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MEASURING QUALITY AND EFFECTIVENESS OF HEI INTERNATIONALISATION - RESULTS FROM POLAND, CZECHIA, UKRAINE AND THE UNITED KINGDOM

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ABSTRACT. The aim of this paper is to verify the applicability of the toolkit developed to assess and compare the internationalisation of universities in terms of its effectiveness and quality. For this purpose, a survey in the form of a questionnaire (one of the proposed tools) was conducted for a group of 57 universities from Poland, Czechia, Ukraine, and the UK. The toolkit made it possible to rank universities in terms of the quality and effectiveness of internationalisation, and allowed for an individual assessment of the level of internationalisation. Results show there are differences in the level of effectiveness and quality of internationalisation between the four countries surveyed. In the UK and Ukraine, there is significant difference in internationalisation effectiveness ratings for priority and non-priority traits, with better results for priority traits in the UK and better results for non-priority traits in Ukraine. In Poland, there is a significant difference in the level of quality of internationalisation ratings between priority and non-priority traits. Efficiency of internationalisation (effectiveness measure divided by the expenditure on internationalisation) was significantly higher in the UK than in other countries, which may be due to the more mature culture of internationalisation in universities in this country.

Keywords: HEIs internationalisation quality index, internationalisation ranking, internationalisation efficiency, comparative studies, questionnaire of internationalisation.

Introduction

Higher education, a broad segment of the education system, is undergoing significant changes in both developed and developing countries. As it shapes social, economic, and cultural life, society is facing profound changes, in turn. The importance of knowledge and its creative use is growing.

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The extent of globalisation has had a major impact on higher education, and internationalisation has become the prevalent response to this phenomenon. It seems that the international dimension in higher education will remain relevant and will probably continue to gain importance in the agendas of individual institutions and national and regional higher education systems around the world (Altbach et al., 2009). In such new reality, there is a need for transparency, for universal benchmarks and standards that are internationally recognisable and helpful in any given assessment of a university. International academic rankings can play such a role. Research conducted in Poland (Sułkowski et al., 2020) shows that almost 27 per cent of the surveyed rankings are a reliable source of information about universities. Moreover, Feranecová and Krigovská (2016) conducted an international study taking into account the data from QS World University Rankings and financial information received from 67 universities and concluded that university rankings are an important source of comparative information for different groups of stakeholders, influence universities and their funding policies and motivate them to be better in all features. Consideration of the internationalisation aspect of universities appears in many rankings assuming different forms. The Academic Rankings of World Universities rewards international academic success, the Times Higher Education World University Rankings assesses the so-called 'international perspective', the aforementioned QS World University Rankings takes into account the internationalisation rate of staff and the internationalisation rate of students, and U-Multirank includes international orientation as one of its criteria. This undoubtedly demonstrates an important role of internationalisation in development of universities and treatment of this area as one of the key factors for university success. The individual rankings also assign weights to the indicators concerned, where the area of internationalisation is most often assigned a value between 5 and 15 %.

Bearing in mind the need to provide graduates with the right qualifications being the most important goal for a university, the educational goal, it is possible to consider what role the field of university internationalisation plays in achieving this goal. Properly internationalised higher education institutions, which want to educate and prepare students for a globalised world, pay attention to the quality of the internationalisation process, support students in social, academic integration, create a multicultural campus thus helping to develop skills of global graduates who are sought after by employers. According to the 5th Global Survey on Internationalisation by the International Association of Universities (IAU) more than 90% of HEIs have mentioned internationalisation in their mission/strategic plan (Marinoni, 2019). However, it should be noted that HEIs manage this task at different levels, not all of them undertaking international activities on a larger scale. In this context, the need to assess the internationalisation of universities and its level is outlined. This need gives rise to the aim of this paper which is to verify the applicability of the author's toolkit developed to give universities and other units the opportunity to assess and compare the internationalisation of universities in terms of its effectiveness and quality. The verification was made possible by conducting a survey in the form of a questionnaire (one of the proposed tools) in a group of HEIs from four European countries Poland, Czechia, Ukraine and the United Kingdom. The use of the proposed tools made it possible to rank higher education institutions in terms of the quality and effectiveness of internationalisation, and allowed for an individual assessment of the level of internationalisation of each university. In addition, the data obtained allowed the verification of the following hypotheses:

H1: There are differences in the level of effectiveness and quality of internationalisation in the four countries surveyed.

