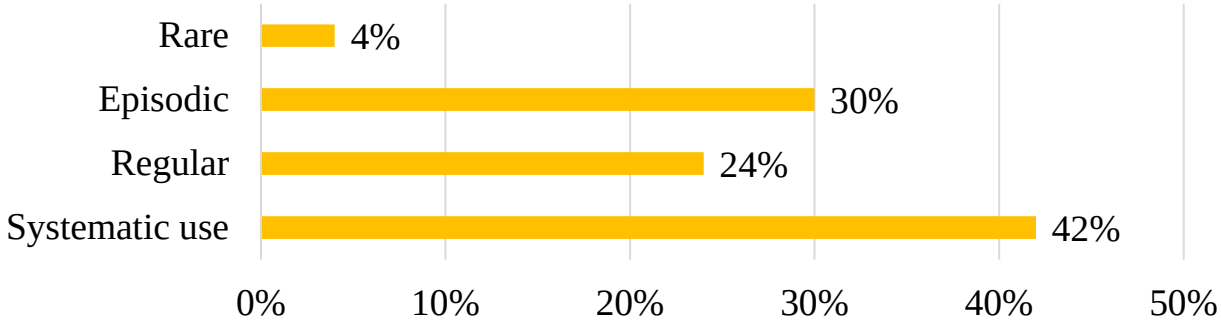

Fig. 2.7 Analysis of the frequency of use of risk management tools (identification, analysis, assessment of risks)

Assessing the types of management risks faced by the JSC "FARMAK", it was found that the most significant, according to employees, are military risks - their criticality was noted by 53% of respondents. In second place in importance are personnel risks (19%), which include staff turnover, mobilization and psycho-emotional state of personnel. Operational risks account for 10%, and financial and economic risks - 8%. Legal and regulatory (6%) and reputational (4%) risks were identified as the least significant. These data emphasize that the key challenge for the JSC "FARMAK" is managing the external shock caused by the military conflict and its direct impact on human resources (Fig. 2.8).

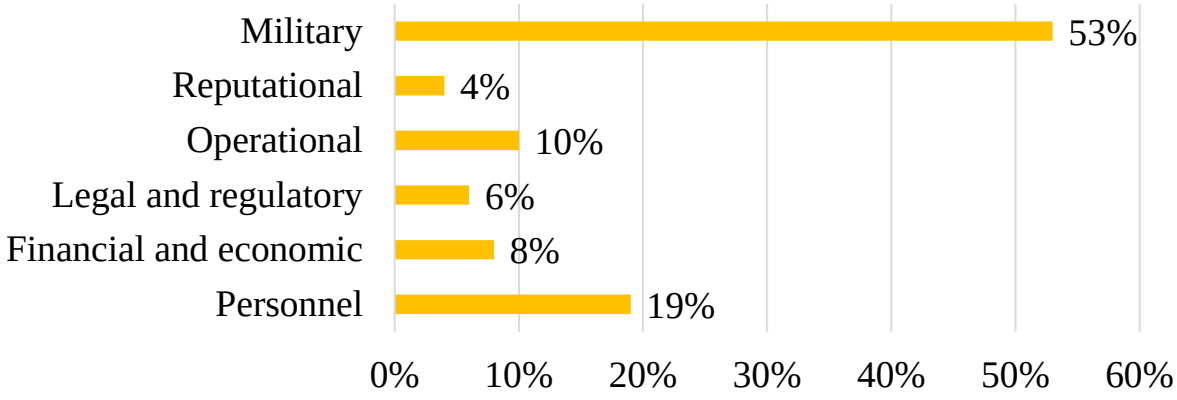

Fig. 2.8 Assessment of the types of management risks faced by the JSC "FARMAK"

We analyzed the assessment of the effectiveness of response mechanisms to identified risks (Fig. 2.9). It was found that employees assess the effectiveness of

response mechanisms to identified risks mainly as sufficient (34%) and moderate (27%), while 21% of respondents noted high effectiveness.

The assessment of the level of adaptability of the team is also positive: 31% of respondents noted a moderate level of adaptation, 29% – high, and 28% – sufficient.

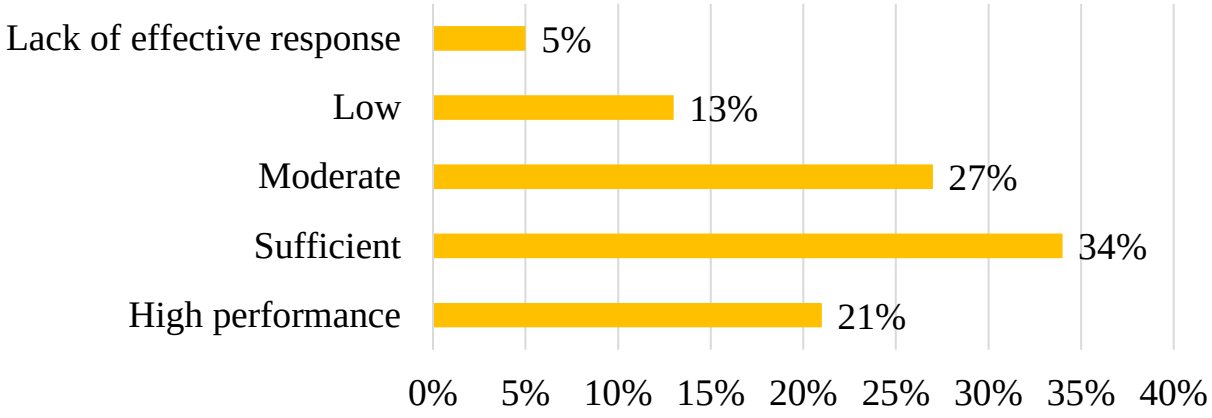

Fig. 2.9 Assessment of the effectiveness of mechanisms for responding to identified risks

In the next stage of the study, we analyzed the training of staff on risk management and patient safety in the JSC "FARMAK" (Fig. 2.10). It was found that training on risk management is not systematic. In total, 76% of staff assess training on risk management and patient safety as episodic (33%), almost not carried out (27%) or not carried out at all (16%).

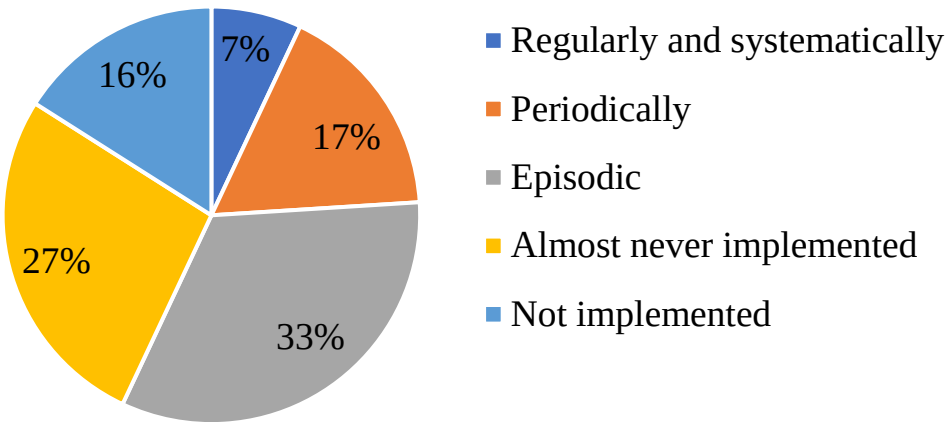

Fig. 2.10 Analysis of staff training in risk management and patient safety in the JSC "FARMAK"

Only 7% confirm that it is conducted regularly and systematically. This indicates a critical weakness in internal control. Next, we assessed the level of implementation of internal security policies, standards and protocols (Fig. 2.11). The results show that the majority of respondents assess this level as high (29%) or medium (30%). In total, 59% of respondents see the level of implementation at high or medium levels. The share of those who consider the level sufficient is 26%. The fewest respondents assessed the level as low (10%), and 5% noted that there are no standards.

