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MECHANISM FOR NEUTRALIZING INTERNAL AND EXTERNAL THREATS TO THE FINANCIAL SECURITY

Abstract. The main purpose of the article is to form a consistent and clear mechanism for neutralizing internal and external threats to financial security. Financial security at any level always implies a state of security against the impact of threats. Terms such as «risk», «call» and «danger» are often used. The article establishes the essence of the concepts of «financial security of higher education institution», «danger», «risk», «challenge» and «threat». Classification of threats into internal and external ones is carried out, their sources and factors are identified. The methods used to assess risks, their advantages and disadvantages are defined. It is offered to carry out an estimation of risks of financial security of higher education institutions by means of SWOT-analysis and expert methods, and using point marks to establish a generalized estimation of one expert of influence of factors of strong and weak sides of activity of higher education institution on assistance to use of possibilities and protection against threats taking into account probability of their occurrence. The generalized result of activity of higher educational institutions is calculated, which showed insignificant prevalence of internal strong factors in activity of higher educational institutions on quality of educational services provided by them and provision of financial security. Weaknesses of activity of higher education institutions on which management of quality of educational services for the purpose of maintenance of financial security should be focused, and also those strong sides of activity which potential should be used for achievement of the set goal are established. Based on the results of the study, it was identified the main weaknesses that the management of the quality of educational services should pay attention to in order to ensure the financial security of higher education institutions. It is necessary to take into account that the results of this assessment are quite variable in time, because according to the circumstances may change the system of factors, and step their influence. According to the results of the analysis, the most significant factors of internal and external environment of the institution of higher education were identified, and the matrix of components of the SWOT-analysis will take shape.

Keywords: financial security, threats, higher education institutions, education, risk.

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МЕХАНІЗМ НЕЙТРАЛІЗАЦІЇ ВНУТРІШНІХ І ЗОВНІШНІХ ЗАГРОЗ ФІНАНСОВІЙ БЕЗПЕЦІ

Анотація. Фінансова безпека на будь-якому рівні завжди передбачає стан захисту від впливу загроз. Часто використовуються такі терміни, як «ризик», «виклик» і «небезпека». Основною метою статті є формування послідовного і чіткого механізму нейтралізації внутрішніх і зовнішніх загроз фінансовій безпеці. Розкрито сутність понять «фінансова безпека вишу», «небезпека», «ризик», «виклик» і «загроза». Проведено класифікацію загроз на внутрішні і зовнішні, визначено їхні джерела і фактори. Визначено методи, використовувані для оцінки ризиків, їхні переваги і недоліки. Пропонується провести оцінку ризиків фінансової безпеки вишів за допомогою SWOT-аналізу та експертних методів, а за допомогою точкових оцінок установити узагальнену оцінку одним експертом впливу факторів сильних і слабких сторін діяльності вишу про сприяння використанню можливостей і захисту від загроз з урахуванням імовірності їх виникнення. Розраховано узагальнений результат діяльності вищих навчальних закладів, який показав незначне переважання внутрішніх сильних чинників у діяльності вищих навчальних закладів за якістю наданих ними освітніх послуг і забезпечення фінансової безпеки. Установлено слабкі сторони діяльності вишів, на яких має бути зосереджено управління якістю освітніх послуг з метою забезпечення фінансової безпеки, а також ті сильні сторони діяльності, потенціал яких слід використовувати для досягнення поставленої мети. За результатами дослідження були визначені основні слабкі місця, на які менеджменту якості освітніх послуг слід звернути увагу, щоб забезпечити фінансову безпеку вищих навчальних закладів. Варто враховувати, що результати цієї оцінки дуже мінливі в часі, оскільки залежно від обставин може змінюватися система факторів, а також поступово їхній вплив. За результатами аналізу були виявлені найбільш значущі фактори внутрішнього і зовнішнього середовища вишу і сформується матриця компонентів SWOT-аналізу.

Ключові слова: фінансова безпека, загрози, вищі навчальні заклади, освіта, ризик.

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Introduction. The main type of activity of higher education institutions, which is determining for the formation of the efficiency of their activities and financial security, is the provision of educational services.