H2: Universities achieve different effectiveness results against characteristics not identified as priorities in comparison to those identified as priorities.

H3: Universities achieve other quality outcomes in relation to characteristics not identified as priorities in comparison to those identified as priorities.

In the course of the analyses, hypothesis H1 was confirmed. Hypotheses H2 and H3 were rejected.

The remaining part of the paper is structured as follows: the first introductory section is followed by a review of the scientific literature. Then, the third section describes the methodology used, i.e. the tools created to measure the quality and effectiveness of internationalisation and how the questionnaire data were collected. The fourth part contains the results of the study and a discussion of them.

1. Literature review

The COVID-19 epidemic has strongly influenced the internationalization of higher education. Student exchanges such as Erasmus were suspended, lectures by foreign professors were cancelled. It would seem that this will significantly deteriorate its quality. However, according to Chasi (2022), Mishchuk et al. (2023), Potjanajaruwit (2023), despite the enormity of problems, the lockdown turned out to be an accelerator of many innovations. Especially this was obvious in steep development of distance learning in universities (Jackson and Konczos Szombathelyi, 2022) which, according to Staniec et al. (2023), can lead in perspective to creating the "agile universities". Ferencz and Rumbley (2022) indicate that there has been a notable uptick in professional development events and resources related to topics such as virtual exchange and collaborative online international learning (COIL) offered by an array of sector-relevant actors. An example is Erasmus+ Blended Intensive Programmes, are intended to encourage the development of short, intensive and joint curricula and activities to provide students and university staff with the opportunity to participate in a short physical group mobility (5–30 days) combined with a digital phase (Perföls & López-Varela, 2022).

As Musiał (2023) rightly points out the present turmoil in the international environment and the situation related to the outbreak of the COVID-19 pandemic or the escalation of war in Ukraine pose new challenges for Higher Education Institutions (HEIs) in implementing their internationalisation policy. In reaction to current issues De Wit and Altbach (2023) offer some recommendations regarding the future of internationalisation, e.g. placing more emphasis on internationalisation of the curriculum at home, making higher education and its internationalization more carbon-neutral by reducing physical mobility of students, academics, and administrators and using more virtual collaborative models, basing global academic engagement on common academic values of inclusion, autonomy, and academic freedom.

1.1. Defining internationalisation of higher education institutions

Before introducing the tool allowing for measurement of quality and effectiveness of internationalisation of HEIs the term of HEI's internalization should be defined. Van der Wende (1997) defines internationalisation in higher education as "a systematic, sustained effort aimed at making higher education (more) responsive to the requirements and challenges related to the globalisation of societies, economy and labour markets". However, Knight (2004) uses the term in the sense of "process of integrating an international, intercultural, or global dimension in the purpose, functions, or delivery of postsecondary education". On the other hand, Altbach (2007) defines internationalisation as "specific policies and programmes undertaken by governments, academic systems and institutions, and even individual departments to deal with globalisation". Buckner and Stein (2020) analysed definitions proposed by "three leading higher education professional associations: NAFSA, the International Association of Universities, and the

European Association of International Education". They found that "that all three rely on similar definitions that emphasize international students, student and scholarly mobility, and curricular change". De Wit et al. (2015) introduced a broad definition of HEI's internalisation stating that it is "The intentional process of integrating an international, intercultural or global dimension into the purpose, functions and delivery of post-secondary education, in order to enhance the quality of education and research for all students and staff, and to make a meaningful contribution to society." Researchers distinguish between internationalisation at home and internationalisation abroad. The term Internationalisation at Home (IAH) was introduced in opposition to internationalisation abroad when, in the late 1990s, Nilsson (1999) noticed that only about 10% of students and a small group of researchers had the opportunity to travel abroad for research purposes. Beelen and Jones (2015) define internationalisation at home as 'the purposeful integration of international and intercultural dimensions into the formal and informal curriculum for all students within domestic learning environments'.