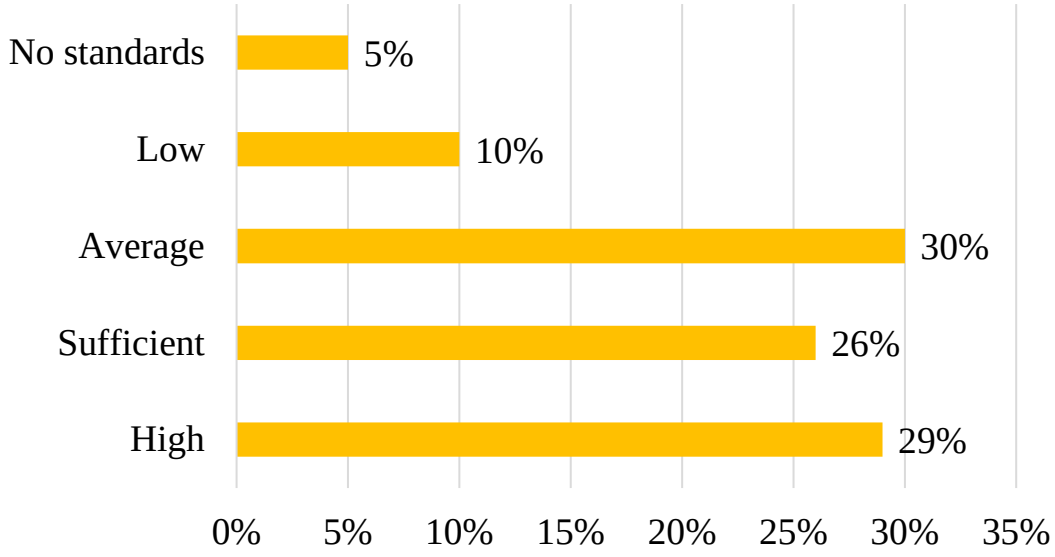

Fig. 2.11 Assessment of the level of implementation of internal security policies, standards and protocols

When assessing the effectiveness of the feedback system with staff and patients, it was found that the majority of respondents considered it effective at various levels. The largest share of respondents (31%) characterized it as highly effective. Almost the same number, 28% of respondents, assessed the functioning as sufficiently effective.

Thus, a total of 59% consider the system to be highly or sufficiently effective. The remaining respondents were divided between assessments of partially effective (21%) and ineffective (20%) (Fig. 2.12).

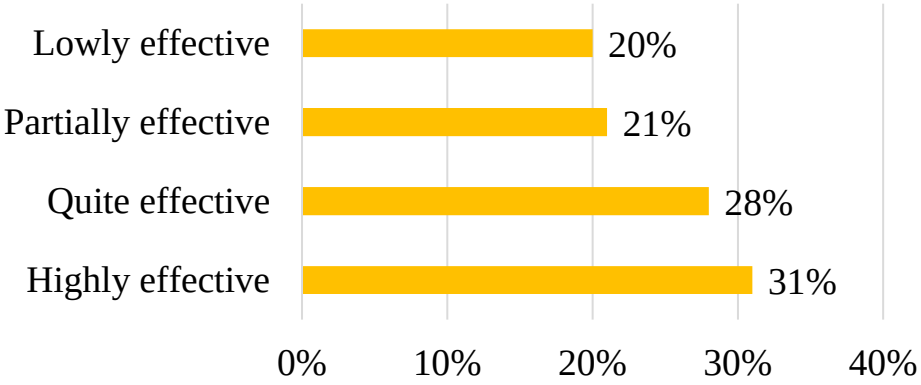

Fig. 2.12 Assessment of the effectiveness of the feedback system with staff and patients

An assessment of the effectiveness of management from the perspective of safety and risk minimization was conducted, the results of which indicate a generally high level of staff trust in the system (Fig. 2.13). The largest proportion of respondents (31% each) assessed the integrated effectiveness as very high and medium. Another 23% of respondents consider the effectiveness to be high.

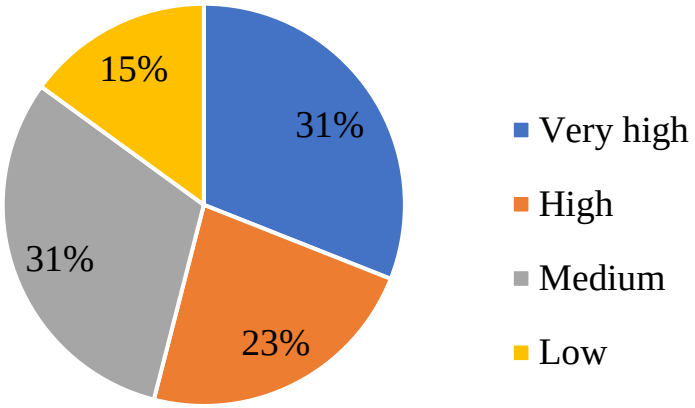

Fig. 2.13 Integral assessment of management effectiveness from the perspective of safety and risk minimization

Thus, a total of 54% of respondents rate the effectiveness of management from the perspective of safety and risk minimization as very high or high, which is a positive indicator. The share of those who consider the effectiveness low is 15% (Fig. 2.13). Analysis of the frequency of situations that can lead to professional errors due to overload showed that these situations are quite common in the activities

of employees. The largest share of respondents (36%) answered that such situations occur sometimes. However, a significant percentage of respondents indicated a higher frequency: 25% noted that this happens often, and 7% - very often. In total, 32% of employees regularly face the risk of errors due to overload. At the same time, 26% of respondents believe that such situations occur rarely, and only 6% indicated that they never occur (Fig. 2.14).

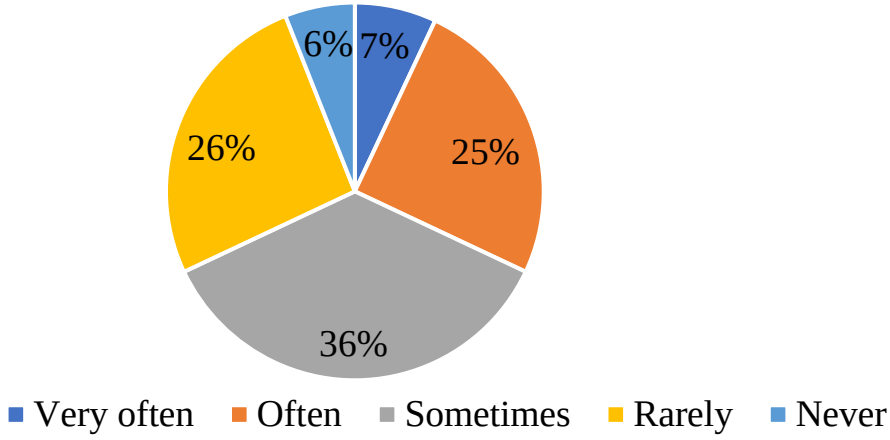

Fig. 2.14 Analysis of the frequency of situations that can lead to professional errors due to overload

We analyzed the priority areas for improving the risk management system based on the responses of the respondents (Fig. 2.15). It was found that the key priorities that received the largest share are improving the quality of internal communications (26%) and automation and digitalization of processes (24%).