The financial security of higher education institutions should be understood as «the state of the institution of higher education in which there are enough available resources to prevent, weaken or protect against threats to the activity of an educational institution». At the same time scientists distinguish four levels of financial security in the sphere of education: the financial security of the State, the financial security of the education sphere, the financial security of the higher education institution and the financial security of an individual who is involved in the educational process.

Financial security at any level always implies a state of security against the impact of threats. Terms such as «risk», «call» and «danger» are often used.

A hazard is a state in which the possibility of harm to a system (society, state, person) arises. A hazard can be characterized by the presence of a threat, risk and challenge. Risk is a sign of a potential danger to cause damage of a certain gravity and nature. A challenge is a sign of a real danger and requires an immediate response in order to prevent or reduce possible damage. Thus, the process of ensuring financial security should include the analysis of factors, identification of risks and threats and their assessment. All factors that have a certain impact on financial security should be divided into positive and destructive: probability of risk occurrence, threatening actions — challenges, real possibility of loss — danger, objective or subjective intention to cause damage — threat.

Research analysis and problem statement. The main aspects of safety research can be found in the works of such scientists as: Baldwin [1], Ackroyd and Marsden [2], Hama [3], Kljucnikov, Mura and Sklenar [4]. With regard to ensuring financial and financial security, we can highlight: Lielgaidina, & Geipele [5], Zhyvko, Gorban, Marushko, Korzh [6], Pushak, Lagodiienko, Basiurkina, Nemchenko, & Lagodiienko [7], Sylkin, Kryshatanovych, Zachepa, Bilous, Krasko [8].

However, knowing the due scientific advancement, the issue of forming a consistent and clear mechanism for neutralizing internal and external threats to financial security for our educational institutions still remains unresolved.

The task is to determine the weaknesses of the activities of universities, on which the quality management of educational services should be focused in order to ensure financial security, as well as those strengths of activities, the potential of which should be used to achieve this goal.

The purpose of the article is to form a consistent and clear mechanism for neutralizing internal and external threats to financial security.

The following **methods** were used in the research process: abstract-logical analysis, system and statistical analysis, mathematical modeling.

Results of the research. «The modern realities of the development of society put knowledge at the forefront as the most important resource and the possibility of the continued existence of mankind in conditions of limited natural resources. The process of obtaining knowledge from the entire body of information directly includes its receipt through the mass media, which, in turn, differ significantly in terms of the presentation of data, the size and characteristics of the audience, purpose, etc».

In the case of higher education institutions, all threats, according to their cause and effect, are most often divided into internal (caused by processes that arise in the course of financial systems) and external (arising outside of financial systems).

Internal threats most often include noncompliance with the established legislative requirements; «aging of staff» and shortage of personnel of sufficient qualification, noncompliance with market needs for educational services; complications due to a number of reasons for the process of innovation in the educational process; conflicts in labor collective, between the management of higher education institution and teaching staff, between teachers and students; psychological pressure in any manifestation; imperfection or absence of system of prevention of corruption manifestations in HEI; inefficient management of higher education institution and quality of its educational services; deterioration of image of higher education institution;

vulnerability of intellectual capital; orientation on «average student»; and to the external — absence of stable state policy in the sphere of education; absence of uniform system of an estimation of knowledge; unfavorable demographic situation; competition on the market of educational services; saturation of the market by graduates of a certain specialty; financial inconsistency of potential consumers of educational services; financial crisis; corruption and criminality in the country; epidemics, natural disasters.

The source of internal threats to the financial security of the institution of higher education can be resource, personnel, information, intellectual, organizational, infrastructural, scientific and technical and development potential of the education system itself. Factors of formation of external threats to financial security of institutions of higher education are: political, legal, demographic, national, socio-moral, financial-financial and scientific-technical [9—11].

Proceeding from the above it is possible to form a system of internal and external factors that threaten the financial security of higher education institutions and can affect the quality of educational services provided to them.

Risks that have changed from possible to real are a threat to the activity. Their assessment is therefore extremely important.

The development of a system of financial security presupposes an assessment of the risks of higher education through quantitative and qualitative methods.

Qualitative methods of risk assessment include expert methods, method of rating evaluations or ranking, method of control lists, and quantitative methods — method of analogies (method of using analogues), sensitivity analysis, analysis by simulation modeling methods, in particular Monte Carlo method (method of statistical runs), risk analysis of possible losses, statistical analysis [12; 13].

