

JEL Classification:
F12; H75; I23

UDC 005.34:378.014.61

DOI: 10.30857/2415-
3206.2020.2.1

**METHODOLOGICAL APPROACH TO
ASSESSING THE COMPETITIVENESS OF
INSTITUTIONS OF HIGHER EDUCATION**

**S. BREUS¹, Y. KHAUSTOVA¹,
M. DENYSENKO¹, S. BONDARENKO¹,
N. KYRYLKO¹**

¹ *Kyiv National University of Technologies and
Design, Ukraine.*

Background and objectives. The problem of competitiveness of institutions of higher education (IHE) is one of the key tasks, the solution of which will help increase the socio-economic development of the country. In the context of Ukraine's European integration interests, competition between Ukrainian and foreign IHEs is intensifying, which encourages the former to find ways of their own competitiveness (which is largely determined by the competitiveness of its graduates and the ability to generate knowledge-based innovations) as a result of using appropriate factors that are directly dependent on increasing competitiveness in the context of its management.

Methods. Methods of profiles and ratings using separate methods of comparative, statistical and economic-mathematical analysis (factor analysis), with the formation of an appropriate system of indicators.

Findings. The results of assessing the competitiveness of KNUTD indicate a decrease in the level of competitiveness

of IHEs. It has been estimated that during 2017–2019 it was at a low level (0.542, 0.541 and 0.466, respectively), which according to the proposed scale for determining the level of competitiveness of IHEs (developed using the golden ratio method) is in the range of 0.383–0.618.

Conclusion. Based on studying and assessing the competitiveness of IHEs to improve it in the context of its management and ensure the strategic development of IHEs within the implementation of relevant strategic alternatives and proposed generalized areas, as well as certain factors of competitiveness, it has been determined appropriate to forecast the indicators underlying the calculation of the KNUTD competitiveness, using an improved methodological approach to the main proposed measures.

Keywords: competitiveness; competitiveness of IHEs; methods of profiles; rating estimations; methods of comparative; statistical and economic-mathematical analysis (factor analysis).

NUMBER OF REFERENCES 24	NUMBER OF FIGURES 2	NUMBER OF TABLES 5
-------------------------------	---------------------------	--------------------------

JEL Classification:
F12; H75; I23

УДК 005.34:378.014.61

DOI: 10.30857/2415-
3206.2020.2.1

МЕТОДИЧНИЙ ПІДХІД ДО ОЦІНЮВАННЯ КОНКУРЕНТОСПРОМОЖНОСТІ ЗАКЛАДІВ ВИЩОЇ ОСВІТИ

С. БРЕУС¹, Є. ХАУСТОВА¹,
М. ДЕНИСЕНКО¹, С. БОНДАРЕНКО¹,
Н. КИРИЛКО¹

¹ Київський національний університет технологій
та дизайну, Україна.

Постановка проблеми та завдання. Проблема конкурентоспроможності закладів вищої освіти (ЗВО) є одним із ключових завдань, вирішення якого сприятиме підвищенню соціально-економічного розвитку країни. В контексті європейських інтеграційних інтересів в Україні посилюється конкуренція між українськими та іноземними ЗВО, що спонукає перших шукати шляхи власної конкурентоспроможності (це значною мірою визначається конкурентоспроможністю її випускників та здатністю генерувати інновації, заснованих на знаннях) в результаті використання відповідних факторів, які безпосередньо залежать від підвищення конкурентоспроможності в контексті управління нею.

Методи. Використані методи профілів та рейтингів з використанням окремих методів порівняльного, статистичного та економіко-математичного аналізу (факторного аналізу), з формуванням відповідної системи показників.

Результати. Результати оцінки конкурентоспроможності КНУТД свідчать про зниження рівня конкурентоспроможності ЗВО. За

підрахунками, протягом 2017–2019 років він був на низькому рівні (0,542, 0,541 та 0,466, відповідно), який згідно із запропонованою шкалою для визначення рівня конкурентоспроможності ЗВО (розроблених із використанням методу золотого перетину) знаходиться у діапазон 0,383–0,618.

Висновки. На основі вивчення та оцінки конкурентоспроможності ЗВО з метою її покращення в контексті управління та забезпечення стратегічного розвитку ЗВО в рамках реалізації відповідних стратегічних альтернатив та запропонованих сфер діяльності, а також певних факторів конкурентоспроможності визначено відповідним для прогнозування показників, на яких лежить розрахунок конкурентоспроможності КНУТД, використовуючи вдосконалений методологічний підхід до основних запропонованих заходів.

Ключові слова: конкурентоспроможність; конкурентоспроможність ЗВО; методи профілів; рейтингові оцінки; методи порівняльного; статистичного та економіко-математичного аналізу (факторний аналіз).