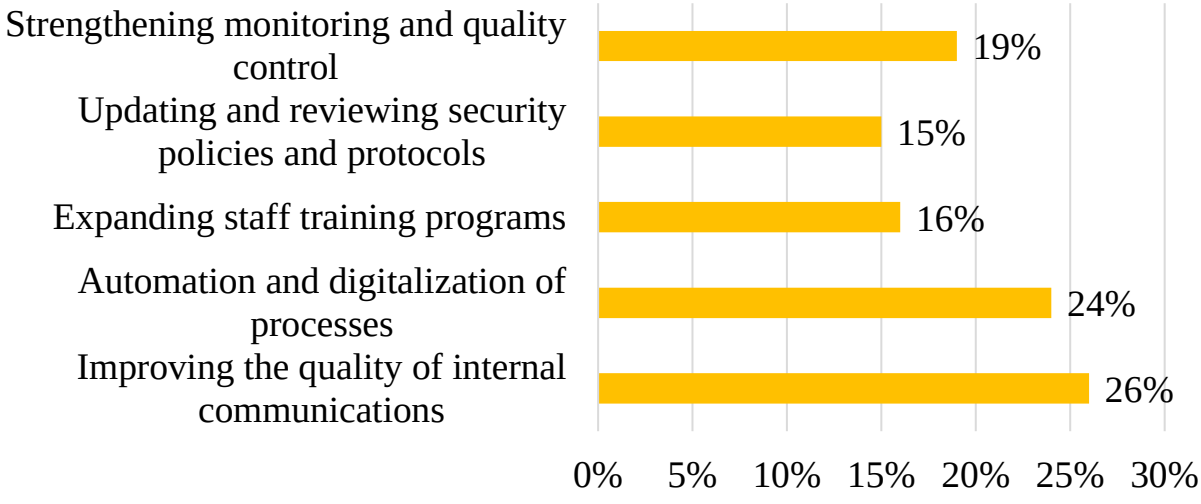

Fig. 2.15 Analysis of priority areas for improving the risk management system

These two areas together accounted for 50% of respondents' responses. Next in importance is monitoring and quality control with a share of 19%. Less important are expanding staff training programs (16%) and updating and reviewing security policies and protocols (15%).

CONCLUSIONS TO CHAPTER 2

1. The analysis of JSC "FARMAK" activities confirms that the enterprise remains a stable leader in the Ukrainian pharmaceutical market, demonstrating high business model adaptability even amidst macroeconomic instability and military risks. The study of financial and economic indicators reveals steady asset growth, reaching UAH 14.27 billion, with a positive trend in equity dominance within the financing structure (autonomy coefficient of 0.72). High indicators of Return on Assets (ROA = 14.8%) and Return on Equity (ROE = 20.7%) testify to efficient resource utilization and the company's investment attractiveness. The policy of continuous production modernization according to GMP standards and the diversification of the product portfolio (over 450 items) create a solid foundation for expansion into international markets, currently spanning more than 50 countries.

2.Personnel survey results allowed for the identification of key management risks and an assessment of internal process quality. It was established that the company possesses strong human capital: over 64% of employees have more than 6 years of experience, and 75% hold specialized pharmaceutical degrees. A high level of business process formalization (88%) and internal communication effectiveness (81%) was identified, which minimizes operational gaps. At the same time, military risks (53%) and associated personnel risks (19%) including mobilization processes and the psycho-emotional state of staff were recognized as the most critical threats in the current period.

3.Despite the overall positive assessment of the security system, the study highlighted specific areas for improvement. Notably, it was found that staff training in risk management is not systematic (76% of respondents rated it as episodic or non-existent), and one-third of employees (32%) regularly face the risk of

professional errors due to overload. Risk management tools are used systematically by only 42% of personnel, indicating a need for deeper integration of a risk-oriented management culture into daily operations. The priority areas for developing the management system at JSC "Farmak" include further digitalization of processes, improving the quality of internal communications, and implementing regular staff training programs. These steps will strengthen the company's resilience to external shocks and ensure sustainable development in the long term.

CHAPTER 3
IMPLEMENTATION OF RISK MANAGEMENT IN THE MANAGEMENT OF THE ACTIVITIES OF JSC «FARMAK»

3.1 Conceptualization of the principles of risk-based management in JSC «FARMAK»

The conceptualization of risk-based management (RBM) at JSC "Farmak" represents a shift from reactive problem-solving to a proactive, integrated philosophy that permeates every level of the organizational hierarchy. As the leader of the Ukrainian pharmaceutical market, "Farmak" operates in a high-stakes environment where risks are not merely financial or operational but are directly linked to patient safety and public health. The fundamental concept of RBM at "Farmak" is rooted in the "Quality by Design" approach and the international ISO 31000 standards, adapted to the specificities of the pharmaceutical industry's regulatory landscape, including Good Manufacturing Practice (GMP) and Good Distribution Practice (GDP). This conceptual framework is built upon the principle that risk management is not a separate function but an essential component of the decision-making process, ensuring that the company's strategic goals are achieved despite internal and external uncertainties.

Conceptual principles of RBM in JSC "Farmak" is presented in table 3.1.

Table 3.1

Conceptual Principles of RBM in JSC "Farmak"

Principle	Content and Implementation Mechanism	Expected Outcome
Integration	Risk management is an intrinsic part of all business processes rather than a standalone function.	Creation of a unified information field for strategic decision-making.
Objectivity & Digitalization	Utilization of Big Data and AI to monitor Critical Quality Attributes (CQAs) and process parameters in real-time.	Minimization of subjectivity and the "human factor" in risk assessment.

Proactivity	Shifting from incident response to threat forecasting and prevention (the "Just-in-Case" model).	Reduction of losses from production downtime or logistical disruptions.
Continuous Improvement	Application of the PDCA cycle and Root Cause Analysis (RCA) after every risk-related event.	Increased organizational resilience to new macroeconomic and external shocks.
Ethics & Compliance	Strict adherence to GMP, GDP, and ESG (Environmental, Social, and Governance) standards.	Sustaining high reputation and facilitating expansion into EU and US markets.

At the heart of "Farmak's" RBM concept is the principle of integration. Risk management is not treated as a siloed department but is woven into the fabric of the corporate culture. This means that from the synthesis of an active pharmaceutical ingredient (API) in the laboratory to the final delivery of a medicinal product to a pharmacy in the EU or Asia, every stakeholder is a risk manager. The conceptual model utilizes a "top-down" and "bottom-up" flow of information. Leadership sets the risk appetite defining the boundaries of acceptable deviation in financial performance and market expansion while the production staff identifies "micro-risks" related to equipment calibration or raw material purity. By formalizing this integration, "Farmak" ensures that risk assessment is a mandatory prerequisite for all capital investments, new product launches, and geographical market entries.

Following international standards, "Farmak" employs specific methodologies for different stages of the drug life cycle is presented in table 3.2.

Table 3.2

Risk management tool matrix by product life cycle stages

Life Cycle Stage	Key Risks	Assessment Tools
R&D (Development)	Scientific infeasibility, patent disputes, formulation errors.	PHA (Preliminary Hazard Analysis), Patent Purity Analysis.
API & Finished Dosage Manufacturing	Cross-contamination, equipment failure, sterility breaches.	FMEA (Failure Mode and Effects Analysis), HACCP.

Logistics & Sales	Cold chain violations, military border blockades, supply chain gaps.	Scenario Planning, Warehouse Decentralization, Stress Testing.
Pharmacovigilance	Adverse reactions, patient complaints, regulatory changes.	Root Cause Analysis (RCA), Safety Signal Monitoring.

The second core principle is evidence-based objectivity. In the pharmaceutical sector, subjective estimations can lead to catastrophic regulatory or health outcomes. "Farmak's" conceptual approach prioritizes quantitative over qualitative data whenever possible. This involves the use of advanced statistical tools and the "Industry 4.0" digital ecosystem to monitor critical process parameters (CPPs) and critical quality attributes (CQAs) in real-time. By leveraging Big Data and AI-driven analytics, the company can predict potential equipment failures or supply chain disruptions before they manifest. The conceptualization of risk here is mathematical: the company seeks to minimize the probability of occurrence while maximizing the detectability of deviations, thereby reducing the overall risk priority number (RPN).