1.2. Measuring internationalisation of higher education institutions

Chang and Lin (2018) point that measuring and assessing internationalization outcomes and their impact is becoming increasingly crucial as outcomes continue to become more central to defining quality in higher education teaching, research, and engagement. In fact, a lot of reasons can be identified for measuring internationalisation: (1) as a component of an institution's overall performance, (2) as an assessment of the effectiveness of an institution's or a component's internationalisation, (3) as a comparison with other institutions, or (4) as an improvement of the university's internationalisation programmes and practices. Green (2012) believes that improvement is a key driver for any type of measurement. Thus, if the main purpose of measurement is improvement, the process of internationalisation should have clearly defined objectives, a careful selection of the measurement indicators used, an appropriate approach to the selection of the study group and a feasible number of measurements. It cannot be ignored that internationalisation is increasingly becoming a tool for competition between universities. The environment requires the institution to stand out from the competition and establish its brand or profile. Measurement indicators can then become markers of success. With the implementation and evolution of the field of internationalisation at universities and the subsequent measurement of internationalisation, universities point to characteristics such as the number of international students, the number of study abroad programs offered or the percentage of students undertaking study abroad. They may also choose to use the indicators to compare their effectiveness with that of other institutions as a quality improvement tool, or to indicate their comparative advantage. *Table 1* provides an example of the data and areas proposed by individual researchers for analysing and assessing internationalisation.

Zhou (2017) views internationalisation of higher education as a dynamic process that takes place at five levels: Global Level, National Level, Institutional Level, Programme Level, and Personal Level. Furthermore, at each level of internationalisation, there is a system that has the same dynamic variables, such as: "Purposes" (i.e., Why does the subject need internationalisation?), "Outcomes" (i.e., What can the subject get from internationalisation?), "Programs" (i.e., Where does the subject need internationalisation?), "Approaches" (i.e., How does the subject achieve internationalisation?), and "Projects" (i.e., What does the subject do in achieving internationalisation?). Each system also shares the same dynamic parameters - the Initial State (i.e., What does the internationalisation look like at the beginning stage?), Attractor State (i.e., What does the internationalisation look like at a relatively stable stage?), Control Parameter (i.e., How does the internationalisation's current state become unstable and move towards a different state?), and Developmental Range (i.e., What does the internationalisation

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look like when it is on the way to the next stable stage?)." Gavurova et al. (2021) point out that when measuring quality of education there is a strong need of a wide range of workforce surveys for the best possible real-life feedback.

Table 1. Examples of data and areas used to analyse and assess internationalization

Author	Data and areas
Gao (2015 and 2018)	Students / international student community, international student experience. Staff / International profile and experience of staff. Research / International joint research projects, implementation achievements. Study programmes / Globally accredited study programmes, joint programmes, specialisations conducted in foreign languages. Management / International representation in leadership, resources invested in international activities. Engagement / Presence in international networks and partnerships. Multicultural campus, Integration of students and academics representing different countries.
Elkin et al. (2005)	International study programmes. International institutional links. Student exchange programmes. Research activities and their international recognition. International research cooperation. Staff interaction in an international context. Support for international students. Participation in international conferences. Foreign students. Staff exchange programmes.
Sandström, Hudson (2018)	International student mobility. International. mobility of staff. International student recruitment. Joint/double degrees. Non-local language programmes. International strategic partnerships. Internationalisation of the campus. Internationalisation of the home curriculum. International recruitment of staff. Activities focused on international rankings. Courses to develop awareness, among other things.
Erkol (2017)	Share of international students. Share of students going abroad. Share of foreign teaching staff. Number of foreign campuses. Number of internationalised curricula. Number of international research projects.
The International Association of Universities (IAU) ¹	Governance structures for internationalisation. Internationalisation at home. Internationalisation of research. Internationalisation of the curriculum. Language policy. Strategic partnerships. Mobility of academic and non-academic staff. Student mobility. Transnational /border education. Online and distance learning.

Source: *own elaboration based on literature research*

The methods used so far to measure internationalisation can be divided into three groups: programme-oriented methods, regionally oriented methods and globally oriented methods. *Tables 2, 3 and 4* contain characteristics of selected methods assigned by the authors to the distinguished groups.