Introduction. The problem of competitiveness of institutions of higher education (IHEs) is one of the key tasks, the solution of which will help increase the socio-economic development of the country. In the context of Ukraine's European integration interests, competition between Ukrainian and foreign institutions of higher education is intensifying, which encourages the former to find ways of their own competitiveness (which is largely determined by the competitiveness of its graduates and the ability to generate knowledge-based innovations) as a result of using appropriate factors that are directly dependent on increasing competitiveness in the context of its management.

Examining the competitiveness of institutions of higher education, it should be noted that the totality of researched works of scientists devoted to determining the essence of the competitiveness of institutions of higher education can be combined into groups. Thus, the competitiveness of institutions of higher education is considered in the following aspects:

- as a process (set of processes) of interaction and competition for the formation and implementation of competitive advantages (Tymoshenko 2014; Kravchenko, 2011);

- as a complex characteristic of the institutions of higher education, which determines the share of the relevant market of educational services, which belongs to this institution of higher education and reflects its advantage over competitors by a number of determining factors (Romanova, 2005; Lazarev *et al.*, 2003);

- as the ability to adapt to customer needs, meet and form the future ones, be separated from others through the use of competitive advantages and adaptation to changes in the market of educational services (Prus, 2006; Tardaskina *et al.*, 2013; Beztelesna *et al.*, 2017; Stebliuk *et al.*, 2018).

Based on the analysis of scientists' work, the competitiveness of institutions of higher education can be defined as its ability to identify and realize competitive advantages through a combination of potential opportunities and effective resource management in the process of interaction with the market environment in order to achieve a leading position relative to competitors through the best socio-economic indicators (price, quality, forms, teaching methods, etc.) and increase the level of satisfaction of consumer needs with goods / services (Gryshchenko, 2020; Shcherbak *et al.*, 2020).

Given the above, it should be noted that when assessing the competitiveness of institutions of higher education, it is advisable to analyze the reasons for reducing the competitiveness of institutions of higher education and determine the factors of its increase, i.e. having a factor analysis – an important aspect of competitiveness assessment of countries, industries, institutions of higher education (Stebliuk *et al.*, 2018).

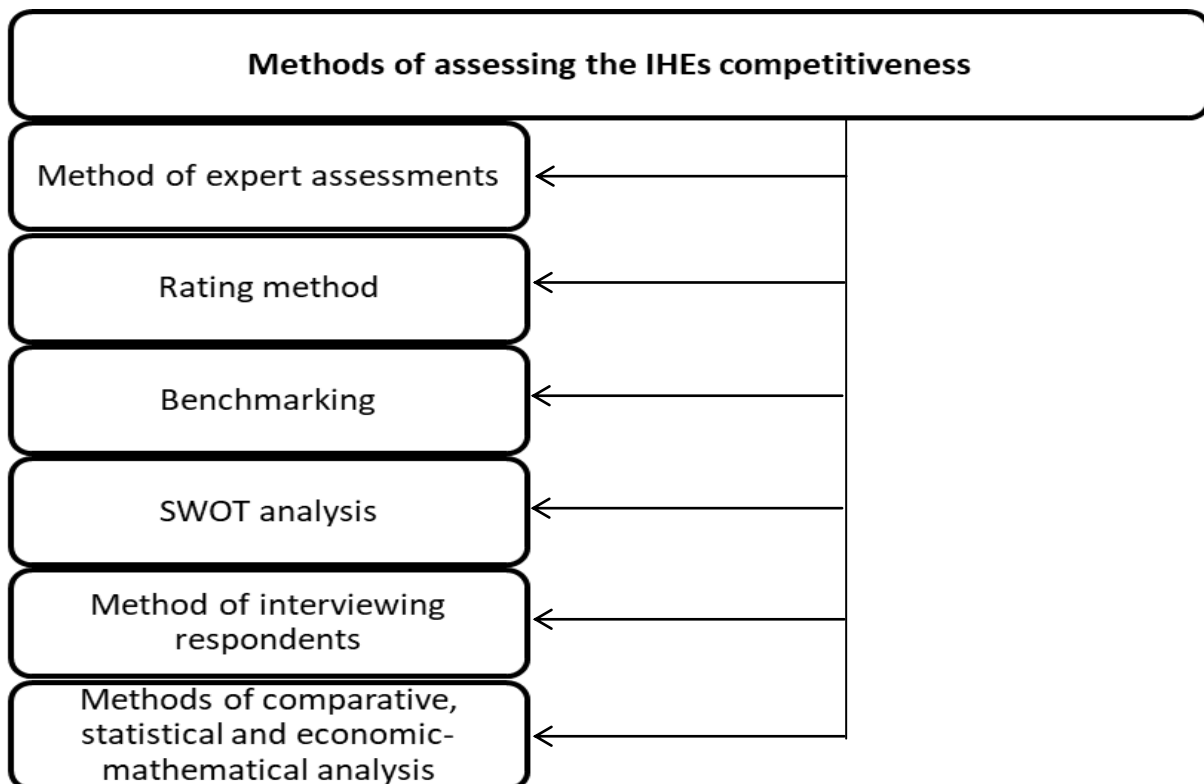
Analysis of the scientific literature shows that there is no single classification of factors for managing the competitiveness of institutions of

higher education, which determines the feasibility of forming a set of their specific list depending on the functioning of institutions of higher education, its purpose and activities, as well as competitive advantages.