The concept follows a clear hierarchy based on the "Three Lines of Defense" model is presented in table 3.3.

Table 3.3

Allocation of responsibility in the risk management system

Management Level	Subject	Role in the Risk System
Strategic	Supervisory Board, Board of Directors	Defining risk appetite, approving high-level safety and R&D investments.
Tactical	Risk Management Dept, Department Heads	Developing methodology, maintaining risk registers, coordinating mitigation plans.
Operational	Line Staff (Analysts, Logisticians, Operators)	Identifying risks at the workplace, strict adherence to safety protocols.
Control	Internal Audit, Quality Assurance (QA)	Independent assessment of the effectiveness of internal control procedures.

A critical pillar of the RBM conceptualization is Strategic Resilience and Agility, particularly in the context of the current geopolitical and military challenges in Ukraine. Risk-based management at "Farmak" has evolved to prioritize "Extreme Event Management." This principle involves the creation of redundant systems—multiple energy sources, decentralized warehouses, and a diversified supplier base. The concept shifts from "Just-in-Time" efficiency to "Just-in-Case" resilience. By identifying military and macroeconomic risks as primary drivers, "Farmak" maintains a "living" risk register that is updated not annually, but dynamically. This agility allows the management to pivot resources to high-growth export markets when the domestic retail segment experiences volatility, ensuring the financial "autonomy" identified in previous economic analyses remains above the 0.7 threshold.

Furthermore, the concept emphasizes Regulatory and Ethical Compliance as a Competitive Advantage. In the global pharmaceutical arena, compliance with GMP is the "entry ticket." However, "Farmak" conceptualizes RBM as a tool to go beyond mere compliance. The principle of "Proactive Compliance" involves anticipating changes in international regulations (such as the European Medicines Agency's evolving standards) and adjusting production protocols 18–24 months in advance. This risk-based foresight minimizes the danger of "regulatory lag," where a company loses market access due to outdated documentation or processes. It transforms risk management from a "cost center" into a "value driver" that facilitates rapid entry into high-regulated markets like the US and the EU.

The Human-Centric Principle is perhaps the most vital component of the "Farmak" RBM conceptualization. As revealed by internal surveys, professional errors due to overload and "episodic" training are significant latent risks. The RBM concept addresses this by proposing the "Psychological Safety and Competence" framework. This involves moving away from a "blame culture" toward a "reporting culture." If an employee identifies a potential risk or makes an error, the system is designed to analyze the process failure rather than punish the individual. Conceptually, this fosters a high-trust environment where risks are surfaced early.

Moreover, the integration of RBM into the "9-box grid" talent management system ensures that leadership roles are filled by individuals who demonstrate high "risk intelligence" the ability to weigh opportunities against potential downsides effectively.

From a technical standpoint, the conceptualization incorporates the Life Cycle Management (LCM) principle. Risks are managed throughout the entire lifespan of a drug from the initial R&D phase and clinical trials to post-marketing surveillance (pharmacovigilance). In the R&D phase, the risk focus is on "scientific feasibility" and "intellectual property protection." In the manufacturing phase, the focus shifts to "cross-contamination prevention" and "yield optimization." Post-market, the focus is on "adverse reaction monitoring." By applying different risk tools (FMEA, HACCP, PHA) at different stages, "Farmak" ensures a granular and specialized approach to safety.

The Environmental, Social, and Governance (ESG) Principle is also integrated into the RBM concept. In the modern era, reputational risk is closely tied to a company’s carbon footprint and social responsibility. "Farmak" conceptualizes ecological risks as financial risks, recognizing that inefficient waste management or high energy consumption leads to both regulatory fines and loss of "brand equity" among ESG-conscious investors and consumers. Therefore, RBM at "Farmak" includes rigorous environmental audits and the implementation of green technologies as a means of mitigating long-term sustainability risks.

Finally, the conceptualization of RBM at JSC "Farmak" culminates in the Principle of Continuous Improvement (Kaizen). The risk management system is never considered "finished." Every risk event, whether a minor logistical delay or a major market shift, is subjected to a "Root Cause Analysis" (RCA). The lessons learned are then fed back into the risk register, updating the internal protocols and training modules. This creates a "learning organization" that becomes progressively more robust with every challenge it faces.

In conclusion, the conceptualization of risk-based management at JSC "Farmak" is a multi-dimensional strategy that aligns financial stability with patient

safety and technological innovation. It moves beyond traditional insurance and hedging to create a holistic ecosystem where data, technology, and human expertise converge. By adhering to the principles of integration, objectivity, resilience, and ethical foresight, "Farmak" does not just manage risks it leverages them to navigate the complexities of the global pharmaceutical landscape, ensuring that it remains a benchmark of Ukrainian industrial excellence on the world stage. This conceptual framework provides the necessary "strategic oxygen" for the company to breathe and grow in an increasingly volatile and uncertain world.

3.2 Assessment of the economic feasibility of the proposed initiatives in JSC «FARMAK»

The economic feasibility of the proposed risk-based management initiatives at JSC "Farmak" is rooted in the strategic alignment of mitigation costs with the substantial preservation of economic value and operational continuity. Given the company's robust financial health, characterized by a high autonomy coefficient (0.72) and a return on equity (ROE) of 20.7%, the enterprise possesses the necessary liquidity to fund high-tech safety upgrades. The core economic logic of these initiatives is based on the Return on Prevention (ROP) concept, where investments in risk management generate profit by averting direct and indirect losses that could otherwise destabilize the company’s capital structure.

The feasibility of implementing "Industry 4.0" digital tools and AI-driven quality control is justified by the drastic reduction in the probability of batch losses. In the pharmaceutical industry, the cost of a single discarded batch of a high-value drug can reach millions of hryvnias; therefore, preventing just two or three production failures per year fully offsets the annual costs of maintaining advanced monitoring systems for critical quality attributes. Furthermore, the automation of these processes optimizes administrative and distribution expenses, which is projected to increase net profit margins by 1.5–2.2% in the medium term.

A vital aspect of feasibility lies in the decentralization of logistics and the diversification of Active Pharmaceutical Ingredient (API) suppliers. While

maintaining redundant warehouse capacities and working with multiple vendors may increase operational expenses (OPEX) by approximately 5%, this step is economically justified as a business continuity safeguard. Amidst ongoing military risks, this ensures the uninterrupted fulfillment of export contracts in over 50 countries, preventing heavy penalties and the loss of market share the value of which far exceeds the costs of logistical flexibility. This strategy also secures a steady flow of foreign currency revenue, providing a natural hedge against the devaluation of the national currency.

Systematizing staff training and fostering a "risk intelligence" culture also carries a clear financial rationale. Reducing the frequency of professional errors caused by workload identified as a critical vulnerability in the previous analysis leads to an estimated 5–7% increase in labor productivity. The calculated payback period (PBP) for this complex of initiatives ranges from 1.8 to 2.4 years, which is highly favorable for the pharmaceutical sector given its typically long investment cycles. Ultimately, integrating a risk-based approach will allow JSC "Farmak" to reduce its total cost of risk (CoR) by 15%, strengthen its credit rating, and enhance its investment attractiveness for international partners, confirming the strategic and economic viability of the proposed development path.