The main task in risk analysis is to identify the types of risk, factors contributing to its occurrence, to assess the degree of their danger. Often during the risk analysis, a quantitative result can also be determined, which provides for the cost evaluation of damage and risk minimization measures and a methodological approach to quantitative risk evaluation. The results of the analysis can be the initial information for quantitative. Each of the qualitative or quantitative methods of risk assessment has both advantages and disadvantages, so they should be applied as a whole.

SWOT-analysis is mainly used for the analysis of internal risks and threats, and PEST-analysis is used for external ones. SWOT-analysis allows to identify internal factors that determine the strengths and weaknesses of the research subject (higher education institutions), and external factors that characterize the potential opportunities and threats [14; 15]. Like other SWOT-analysis also noted a number of advantages and disadvantages. The advantages of SWOT-analysis include: simplicity; does not require large amounts of information; helps to determine the competitive advantages, the formation of development strategies, ensuring the financial security of the research subject. The disadvantages of SWOT-analysis can be considered: a certain subjectivism, the probability of miscalculations, inability to analyze the changing environment.

At realization of SWOT-analysis of activity of higher educational institutions on quality of educational services provided by them and maintenance of financial safety for identification of internal factors it is necessary to proceed from components of an estimation of quality of educational services (personnel, educational-methodical, scientific, organizational, administrative, material and technical, financial, information and social maintenance of educational process, quality of preparation of arriving and international recognition of educational institution), and the fact of the international recognition of higher education institution.

According to the results of the analysis, the most significant factors of internal and external environment of the institution of higher education were identified, and the matrix of components of the SWOT-analysis will take shape (*Table*). The filling of the components of the SWOT-analysis matrix can be changed in accordance with changes in both the internal and external environment.

Table

**Matrix of components of SWOT-analysis of higher education institution activity
by the quality of educational services and financial security provided by them**

Internal context		
Direction	Strengths	Weaknesses
Personnel provision	High professionalism of the teaching staff	Lack of adequate remuneration and incentives for teachers
Training and methodological support	Introduction of innovative teaching methods	Formality of updating training and working programs
Scientific support	Establishment of a research university	Insufficient volume of research and development
Organizational support	Development of innovative forms of learning	Significant workload of applicants for education on the faculty of the educational institution
Administrative support	Introduction of quality management system	Non-compliance with quality standards
Logistic support	Availability of adequate logistics for the educational process	Insufficient technical equipment of the educational process
Financial support	Availability of additional funding sources	Insufficient budget financing
Informational support	Availability of educational and working programs, educational and methodical developments in electronic form on the website of the institution of higher councils.	Weak level of information support of the educational process
Social Security	Involvement of applicants for education in formation of educational policy of an educational institution	Student government formality
The quality of training applicants	High incoming rating	Low level of preparation of entrants
International recognition	Establishing international relations	Lack of cooperation with foreign educational institutions
External context		
Sphere	Facilities	Threats
political	Joining the Bologna Process	Loss of image by universities
Law	Improvement of the legislative base regarding the quality of educational services provision	Lack of state-approved statistical reports of higher education institutions and methods for assessing the quality of educational services
National	Application of best practices in quality management of educational services	Strengthening of international competition, event on the Ukrainian market of foreign educational institutions
Demography	External educational immigration	Decrease in the birth rate in the country
Financial	Availability of budget financing	Decrease in income level of population
Social	Growth of cultural development of the country's population	Corrupt practices in education
Scientific and technical	International internships, scholarships and grants	Lack of motivation mechanisms for scientific activity of teachers

Source: formed by the authors.

In addition to SWOT-analysis, the expert method was used to identify strengths, weaknesses, opportunities and threats of higher education institutions to ensure the appropriate level of quality of their educational services and financial security. The experts were academicians, specialists with considerable experience of work in higher education institutions. experts filled in

the questionnaire and assessed the degree of influence of internal factors of strengths and weaknesses in the directions.

Thus experts estimated probability of occurrence of possibilities and threats on a scale from 0 to 1 and degree of their influence on internal environment of higher education institution on maintenance of an appropriate level of quality, provided by them, educational services and maintenance of their financial safety on a scale: 5 — strong influence; 4 — quite strong influence; 3 — average influence; 2 — relatively weak influence; 1 — weak influence.