Also, it should be noted that in modern conditions there is no unity in understanding the use of a universal methodological framework for assessing the competitiveness of institutions of higher education, which is carried out using various statistical methods, economic and mathematical modeling, which, in turn, provide an opportunity to explore the current state of competitiveness in the market of educational services, identify strengths and weaknesses and conduct general monitoring of competitiveness. Therefore, the accuracy of the obtained assessment data and further actions of the institutions of higher education regarding its development and making a strategy behavior depend on the correctly chosen method.

The main aspects of competitiveness management, formation of competitive strategy and assessment of the competitiveness level, in particular institutions of higher education have been considered in the works (Breus, 2006, Breus, 2018; Breus *et al.*, 2019; Breus *et al.*, 2020).

The most common methods of assessing the competitiveness of institutions of higher education are shown in Fig. 1.



Source: Tardaskina *et al.*, 2013; Beztelesna *et al.*, 2017; Stebliuk *et al.*, 2018; Tsarenko, 2015.

Fig. 1. The most common methods of assessing the IHEs competitiveness

Analysis of the existing methods of assessing competitiveness shows that they are used mainly to assess the competitiveness of economic entities. Methods for determining the competitiveness of products are largely one-sided, as well as a number of shortcomings that reduce the reliability of obtaining assessments of the competitiveness level.

Factors that negatively affect the practical use of the existing methods of assessing the competitiveness level at the IHEs level include the following:

1. The calculation of indicators of competitiveness assessment does not allow the user to see the structure of the influence of all factors on the general level in order to identify "bottlenecks" in the production.

2. Most methods are designed to assess the competitiveness of new products. However, in market conditions there is a need to assess competitiveness in order to determine the feasibility of its use at the level of institutions of higher education.

3. Most of the available methods of assessing competitiveness for calculations use indicators determined by the expert ranking of the characteristics of products / services according to their degree of importance. The result of such calculations depends on the intuition and experience of the expert, his awareness of all the features of competing products and the market state.

4. There is no integration of the proposed methods into the information system of IHEs management, which significantly complicates the process of calculating the competitiveness of institutions of higher education and the possibility of their use to manage the competitiveness of institutions of higher education.

Thus, it is reasonable to assume that from the point of view of practical use of methods for assessing the competitiveness of institutions of higher education, it is important to meet the relevant needs of consumers, and not just the presence of functional or other properties of the product or service.

The main goal is to systematize the theoretical and methodological provisions and methodological framework for studying the competitiveness of institutions of higher education to develop a methodological approach to its assessment.

In order to achieve this goal, the following tasks have been set and solved in the work:

- the essence of the concept of "competitiveness" has been investigated;
- theoretical aspects of studying the competitiveness of institutions of higher education, factors influencing it and competitive advantages have been considered;
- methodical approaches to assessing the competitiveness of institutions of higher education have been studied;

- assessment of the competitiveness of institutions of higher education using an improved methodological approach has been performed.

The research object is the process of assessing the competitiveness of institutions of higher education.

The initial information of the study was the data published on the official website of KNUTD (Official website of Kyiv National University of Technologies and Design, 2017–2020), the rating "TOP-200 Ukraine 2020" (Independent evaluation of universities: academic rating "Top-200 Ukraine 2020", 2020) and the results of own calculations in conducting economic and statistical analysis of the main indicators that characterize the activities of KNUTD from the standpoint of financial, educational, organizational and scientific activities.

The study was conducted during 2019–2020 at Kyiv National University of Technologies and Design.

Materials and methods. In the context of the study, it should be noted that the analysis of literature sources confirmed that none of the methods is universal, they involve the use of a number of indicators that are inherently recursive and cannot be formed on the basis of data available in the institutions of higher education, given that institutions of higher education are not classic business entities, they have certain features of the business entity, but not all of their indicators may have the same value to ensure the effectiveness of IHEs activities as enterprises.

Thus, when assessing the competitiveness of institutions of higher education it is possible to use a number of methods, which include methods of profiles and ratings using separate methods of comparative, statistical and economic-mathematical analysis (factor analysis), with the formation of an appropriate system of indicators. In this context, the ranking positions of institutions of higher education are indicators of the quality of educational services and at the same time indicators of the competitiveness level of both institutions of higher education and higher education in general.

In the context of strategic development of KNUTD the research and realization of competitive advantages of the university acquires importance. Thus, the main advantages of KNUTD in comparison with competitors (taking into account the rating data "TOP-200 Ukraine 2020") (Independent evaluation of universities: academic rating "Top-200 Ukraine 2020", 2020) should include: image, successful experience in the market of educational services since 1930, a wide range of educational services, communication with employers, the presence of well-known graduates, international recognition. With this in mind, the following main characteristics of competitive advantage depending on their affiliation to the results of KNUTD in accordance with the content of a competitive advantage (Table 1).