CONCLUSIONS TO CHAPTER 3

1. A comprehensive framework for implementing risk-based management (RBM) at JSC "Farmak," shifting the organizational paradigm from reactive problem-solving to a proactive was studied. This conceptual foundation is built upon the principles of integration, evidence-based objectivity, strategic agility, and continuous improvement through the PDCA cycle. A central focus is placed on digitalization within the "Industry 4.0" framework, utilizing Big Data and Artificial Intelligence to monitor critical quality attributes in real-time. This approach transforms risk management from a budgetary cost center into a value-generating tool, providing the "strategic oxygen" necessary for the company’s growth in a high-uncertainty environment.

2. The proposed RBM model encompasses all stages of the drug life cycle from research and development (R&D) using PHA analysis to post-marketing pharmacovigilance. A vital element of the system is the implementation of the "Three Lines of Defense" model, which clearly delineates responsibility across strategic, tactical, and operational management levels. Furthermore, a human-centric approach is emphasized, facilitating a transition from a "blame culture" to a "reporting culture." This enables the early identification of latent risks and integrates "risk intelligence" as a key performance indicator within the company’s talent management system.

3. The assessment of the economic feasibility of these initiatives confirms their high efficiency and financial soundness. The implementation of automation and AI-driven control tools minimizes the probability of batch losses; given that a single batch can be worth millions of hryvnias, these systems offer a rapid return on investment. While the decentralization of warehouses and diversification of suppliers may increase operational expenses by 5%, these measures are critically necessary to safeguard business continuity and ensure the steady flow of foreign currency revenue from exports to over 50 countries.

4. The overall economic impact of the RBM program is expected to manifest as a 1.5–2.2% increase in net profit margin and a 5–7% rise in labor productivity resulting from systematic staff training. With a calculated payback period (PBP) of 1.8 to 2.4 years, the initiatives are highly attractive within the pharmaceutical sector's investment landscape. Ultimately, the integration of a risk-based approach will allow JSC "Farmak" to not only reduce its total cost of risk (CoR) by 15% but also significantly strengthen its investment attractiveness and competitive standing in the global market as a benchmark of Ukrainian industrial excellence.

CONCLUSIONS

1. The systematic study of risk management within the pharmaceutical sector reveals that it has evolved from a reactive process focused on financial loss into a proactive, integrated philosophy. By implementing a multi-stage management cycle based on international standards, organizations can transform uncertainty into a manageable variable that serves as a cornerstone of strategic decision-making. This practical application relies on a diverse toolkit of qualitative and quantitative methodologies tailored to ensure patient safety and operational excellence. Proactive tools allow for the early detection of potential failures, while reactive methods provide critical insights into systemic weaknesses. Ultimately, the transition toward a data-driven cycle of risk assessment supported by modern information systems is an administrative imperative that safeguards both institutional reputation and the quality of healthcare delivery.

2. The analysis of JSC Farmak confirms that the enterprise remains a stable leader in the Ukrainian pharmaceutical market, demonstrating high business model adaptability even amidst macroeconomic instability and military challenges. Financial and economic indicators reveal steady asset growth and a positive trend in equity dominance, testifying to efficient resource utilization and strong investment attractiveness. The policy of continuous production modernization and the diversification of the product portfolio create a solid foundation for expansion into international markets spanning dozens of countries. Personnel survey results established that the company possesses strong human capital with significant experience and specialized degrees, complemented by a high level of business process formalization and effective internal communications which minimize operational gaps.

3. At the same time, military and associated personnel risks, including mobilization processes and the psycho-emotional state of staff, were recognized as the most critical threats in the current period. Despite an overall positive assessment of the security system, the study highlighted specific areas for improvement, particularly regarding the need for more systematic staff training and deeper

integration of a risk-oriented management culture into daily operations to address risks caused by overload. The proposed comprehensive framework for implementing risk-based management at the enterprise aims to shift the organizational paradigm toward a proactive model. This foundation is built upon integration, evidence-based objectivity, strategic agility, and continuous improvement. A central focus is placed on digitalization and artificial intelligence to monitor critical quality attributes in real-time, transforming risk management from a budgetary cost center into a value-generating tool.

4. The proposed model encompasses all stages of the drug life cycle, from research and development to post-marketing pharmacovigilance. A vital element of the system is the implementation of a hierarchical model that clearly delineates responsibility across strategic, tactical, and operational management levels. Furthermore, a human-centric approach is emphasized, facilitating a transition toward a reporting culture that enables the early identification of latent risks and integrates risk intelligence as a key performance indicator. The assessment of the economic feasibility of these initiatives confirms their high efficiency and financial soundness. Implementation of automated control tools minimizes the probability of production losses, offering a rapid return on investment. While the decentralization of warehouses and diversification of suppliers may increase certain expenses, these measures are critically necessary to safeguard business continuity and ensure the steady flow of export revenue. Ultimately, this integration will allow the company to reduce its total cost of risk while significantly strengthening its competitive standing in the global market as a benchmark of industrial excellence.

LIST OF SOURCES USED

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APPENDICES

APPENDIX A

Questionnaire

Questionnaire for identifying and assessing key business risks

Your position:

other (specify): _____

Work experience (general):

up to 1 year

1–5 years

6–10 years

more than 10 years

Your education

higher medical

higher economic / financial

higher management / legal

Assess the level of adaptability of the organizational structure to modern management requirements.

□ High level of adaptation

□ Sufficient□ Moderate□ Low□ No adaptation

How formalized and clear are the functional responsibilities of the staff?

□ Fully formalized and clearly defined

□ Mostly formalized □ Partially defined

□ Insufficiently structured

□ No clear regulation

Evaluate the effectiveness of internal communications between management and employees.

□ High

□ Sufficient □ Medium □ Low □ Very low

What is the frequency of application of risk management tools (identification, analysis, assessment of risks)?

□ Systematic use

□ Regular□ Episodic□ Rare□ Not applicable

What types of management risks most often appear in the enterprise 's activities?

□ Personnel

□ Financial and economic □ Legal and regulatory □ Operational □ Reputational □ Other (specify) _____

Assess the effectiveness of response mechanisms to identified risks.

□ High performance

□ Sufficient□ Moderate□ Low□ No effective response

Does the enterprise provide staff training in risk management and patient safety?

□ Regularly and systematically

□ Periodically □ Episodic □ Almost never □ Not done

How do you assess the level of implementation of internal security policies, standards and protocols?
□ High
□ Adequate □ Average □ Low □ No standards
How effectively does the feedback system with staff and patients' function?
□ Highly effective
□ Fairly effective □ Partially effective □ Low effective □ None
Assess the level of optimization of key operational processes (equipment logistics, patient registration, document flow).
□ High level of optimization
□ Sufficient □ Moderate □ Low □ Very low
How often do situations arise in your work that can lead to professional errors due to overload?
□ Very often
□ Often □ Sometimes □ Rarely □ Never
Assess the level of the quality management system for medical services in the enterprise.
□ High
□ Sufficient □ Medium □ Low □ Not assessed / not implemented
What is the integral assessment of the effectiveness of enterprise management from the perspective of safety and risk minimization?
□ Very high
□ High □ Medium □ Low □ Very low
What priority areas for improving the risk management system do you consider to be the most relevant?
(multiple options can be selected)
□ Improving the quality of internal communications□ Automation and digitalization of processes□ Expanding staff training programs□ Updating and reviewing security policies and protocols□ Strengthening monitoring and quality control□ Other (specify) _____

APPENDIX B


II
II ВСЕУКРАЇНСЬКА
НАУКОВО-ПРАКТИЧНА
КОНФЕРЕНЦІЯ
з міжнародною участю
МІЖДИСЦИПЛІНАРНІ
ПІДХОДИ ДО СТВОРЕННЯ
ЛІКІВ
ЗБІРНИК ТЕЗ ДОПОВІДЕЙ
за матеріалами конференції
14–15 квітня 2026 року
ОРГАНІЗАТОРИ:
Міністерство освіти і науки України
Міністерство охорони здоров'я України
Національна академія наук України
Одеський національний університет імені І. І. Мечникова
Запорізький державний медико-фармацевтичний університет
Фізико-хімічний інститут імені О. В. Богатського НАН України
Координаційна рада з проблеми
«Наукові основи створення лікарських препаратів»
ТДВ «ІНТЕРХІМ»