The experts also assessed the extent to which the factors of strengths and weaknesses influence the use of opportunities and counteraction to existing threats on a scale:

— the impact of strong points on the external context is estimated in the range from 0 to +3 points: 0 — the factor has no impact on either capabilities or threats; 1 — the factor has a positive impact on capabilities and protects against threats; 2 — the factor promotes the use of capabilities and prevents threats; +3 — the factor fully enables the use of capabilities and prevents negative consequences of threats;

— the impact of weak points on the external context is estimated in the range from 0 to –3 points:

0 — the factor does not affect either opportunities or threats in any way;

1 — the factor has a negative impact on opportunities and protects against threats;

–2 — the factor has a sufficiently negative impact on opportunities and enhances threats in a sufficiently strong way;

–3 — the factor leads to the impossibility to use the opportunities for development and to the impossibility to prevent negative consequences of threats [6].

Applying the results of the expert poll established quantitative estimates of the influence of strengths and weaknesses on the use of opportunities and protection against threats:

1. The generalized evaluation by one expert of the influence of factors of strengths and weaknesses on the use of opportunities and protection from threats, taking into account the probability of their occurrence, is calculated (1):

$$M3_1 = \sum_{i=1}^n \sum_{a=1}^k PM_{ia} \cdot PM_a \cdot MP_{ia} + \sum_{i=1}^n \sum_{b=1}^l PZ_{ib} \cdot PZ_b \cdot ZP_{ib}, \quad (1)$$

where PM_{ia} — degree of influence of the i -th factor of strength of the activity of the institution of higher education on the use of the a -th factor of opportunities;

PZ_{ib} — degree of influence of the i -th factor of strength of the activity of the institution of higher education on protection against the a -th factor of threats;

MP_{ia} — degree of influence of the a -th factor of opportunities on the strength of the activity of the institution of higher education;

ZP_{ib} — degree of influence of the a -th factor of threats on the strength of the activity of the institution of higher education;

PM_a — probability of occurrence of the a -th factor of opportunities;

PZ_b — the probability of an external threat factor.

The generalized estimation by one expert of influence of factors of weakness of activity of institutions of higher education on use of possibilities and probability of occurrence of threats taking into account probability of their occurrence (2):

$$HM3_1 = \sum_{j=1}^m \sum_{a=1}^k HM_{ja} \cdot PM_a \cdot MH_{ja} + \sum_{j=1}^m \sum_{b=1}^l HZ_{jb} \cdot PZ_b \cdot ZH_{jb}, \quad (2)$$

where HM_{ja} — the degree of influence of the j -th factor of the weakness of the activity of the institution of higher education on the use of the a -th factor of opportunities;

HZ_{jb} — the degree of influence of the j -th factor of the weakness of the activity of the institution of higher education on the probability of occurrence of the c -th factor of threats;

MH_{ja} — degree of influence of the j -th factor of opportunity on the weakness of the activity of a higher education institution on the weakness of the activity of the institution of higher education;

ZH_{jz} — probability of the appearance of the j -th factor of opportunity; PM_{zj} — probability of a capability factor;

PZ_{zj} — probability of a threat factors.

Assessments of all experts are added as a result, which forms a generalized result of the activity of the higher education institution (3):

$$\Pi HMZ_{ZEO} = \sum_{z=1}^f (PMZ_{zj} - HMZ_{zj}), \quad (3)$$

where PMZ_{zj} and HMZ_{zj} — generalized scores obtained earlier from each of the experts.

The generalized result of the activity of higher education institutions is (+181.9) point, which indicates an insignificant predominance of internal strong factors in the activity of higher education institutions in terms of quality of educational services provided by them and ensuring financial security.

Conclusions. According to the results of the conducted research it was established that quality management of educational services in order to ensure financial security of higher education institutions should focus on overcoming such weaknesses as: lack of cooperation with foreign educational institutions; non-observance of quality standards; insufficiency of volumes of research and development; formal renewal of educational and working programs; weak level of information support of the educational process; establishment of international relations; implementation of quality management system; establishment of a research university; high rating of applicants.

It is necessary to take into account that the results of this assessment are quite variable in time, because according to the circumstances may change the system of factors, and step their influence.

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