Table 1

Characteristics of competitive advantages of KNUTD

Competitive advantage	Features	Content
Image	Adaptability	Ability to adapt a specific competitive advantage to the conditions of IHEs performance
	Ability to ensure market position	Such a market position can advantageously distinguish it from competitors for a long time
	Association	Specific market conditions and peculiarities of functioning are taken into account
Successful experience in the market of educational services	Relativity	Competitive advantage is the result of comparing the performance of institutions of higher education that interact in one market
	Dynamism	It is caused by changes in the factors of the external competitive environment, depends on the activity of competitors, changes in consumer demand and behavior, scientific and technological progress, etc.
A wide range of educational services	Dependence	The influence of many heterogeneous uncontrolled factors (including modern technology) contributes to the creation of benefits in the field of quality of higher education, but can also worsen it due to the high cost of its creation / acquisition
	Ability to be strengthened	It is determined by the ability to improve the existing activities in accordance with the chosen strategy
Contacting employers	Significance	Compliance with key success factors (in terms of competition conditions in the industry and market requirements)
Presence of famous graduates	Reproducibility	It is associated with the ability of competitors to identify the main characteristics of the advantage, to establish the feasibility and consequences of its copying, to determine the composition and amount of resources needed for its implementation in order to reduce the competitive status of the competitor
	Orientation	Focus on the specific needs of real and potential consumers
International recognition	Stability	It determines the duration of the life cycle of competitive advantage and its effectiveness, which allow a comprehensive assessment of the studied category

Source: Formed based on the results of own research.

Data Description. The study of the processes observed in the field of higher education and their impact on the competitiveness of institutions of higher education, along with the existing trends and patterns involves the search for the relationship of quantitative and qualitative indicators and the optimal direction of their development using economic and mathematical modeling.

The methodological approach proposed for use is, in essence, an improved methodological approach to assessing the competitiveness of institutions of higher education and an instrumental basis for its evaluation model. It takes into account indicators that characterize the scope of its management (in the context of financial and organizational support, student and research staff), taking into account the principles of developing one of the tools of strategic management – Balanced Scorecard (BSC) (Kaplan *et al.*, 2005), adapted to the needs of institutions of higher education. The stages of formation of an improved methodological approach to assessing the competitiveness of institutions of higher education (developed on the basis of (Breus, 2018; Breus, 2019) are shown in Fig. 2.

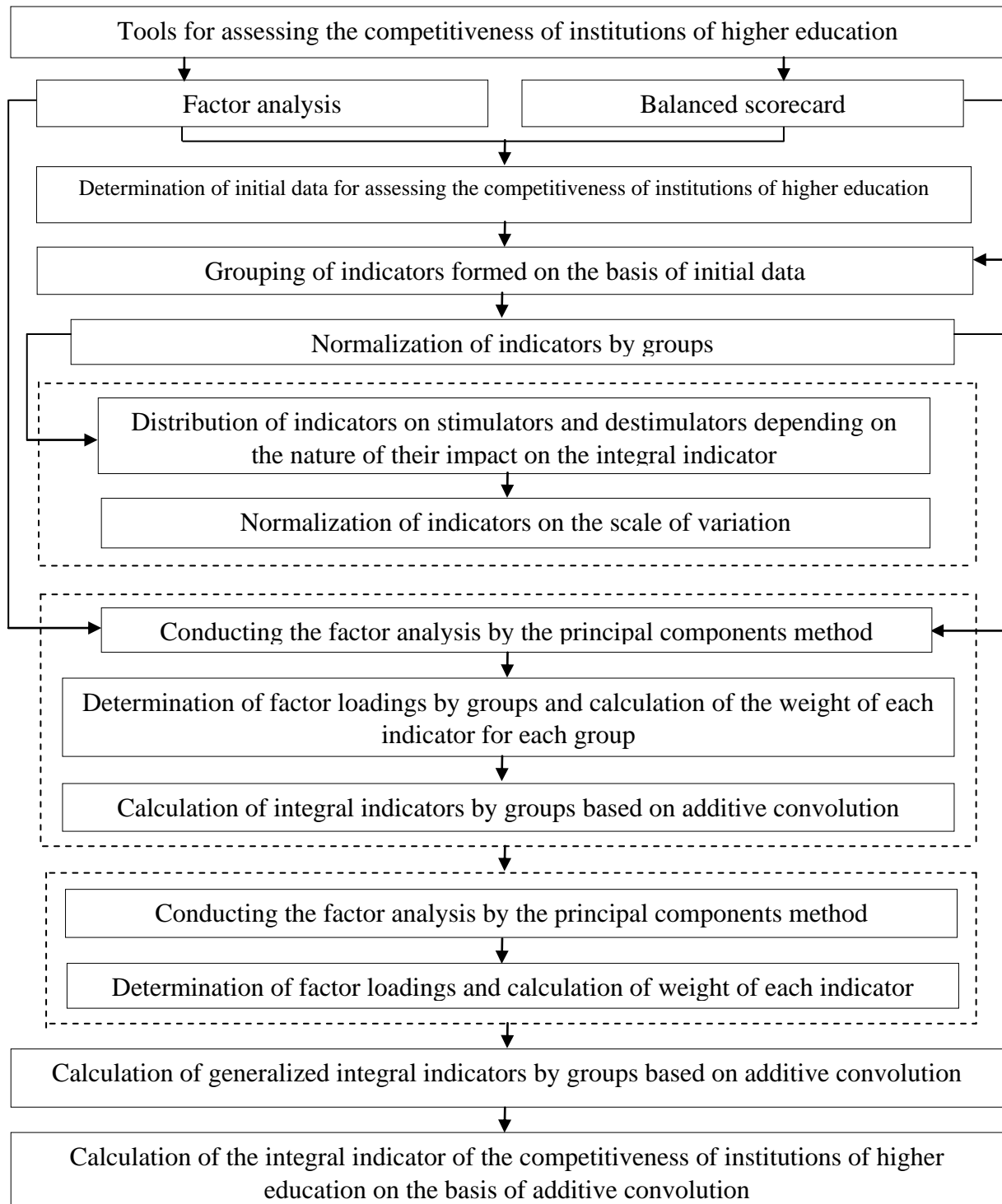
The competitiveness of Kyiv National University of Technologies and Design has been assessed using separate methods of comparative, statistical and economic-mathematical analysis (factor analysis) by the principal components method.