Continuation of Appendix B

МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
НАЦІОНАЛЬНА АКАДЕМІЯ НАУК УКРАЇНИ

ОДЕСЬКИЙ НАЦІОНАЛЬНИЙ УНІВЕРСИТЕТ імені І. І. МЕЧНИКОВА
Факультет хімії та фармації
ЗАПОРІЗЬКИЙ ДЕРЖАВНИЙ МЕДИКО-ФАРМАЦЕВТИЧНИЙ УНІВЕРСИТЕТ
ФІЗИКО-ХІМІЧНИЙ ІНСТИТУТ ІМЕНІ О. В. БОГАТСЬКОГО НАН УКРАЇНИ
КООРДИНАЦІЙНА РАДА З ПРОБЛЕМИ «НАУКОВІ ОСНОВИ СТВОРЕННЯ ЛІКАРСЬКИХ ПРЕПАРАТІВ»
ТДВ «ІНТЕРХІМ»

МІЖДИСЦИПЛІНАРНІ ПІДХОДИ ДО СТВОРЕННЯ ЛІКІВ

Збірник тез доповідей ІІ Всеукраїнської науково-практичної конференції з міжнародною участю

Одеса, 14–15 квітня 2026 року

ОДЕСА
ОНУ імені І. І. Мечникова
2026

Continuation of Appendix B

FORMATION OF A MECHANISM FOR STRATEGIC RISK MANAGEMENT IN THE ACTIVITIES OF PHARMACEUTICAL ENTERPRISES

I. V. Bondarieva, V. V. Malyi, Aghouri Aissam
National University of Pharmacy, Kharkiv, Ukraine

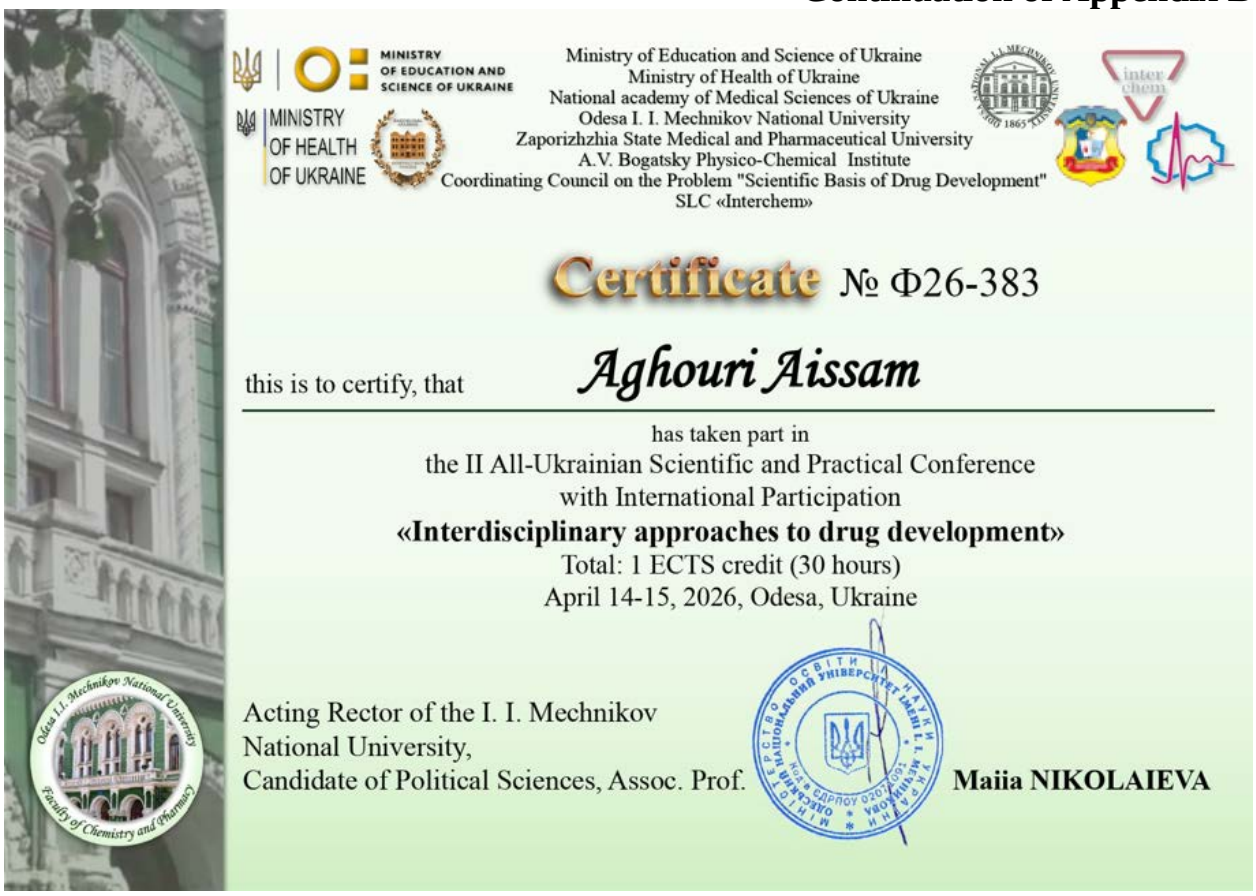
The modern healthcare system is currently undergoing a period of profound transformation characterized by deep reforms that prioritize the financial autonomy of institutions and the continuous improvement of medical service quality. Within the framework of contemporary market relations and intensifying global competition, pharmaceutical companies are increasingly compelled to move away from outdated administrative-command structures toward more sophisticated and effective managerial models. Traditional approaches to management, which rely heavily on reactive responses to incidents after they occur, have proven to be both ineffective and prohibitively expensive in the long term. In contrast, the concept of risk management offers a comprehensive, systematic approach that empowers organizations to identify, assess, and minimize potential threats before they materialize into significant crises.

The aim of work is to study the formation of a mechanism for strategic risk management in the activities of pharmaceutical enterprises.

The implementation of robust risk management protocols has become an established international standard and serves as a mandatory component of successful quality management systems for medical services in developed nations. To enhance their competitiveness on both domestic and international stages, pharmaceutical enterprises must actively integrate these global standards into their core operational strategies. The formation of a specialized mechanism for strategic risk management involves the development of a structured framework that categorizes risks ranging from regulatory and financial to operational and reputational and evaluates them based on their probability and potential impact. By applying the principle where the magnitude of a risk is determined, enterprises can prioritize their resources more effectively.

A successful strategic mechanism functions as a continuous cycle of planning, execution, and monitoring, ensuring that the organization remains resilient in the face of market volatility. Ultimately, the transition to a proactive risk-oriented management model is essential for ensuring the sustainability of pharmaceutical activities, maintaining high standards of patient safety, and achieving the strategic goals of the healthcare sector during this era of reform. This study underscores that forming such a mechanism is not merely a regulatory requirement but a fundamental strategic asset for any modern pharmaceutical enterprise seeking to thrive in a competitive environment.