Considering that competitive advantages are formed, in particular, by comparative and dynamic character and the factors causing them, and also on the considered factors of management of IHEs competitiveness for research and its estimation the group "managed" has been selected, taking into account which groups of indicators have been formed characterizing the impact of these factors on the competitiveness of institutions of higher education.

Taking into account the data that characterize the activities of KNUTD both from the standpoint of the education institution and the business entity and the assessment of financial stability, the assessment of the competitiveness of institutions of higher education according to the data published on the official website of KNUTD (Official website of Kyiv National University of Technologies and Design, 2017–2019). The initial data (indicators) for assessing the competitiveness of institutions of higher education were divided into four groups: finance (indicators that characterize the management of financial flows of institutions of higher education); internal processes (indicators, the increase of which will help increase the efficiency of institutions of higher education); students (indicators that can be used to characterize the attitude of students to institutions of higher education in general); development and training of academic staff (AS) (indicators that can be used to determine the main directions of improving the quality of educational services provided by institutions of higher education).

Based on the components of the BSC, the indicators were normalized by groups (due to the lack of reference or standard values of indicators for assessing the competitiveness of institutions of higher education, the basis for comparison were maximum / minimum values) based on their deviation on the scale of variation and division of evaluation indicators into indicators-

stimulators (their rise leads to an increase in the level of competitiveness of institutions of higher education) and indicators-disincentives (their rise leads to a decrease in the level of competitiveness of institutions of higher education).



Source: developed on the basis of (Breus, 2018, Breus, 2019).

Fig. 2. Stages of formation of an improved methodological approach to assessing the competitiveness of institutions of higher education

To assess the competitiveness of institutions of higher education, integrated indicators were constructed by groups of indicators and an integral indicator as a whole for KNUTD by determining the weight values of indicators by groups in the process of factor analysis (calculation procedure involves the use of software Statistica) based on the results of factor loadings for each group of indicators.

The weight of each indicator was calculated using data (Breus, 2019; Kharazishvily *et al.*, 2013; On Approval of the Methodology for Calculating Integral Regional Indices of Economic Development (2003); Methodical recommendations for calculating the level of economic security of Ukraine, 20013) as following: the maximum values of factor loadings are selected from the factor loading tables for each row; the selected maximum values (loadings) are multiplied by the fractions of the total variance for each indicator; the sum of the received products on all factors is defined; the weight of each indicator is calculated by dividing the product of the maximum value and the share of the total variance for each indicator by the sum of the obtained products for all indicators assigned to one or another group.

According to the indicators for calculation, their normalized and weight values (based on the study of factor loadings) by groups, the calculation of integral indicators of IHEs competitiveness by groups of indicators and IHEs competitiveness as a whole according to formulas 1–2 taking into account data (Breus, 2019; Kharazishvily *et al.*, 2013; On Approval of the Methodology for Calculating Integral Regional Indices of Economic Development (2003); Methodical recommendations for calculating the level of economic security of Ukraine, 20013).

$$I_m = \sum_{i=1}^n d_i \times y_i, \quad (1)$$

where I_m – integral indicator for a group of indicators, where $m = (1, 2, 3, 4)$;
 d_i – the weight of the indicator that determines the degree of contribution of the i^{th} indicator to the integral indicator of the component (group of indicators) of the competitiveness of institutions of higher education;

y_i – normalized value of the i^{th} indicator;

n – the number of indicators used to assess the i^{th} indicator in the integral indicator for a group of indicators;

$$\sum d_i = 1; 0 \leq d_i; y_i \leq 1.$$

$$\Pi_{\text{KC}} = \sum_m d_m \times I_m, \quad (2)$$

where Π_{KC} – integral indicator of IHEs competitiveness;

d_m – the weight of the indicator, which determines the degree of contribution of the indicator to the integral indicator of the competitiveness of institutions of higher education;

$$I_m - \text{integrated indicator, where } m = (1, 2, 3, 4);$$

$$\sum d_m = 1; 0 \leq d_m; y_m \leq 1.$$

Based on formulas (1)–(2) with the use of normalized and weight values of indicators, the calculation (normalized and weight values of indicators were used) of integral indicators by groups has been calculated.

Results and discussion. The results of the calculation of generalized integral indicators of KNUTD competitiveness for each group are given in table 2.

Table 2

Integrated indicators for each group

Years	Integral indicator for the group "Finance"	Integral indicator for the group "Internal processes"	Integral indicator of IHE for the group "Students"	Integral indicator for the group "Development and training of AS"
2017	0,504	0,391	0,495	0,757
2018	0,607	0,600	0,657	0,337
2019	0,446	0,702	0,556	0,169

Further research of factor loadings on KNUTD has been carried out and weight of each indicator has been calculated (table 3).

Table 3

Factor loadings

Variables	Factor 1	Factor 2	Weight
Integral indicator for the group "Finance"	-0,235	0,972	0,183
Integral indicator for the group "Internal processes"	-0,919	-0,393	0,279
Integral indicator for the group "Students"	-0,832	0,555	0,253
Integral indicator for the group "Development and training of AS"	0,937	0,350	0,285
Total variance	2,470	1,530	–
The proportion of total variance	0,617	0,383	–
Total	–	–	1,0

The data of the table 3 indicate the influence of each factor on the input 4 features of the model. Based on formulas (1)–(2), the generalized integral indicators by groups and the integral indicator of KNUTD competitiveness by years were calculated. The results of the calculation are given in table 4.

The data in the table 4 generally show a decrease in the level of competitiveness of institutions of higher education, however, given that this methodological approach provides the possibility of achieving the maximum value of competitiveness at level 1, it is worth noting that the competitiveness of KNUTD in 2017–2019 was low. Competitiveness levels are determined using the golden ratio method, according to which the golden ratio is 1.618. To use

this method, it is proposed to divide the possible levels of competitiveness of institutions of higher education into 5 segments (intervals), each of which characterizes a certain state of competitiveness. The scale for determining the level of competitiveness of institutions of higher education is given in the table 5.

Table 4

Generalized integral indicators of indicators by groups and integral indicator for KNUTD

Years	Integral indicator for the group "Finance"	Integral indicator for the group "Internal processes"	Integral indicator for the group "Students"	Integral indicator for the group "Development and training of AS"	Integral indicator of KNUTD competitiveness
2017	0,092	0,109	0,125	0,216	0,542
2018	0,111	0,168	0,166	0,096	0,541
2019	0,082	0,196	0,141	0,048	0,466

Table 5

Scale for determining the level of competitiveness of institutions of higher education

№	Intervals of values of the integral indicator of competitiveness of institutions of higher education	Competitiveness levels of institutions of higher education
1.	0,855–1	High
2.	0,619–0,854	Average
3.	0,383–0,618	Low
4.	0,147–0,382	Crisis
5.	0–0,146	Critical

The introduction of an improved methodological approach into the practice of assessing the competitiveness of institutions of higher education and using the proposed levels of competitiveness as thresholds at certain intervals allows economic interpretation of the results of the calculation of the integral indicator and comparison of assessment results in dynamics.

Conclusion. Taking into account the data of the rating "TOP-200 Ukraine 2020" the main competitive advantages of KNUTD have been formed, their main characteristics have been outlined and taking into account the economic and statistical analysis to determine and analyze indicators of financial and economic activity of institutions of higher education, the results of which generally indicate an increase in negative trends in the activities of institutions of higher education, while the identified changes have a negative impact on the financial and economic activities of institutions of higher education and contribute to the reduction of its competitiveness.

The assessment of the competitiveness of institutions of higher education according to the data of KNUTD using an improved methodological approach,

which is based on the proposed binary use of methods of profiles and ratings, involves the use of factor analysis by the method of main components hierarchically with division into groups (by adapting a balanced system of indicators to manage the competitiveness of institutions of higher education, taking into account the main approaches to its development, which formed the basis for choosing evaluation indicators to determine integral indicators of competitiveness by groups and institutions of higher education in general).

The results of the assessment of the competitiveness of KNUTD indicate a decrease in the level of competitiveness of institutions of higher education, it was calculated during 2017–2019 at a low level – corresponds to 0.542, 0.541 and 0.466, respectively, which according to the proposed scale for determining the level of competitiveness of institutions of higher education (developed using the method of the golden ratio) is in the range of 0.383–0.618.