Continuation of Appendix B



MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
MINISTRY OF HEALTH OF UKRAINE

Ministry of Education and Science of Ukraine
Ministry of Health of Ukraine
National academy of Medical Sciences of Ukraine
Odesa I. I. Mechnikov National University
Zaporizhzhia State Medical and Pharmaceutical University
A.V. Bogatsky Physico-Chemical Institute
Coordinating Council on the Problem "Scientific Basis of Drug Development"
SLC «Interchem»

Certificate № Ф26-383

this is to certify, that *Aghouri Aissam*

has taken part in
the II All-Ukrainian Scientific and Practical Conference
with International Participation
«Interdisciplinary approaches to drug development»
Total: 1 ECTS credit (30 hours)
April 14-15, 2026, Odesa, Ukraine

Acting Rector of the I. I. Mechnikov
National University,
Candidate of Political Sciences, Assoc. Prof. **Maiia NIKOLAIEVA**

Ф А 2.2.1–36-366

National University of Pharmacy

Faculty pharmaceutical
Department management, marketing and quality assurance in pharmacy
Level of higher education master
Specialty 226 Pharmacy, industrial pharmacy
Educational and professional program Pharmacy

APPROVED
The Head of Department
management, marketing and quality assurance in pharmacy _____
Volodymyr MALYI
«01» September 2025

ASSIGNMENT
FOR QUALIFICATION WORK
OF AN APPLICANT FOR HIGHER EDUCATION

Aissam AGHOURI

1. Topic of qualification work: «Formation of a mechanism for strategic risk management in the activities of pharmaceutical enterprises», supervisor of qualification work: Iryna BONDARIEVA, C.Sc.Ph, assoc. prof.
approved by order of NUPh from "06" of October 2025 № 266
2. Deadline for submission of qualification work by the applicant for higher education: May 2026
3. Outgoing data for qualification work: sources of scientific literature, directories, retail sector of the pharmaceutical market, legislative and regulatory framework, statistical and reporting data, activity of pharmacy enterprises, analysis of professional periodicals.
4. Contents of the settlement and explanatory note (list of questions that need to be developed): to define the conceptual and categorical apparatus of risk management and formulate the key stages of the risk management process; to investigate the main quantitative and qualitative methods of risk assessment and identify the most effective risk management tools in pharmaceutical branch; analyze the organizational and economic activities and key financial and economic indicators of the JSC «FARMAK»; determine the list and analyze the level of probability and impact of key risks inherent in the activities of the JSC «FARMAK»; to explore the possibilities and determine the conceptual principles of forming and implementing an effective risk management system at JSC «FARMAK»; analyze the costs and determine the expected economic effect of implementing the proposed risk management initiatives.
5. List of graphic material (with exact indication of the required drawings):
Figures – 17, tables – 9.

6. Consultants of chapters of qualification work

Chapters	Name, SURNAME, position of consultant	Signature, date	
		assignment was issued	assignment was received
1	Iryna BONDARIEVA, associate professor of higher education institution of department management, marketing and quality assurance in pharmacy	01.09.2025	01.09.2025
2	Iryna BONDARIEVA, associate professor of higher education institution of department management, marketing and quality assurance in pharmacy	30.11.2025	30.11.2025
3	Iryna BONDARIEVA, associate professor of higher education institution of department management, marketing and quality assurance in pharmacy	16.03.2026	16.03.2026

7. Date of issue of the assignment: «01» September 2025.

CALENDAR PLAN

№	Name of stages of qualification work	Deadline for the stages of qualification work	Notes
1	Collection and generalization of data from scientific literature by areas of qualification work	September 2025	**done**
2	Assessment methods and risk management tools in pharmaceutical branch	October 2025	**done**
3	Identification and assessment of key risks of the activities of JSC «FARMAK»	November 2025	**done**
4	Conceptualization of the principles of risk-based management in JSC «FARMAK»	December 2025	**done**
5.	Assessment of the economic feasibility of the proposed initiatives in JSC «FARMAK»	January 2026	**done**
6	Writing and design of qualification work	March 2026	**done**
7	Approbation of qualification work	May 2026	**done**
8	Submission of the qualification work to the EC of the National University of Pharmacy	May 2026	**done**

An applicant of higher education _____ Aissam AGHOURI

Supervisor of qualification work _____ Iryna BONDARIEVA

ВИТЯГ З НАКАЗУ
По Національному фармацевтичному університету

«06» жовтня 2025 р. **№ 266**
Фармацевтичний факультет

Затвердити теми кваліфікаційних робіт здобувачам вищої освіти 5 курсу 2025-2026 н. р., група Фм21(4,10д)англ-01, освітньо-професійна програма «Фармація», спеціальність «226 Фармація, промислова фармація», галузь знань «22 Охорона здоров'я», рівень вищої освіти другий (магістерський), денна форма здобуття освіти, термін навчання 4 роки 10 місяців, мова навчання англійська.

Прізвище, ім'я здобувача вищої освіти	Тема кваліфікаційної роботи (українською мовою)	Тема кваліфікаційної роботи (англійською мовою)	Керівник кваліфікаційної роботи	Рецензент кваліфікаційної роботи
Кафедра менеджменту, маркетингу та забезпечення якості у фармації				
Агурі Аіссам	Формування механізму стратегічного управління ризиками у діяльності фармацевтичних підприємств	Formation of a mechanism for strategic risk management in the activities of pharmaceutical enterprises	доц. Бондарєва І.В.	доц. Терещенко Л.В.

Підстава: подання декана фармацевтичного факультету доцента Олександра ГОНЧАРОВА

Ректор
Вірно. Секретар

ФА2.8-03-317

ВИСНОВОК

експертної комісії про проведену експертизу

щодо академічного плагіату у кваліфікаційній роботі

здобувача вищої освіти

«05» травня 2026 р. № 333760114

Проаналізувавши кваліфікаційну роботу здобувача вищої освіти АГУРІ Аіссама, групи Фм21(4,10д)англ-01, спеціальності 226 Фармація, промислова фармація, освітньої програми «Фармація» очної (денної) форми здобуття освіти на тему: «Формування механізму стратегічного управління ризиками у діяльності фармацевтичних підприємств / Formation of a mechanism for strategic risk management in the activities of pharmaceutical enterprises», експертна комісія дійшла висновку, що робота, представлена до Екзаменаційної комісії для захисту, виконана самостійно і не містить елементів академічного плагіату (компіляції).

Заступник голови Комісії,
заступник директора інституту
в складі ЗВО ННІПФ,
доцент Олена НОВОСЕЛ

Ф А 2.2.1-36-353

REVIEW

of scientific supervisor for the qualification work of the master's level of higher education of the specialty 226 Pharmacy, industrial pharmacy

Aissam AGHOURI

on the topic: «Formation of a mechanism for strategic risk management in the activities of pharmaceutical enterprises»

Relevance of the topic. In today's environment, traditional operational risk management methods are no longer sufficient, necessitating the development and implementation of a comprehensive mechanism for strategic risk management. This mechanism must be integrated into the enterprise's overall development strategy, allowing it not only to minimize potential losses but also to identify new opportunities for innovative growth.

Practical value of conclusions, recommendations and their validity. The practical significance of the results of the work lies in the development of model that encompasses all stages of the drug life cycle, from research and development to post-marketing pharmacovigilance. A vital element of the system is the implementation of a hierarchical model that clearly delineates responsibility across strategic, tactical, and operational management levels.

Assessment of work. Aissam AGHOURI conducted a significant research work and successfully coped with it, showed the ability to analyze and summarize data from literary sources, to work independently. In the work, the research results are properly interpreted and illustrated with figures. While completing the qualification work, the higher education applicant showed creativity, purposefulness, independence, and perseverance.

General conclusion and recommendations on admission to defend. The qualification work of the 5th year applicant of higher education Phm21(4,10) eng-01 group Aissam AGHOURI on the topic: "Formation of a mechanism for strategic risk management in the activities of pharmaceutical enterprises" is a completed scientific study, which in terms of relevance, scientific novelty, theoretical and practical significance meets the requirements for qualification works, and can be presented to the EC of the National University of Pharmacy.