Based on the study and assessment of the competitiveness of institutions of higher education to improve it in the context of its management and strategic development of institutions of higher education within the implementation of relevant strategic alternatives and proposed generalized areas, as well as certain competitiveness factors, it is appropriate to forecast indicators based on competitiveness.

Acknowledgement. The authors thank the management and administration of the website of Kyiv National University of Technologies and Design and the Center for International Projects "Euroeducation" for the opportunity to use the information published on the official websites in the calculations.

Conflict of interest. S. Breus developed a methodological approach to assess the competitiveness of institutions of higher education, which was tested during the leadership of scientific work of the student I.I. Suhoniako, who took first place in the second round of the All-Ukrainian competition of student research in the specialty "Management in economic competition" (2020) and Master's thesis of the student I.I. Suhoniako. The main results have been highlighted in the publications on the relevant data on the subject of the article, participated in the formation of the main competitive advantages. Y. Khaustova and M. Denysenko participated in the adaptation of the main competitive advantages to the activities of KNUTD and in the generalization of the research results. S. Bondarenko participated in the adaptation of the main competitive advantages to the activities of KNUTD. N. Kyrylko participated in collecting the input information for analytical calculations.

Abbreviations:

<i>IHE</i>	Institution of higher education
<i>KNUTD</i>	Kyiv National University of Technologies and Design
<i>BSC</i>	Balanced Scorecard

References:

- Tymoshenko, O.V. (2014). Increase of competitiveness of higher educational establishments culture and arts of Ukraine. *Economics and Management Culture*, 1: 27–31. http://irbis-nbuv.gov.ua/cgi-bin/irbis_nbuv/cgiirbis_64.exe?C21COM=2&I21DBN=UJRN&P21DBN=UJRN&IMAGE_FILE_DOWNLOAD=1&Image_file_name=PDF/ekmk_2014_1_7.pdf.
- Kravchenko, K.V. (2011). Management of competitiveness of institute of higher education. *Scientific Bulletin of Donbass*, 3. http://nbuv.gov.ua/j-pdf/nvd_2011_3_17.pdf.
- Romanova, I.B. (2005). Management of the competitiveness of a higher education institution. Ulyanovsk: Middle Volga. scientific. Center. 137 p.
- Lazarev, V.A., Mokhnachev, C.A. (2003). The competitiveness of the university as an object of management: monograph. Yekaterinburg: Suburban News, 160 p.
- Prus, L. (2006) Theoretical principles of managing the competitiveness of higher education institutions. *Herald of Ternopil National Economic University*, 2: 114–123.
- Tardaskina, T.M., Zubkova, I.H. (2013). Components of university competitiveness and determination of methods for its evaluation. http://www.rusnauka.com/12_KPSN_2013/Economics/6_135194.doc.htm.
- Beztesna, L.I., Lybak, I.A. (2017). The essence and factors influencing the competitiveness of higher education institutions. *Economy and Society*, Vol. 9: 145–151. http://www.economyandsociety.in.ua/journal/9_ukr/24.pdf.
- Stebliuk, N.F., Kopieikina, Ye.V. (2018). Assessment of the competitiveness of higher education institutions to determine strategies for their development. *Black sea economic studies*. Vol. 34: 28–32. http://bses.in.ua/journals/2018/34_2018/8.pdf.
- Gryshchenko, I. (2020). 90 years – historical formation of brand capital of Kyiv national university of technologies and design (KNUTD). *Management*, 31(1): 9–24. DOI: 10.30857/2415-3206.2020.1.9. <http://jrnl.knutd.edu.ua/index.php/mng/article/view/589>.
- Shcherbak, V., Shevchenko, O. (2020). University rebranding as an effective tool of competition. *Management*, 31(1): 78–86. DOI: 10.30857/2415-3206.2020.1.7. <http://jrnl.knutd.edu.ua/index.php/mng/article/view/595>.
- Breus, S. V. (2006). The role of innovations in ensuring the competitiveness of the machine-building complex of Ukraine. *Actual problems of economics*, 1: 162–169. <http://chl.kiev.ua/cgi-bin/sp/print/index.php?id=14503>.
- Breus, S. V. (2018). Competitiveness of institutions of higher education in modern conditions. *Black sea economic studies*, Vol. 35 (1): 24–31. <https://er.knutd.edu.ua/handle/123456789/12281>.
- Breus, S.V., Suhoniako, I.I. (2020). Competitiveness of the business entity and the main aspects of its management. *Imperatives of Economic Growth in the Context of Realization of Global Sustainable Development Goals: Abstracts of the International Scientific and Practical Internet Conference Dedicated to the 90th Anniversary of Kyiv National University of Technologies and Design* (Kyiv, April 9, 2020). Kyiv: KNUTD, 197: 64–66. <https://er.knutd.edu.ua/handle/123456789/15705>.
- Breus, S.V., Suhoniako, I.I. (2019). Competitiveness management of higher education institutions. *Management of enterprise development in a dynamic market environment: materials International scientific-practical conf.* (December 27, 2019; Kyiv). Pp. 149–153. <https://er.knutd.edu.ua/handle/123456789/15255>.
- Breus, S.V., Suhoniako, I.I. (2020). Evaluation the competitiveness of higher education institution in the context of managing them. *Market Infrastructure*, 39: 128–136. <https://doi.org/10.32843/infrastruct39-21>. http://www.market-infr.od.ua/journals/2020/39_2020_ukr/23.pdf.