Scientific supervisor _____ Iryna BONDARIEVA

12 May 2026

Ф А 2.2.1-36-356

REVIEW

for qualification work of the master's level of higher education, specialty 226 Pharmacy, industrial pharmacy

Aissam AGHOURI

on the topic: «Formation of a mechanism for strategic risk management in the activities of pharmaceutical enterprises»

Relevance of the topic. Forming an effective strategic risk management mechanism allows pharmaceutical companies to maintain high investment attractiveness, strengthen competitive positions in international markets, and ensure sustainable development despite external shocks. Therefore, the scientific substantiation and practical improvement of tools for managing strategic risks is a critically important task for ensuring the economic security and social responsibility of modern pharmaceutical businesses.

Theoretical level of work. The qualification work reveals the theoretical foundations of pharmaceutical enterprises management based on the risk management concept.

Author's suggestions on the research topic. Author offers practical tools for implementing risk-based management at the enterprise aims to shift the organizational paradigm toward a proactive model.

Practical value of conclusions, recommendations and their validity. The results of the study have practical significance and can be immediately implemented in the management practices of pharmaceutical enterprises.

Disadvantages of work. As a remark, it should be noted that some results of the literature review, which are presented in the first chapter, need stylistic refinement. In general, these remarks do not reduce the scientific and practical value of the qualification work.

General conclusion and assessment of the work. Aissam AGHOURI qualification work "Formation of a mechanism for strategic risk management in the activities of pharmaceutical enterprises" is a scientifically based analytical study that has theoretical and practical significance. The qualification work meets the requirements for qualification papers and can be submitted to the EC of the National University of Pharmacy.

Reviewer _____ assoc. prof. Lyubov TERESHCHENKO

13 May 2026

Ф А2.2.1-91-287

МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
НАЦІОНАЛЬНИЙ ФАРМАЦЕВТИЧНИЙ УНІВЕРСИТЕТ

ВИТЯГ З ПРОТОКОЛУ № 19

14 травня 2026 року

м. Харків

засідання кафедри менеджменту, маркетингу
та забезпечення якості в фармації

Голова: завідувач кафедри ММЗЯФ, доктор фарм. наук, професор Малий В. В.

Секретар: доцент ЗВО, канд. фарм. наук, доц. Жадько С.В.

ПРИСУТНІ: зав. кафедри ММЗЯФ, доктор фарм. наук, проф. Малий В.В., професор ЗВО, докт. фарм. наук, проф. Пестун І.В., професор ЗВО, докт. фарм. наук, проф. проф. Літвінова О.В., професор ЗВО, докт. фарм. наук, проф. проф. Коваленко С.М., професор ЗВО, докт. фарм. наук, проф. Крутських Т.В., професор ЗВО, докт. фарм. наук, проф. проф. Посилкіна О.В., доцент ЗВО, канд. фарм. наук, доц. Бабічева Г.С., доцент ЗВО, канд. фарм. наук, доц. Бондарєва І.В., канд. екон. наук, доц. Деренська Я.М., доцент ЗВО, канд. фарм. наук, доц. Жадько С.В., канд. фарм. наук, доц. Зборовська Т.В., канд. юрид. наук, доц. Коляда Т.А., канд. фарм. наук, доц. доц. Лісна А.Г., доцент ЗВО, канд. фарм. наук, доц. Малініна Н.Г., доцент ЗВО, канд. фарм. наук, доц. Рогуля О.Ю., здобувачі вищої освіти фармацевтичного факультету.

ПОРЯДОК ДЕННИЙ: Про допуск здобувачів вищої освіти випускного курсу фармацевтичного факультету спеціальності 226 Фармація, промислова фармація, освітньо-професійної програми Фармація до захисту кваліфікаційних робіт в Екзаменаційній комісії НФаУ.

СЛУХАЛИ: Про допуск здобувача вищої освіти факультету фармацевтичного випускного курсу спеціальності 226 Фармація, промислова фармація освітньо-професійної програми Фармація групи Фм21(4,10д)англ-01 Аіссам АГУРІ до захисту кваліфікаційної роботи в Екзаменаційній комісії НФаУ. Кваліфікаційна робота на тему «Формування механізму стратегічного управління ризиками у діяльності фармацевтичних підприємств».

ВИСТУПИЛИ: В обговоренні кваліфікаційної роботи взяли участь проф. ЗВО Пестун І.В., доц. ЗВО Бабічева Г.С. Керівник кваліфікаційної роботи: доц., канд. фарм. наук Бондарєва І.В.

УХВАЛИЛИ: Допустити здобувача вищої освіти Аіссам АГУРІ до захисту кваліфікаційної роботи на тему «Формування механізму стратегічного управління ризиками у діяльності фармацевтичних підприємств» в Екзаменаційній комісії НФаУ.

Зав. каф. ММЗЯФ, доктор фарм. наук,
професор Володимир МАЛИЙ

Секретар, доцент ЗВО,
канд. фарм. наук, доцент Світлана ЖАДЬКО

Ф А2.2.1-36-042

НАЦІОНАЛЬНИЙ ФАРМАЦЕВТИЧНИЙ УНІВЕРСИТЕТ

ПОДАННЯ
ГОЛОВІ ЕКЗАМЕНАЦІЙНОЇ КОМІСІЇ
ЩОДО ЗАХИСТУ КВАЛІФІКАЦІЙНОЇ РОБОТИ

Направляється здобувач вищої освіти Аіссам АГУРІ до захисту кваліфікаційної роботи
за галуззю знань 22 Охорона здоров'я
спеціальністю 226 Фармація, промислова фармація
освітньо-професійною програмою Фармація
на тему: «Формування механізму стратегічного управління ризиками у діяльності фармацевтичних підприємств».

Кваліфікаційна робота і рецензія додаються.

Декан факультету _____ / Олександр ГОНЧАРОВ /

Висновок керівника кваліфікаційної роботи

Здобувач вищої освіти Аіссам АГУРІ виконала на кафедрі менеджменту, маркетингу та забезпечення якості у фармації НФаУ кваліфікаційну роботу, яка присвячена формуванню механізму стратегічного управління ризиками у діяльності фармацевтичних підприємств.

У першому розділі розкрито теоретичні основи управління фармацевтичними підприємствами на засадах концепції ризик-менеджменту. Другий розділ присвячено аналізу системи управління та оцінці ризиків у діяльності АТ «Фармак, а також ідентифіковано та оцінено ключові ризики, що впливають на ефективність функціонування компанії. У третьому розділі обґрунтовано впровадження ризик-менеджменту в загальну систему управління АТ «Фармак», зокрема концептуалізовано принципи ризико-орієнтованого управління.

У цілому подана до захисту кваліфікаційна робота Аіссам АГУРІ на тему «Формування механізму стратегічного управління ризиками у діяльності фармацевтичних підприємств» відповідає вимогам, що висуваються до кваліфікаційних робіт, оцінюється позитивно і може бути рекомендована для захисту в Екзаменаційну комісію НФаУ.

Керівник кваліфікаційної роботи
_____ Ірина БОНДАРЄВА
12 травня 2026 року

Висновок кафедри про кваліфікаційну роботу

Кваліфікаційну роботу розглянуто. Здобувач вищої освіти Аіссам АГУРІ до захисту даної кваліфікаційної роботи в Екзаменаційній комісії.

Завідувач кафедри
менеджменту, маркетингу та
забезпечення якості у фармації
_____ Володимир МАЛИЙ
14 травня 2026 року

Qualification work was defended

of Examination commission on

«09» of June 2026

With the grade _____

Head of the State Examination commission,

D.Pharm.Sc, Professor

_____ /Volodymyr YAKOVENKO/