- Tsarenko, I.O. (2015). The methods of evaluation the level of competitiveness of the universities. *Young Scientist*, 2(17): 122–125. <http://molodyvcheny.in.ua/files/journal/2015/2/142.pdf>.
- Independent evaluation of universities: academic rating "Top-200 Ukraine 2020" (2020). <http://euroosvita.net/index.php/?category=11&id=6556>.
- Kaplan, R.S., Norton, D.P. (2005). The Balanced Scorecard – Measures that Drive Performance. <https://hbr.org/2005/07/the-balanced-scorecard-measures-that-drive-performance>.
- Breus, S.V. (2018). Development of evaluation model of economic security institutions of higher education. *Financial and credit activity: problems of theory and practice*, Vol. 2, № 25: 176–182. <https://er.knutd.edu.ua/handle/123456789/9795>.
- Breus, S.V. (2019). Managing the economic security of higher education institutions: problems using hierarchical-facet method. *Uzhorod National University Herald. International Economic Relations And World Economy*, Vol. 24 (1): 55–63. <https://er.knutd.edu.ua/handle/123456789/15250>.
- Official website of Kyiv National University of Technologies and Design, 2017–2020. https://knutd.edu.ua/files/dostupdopi/KNUTD_development_strategy_2019-2023.pdf.
- Kharazishvily, Yu.M., Sukhorukov, A.I., Krupelnytska, T.P. (2013). On improving the methodology of integrated assessment of the level of economic security of Ukraine: an analytical note. <https://niss.gov.ua/doslidzhennya/nacionalna-bezpeka/schodovdoskonalennya-metodologii-integralnogo-ocinyuvannya-rivnyia>.
- On Approval of the Methodology for Calculating Integral Regional Indices of Economic Development. Order № 114 of April 15, 2003 / State Statistics Committee of Ukraine. The order expired (according to the order of the State Statistics Service of Ukraine of March 25, 2016 № 48). http://search.ligazakon.ua/l_doc2.nsf/link1/FIN7184.html.
- Methodical recommendations for calculating the level of economic security of Ukraine: Order of the Ministry of Economic Development of Ukraine dated 29.10.2013 № 1277. <http://www.me.gov.ua/Documents/List?lang=uk-UA&tag=MetodichniRekomendatsii>.

AUTHOR (S) BIOSKETCHES



Breus Svitlana, Doctor of Economic Sciences, Associate Professor. Professor of the Department of Management and Public Administration, Kyiv National University of Technologies and Design, Ukraine.

<https://orcid.org/0000-0003-0624-0219>

Scopus Author ID: 57006782200

Researcher ID: P-3440-2017

E-mail: breus.svitlana@gmail.com



Khaustova Yevheniia, Doctor of Economic Sciences, Associate Professor, Head of the Department of the Department of Entrepreneurship and Business, Kyiv National University of Technologies and Design, Ukraine.

<https://orcid.org/0000-0003-1436-6137>

Scopus Author ID: 57191192602

Researcher ID: Q-8741-2016

E-mail: g.haystova@gmail.com

	<p>Denysenko Mykola, Doctor of Economic Sciences, Professor, Professor of the Department of Economics and Services, Kyiv National University of Technologies and Design, Ukraine.</p> <p>https://orcid.org/0000-0001-8767-9762 Scopus Author ID: 36080249900 E-mail: profden3@gmail.com</p>
	<p>Bondarenko Svitlana, Associate Professor, Associate Professor of the Department of Management and Public Administration, Kyiv National University of Technologies and Design, Ukraine.</p> <p>https://orcid.org/0000-0001-7183-1395 E-mail: sm.bondarenko4610@ukr.net</p>
	<p>Kyrylko Nataliia, Senior lecture of the Department of Management and Public Administration, Kyiv National University of Technologies and Design, Ukraine.</p> <p>https://orcid.org/0000-0002-9099-5229 E-mail: natashaoklirik@bigmir.net</p>

COPYRIGHTS

©2020 The author(s). This is an open access article distributed under the terms of the Creative Commons Attribution (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, as long as the original authors and source are cited. No permission is required from the authors or the publishers.

HOW TO CITE THIS ARTICLE

Breus, S., Khaustova, Y., Denysenko, M., Bondarenko, S., Kyrylko, N. (2020). Methodological approach to assessing the competitiveness of institutions of higher education. *Management*, 2(32): 9–24. <https://doi.org/10.30857/2415-3206.2020.2.1>.