¹ <https://www.iau-aiu.net/Internationalization>, accessed December 15th 2022

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Table 2. Selected methods for measuring program-oriented internationalisation of higher education

Method	Characteristics of the method
MAUNIMO (Mapping University Mobility of Staff and Students)	A research project in which 35 pilot universities tested a tool for mapping student and staff mobility at their universities. The project explored the scope for collecting data and information on mobility, as well as creating university strategies in this area. Beelen, et al. (2013)
EMQT (Erasmus Mobility Quality Tools)	Research project carried out in 2011. It focused on developing tools to help improve the quality of Erasmus mobility. The project was initiated by a large network of universities, with the Coimbra University Group as leader. The study analysed equal dimensions: general organisational models in universities, language preparation, information, student achievement, hosting students and e-coaching or mobility tools. Beelen, et al. (2013)

Source: *own elaboration based on literature research*

Table 3. Selected methods for measuring internationalisation of higher education regionally oriented

Method	Characteristics of the method
EAIE (European Association for International Education)	The survey conducted in 2015 in 33 countries. It provides an overview of the state of internationalisation in the European Higher Education Area (EHEA) from the perspective of a practitioner working in the field of internationalisation. It refers to changes in the field of internationalisation and discusses the tools needed to further professionalise the field. Engel et al. (2015).
ESMU (The European Centre for Strategic Management of Universities)	A benchmarking initiative in higher education coordinated by the European Commission, including internationalisation. ESMU equally covers two processes, self-assessment and benchmarking. The institution has been benchmarking internationalisation for member institutions since 2005. De Wit (2010)
ACE (American Council on Education's)	The survey conducted as of 2017 at 5-year intervals in US higher education. It analyses trends over time and offers recommendations for internationalisation policy and practice. The aim of the method is to determine the extent to which universities are internationalising, i.e. whether they are 'highly active' or 'less active' in internationalisation, and what strategies they have used to reach the desired level. Soler et al. (2022)
Japanese Universities' Strategic Approach to Internationalisation: Accomplishments and Challenges	The study analyses the indicators that Japanese universities consider effective in assessing their internationalisation efforts across the institution. It examines Japanese universities' internationalisation goals and strategies. Ota (2014)

Source: *own elaboration based on literature research*

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Table 4. Selected methods for measuring internationalisation of higher education with a global orientation

Method	Characteristics of the method
International Association of Universities Global Survey on Internationalisation of Higher Education	Global survey conducted as of 2014 at 4-year intervals. It provides data at global and regional level on trends and developments in internationalisation and related forms of policy-making. It examines the reasons for international engagement in different countries and regions and enables comparison of internationalisation rates at the country level. Barbosa, Neves (2020)
International rankings such as QS World University Rankings, ARWU, Perspektywy	Most often, quantitative criteria are taken into account, and their number is limited.
IQRP (Internationalisation Quality Review Process)	The aim of the Internationalisation Assessment Project, IQRP is to assess the quality and validate specific internationalisation initiatives. The IQRP is based on the principles of self-assessment and peer review, based on the institution's own mission and goals. Universities assess and improve the quality of their international dimension according to their own goals and objectives. OECD (1999)
MINT (Mapping Internationalisation)	The method consists of a self-assessment form that relates to the international activities carried out, while looking for a link to internationalisation goals. Van Gaalen (2009) MINT enables higher education institutions to review their internationalisation activities. The method aims to explore coherence between internationalisation goals and activities, identifying internationalisation indicators and aiming to define standards for measuring the impact of internationalisation. Beerkens et al. (2010)
IMPI (Indicators for Mapping & Profiling Internationalisation)	The method focuses on mapping and profiling (choice of university identity) of the internationalisation of higher education institutions. It allows for the inclusion of a large number of indicators (close to 500). It specifies the indicators according to the user's preferences, as well as allowing to narrow down their selection by organising them into categories. This means that there is a diversity of approaches, with some users focusing on very few selected elements/indicators, while others use a large set of indicators to illustrate internationalisation. Brandenburg, Laeber (2015)

Source: own elaboration based on literature research

Measurements of internationalisation are often dominated by an emphasis on initiatives in which mobility plays a key role. Participant numbers are regularly identified as key evidence of the realisation of international activity and are related to aspects such as area development, regression or stagnation. Furthermore, while there are many methods in place to measure internationalisation, they tend to measure it in the present tense and less often undertake an assessment of the change and direction of internationalisation over an assumed period of time. The research methods used provide insights into the effects of national and regional internationalisation policies and are largely, but not exclusively, dominated by quantitative data and the specifics of higher education in a given country, region.

In most cases, existing internationalisation measurement tools provide either data on effectiveness of internationalisation in the output dimension or data on the quality of internationalisation. Whereby the effectiveness of internationalisation is understood as the effectiveness of universities in achieving stated goals, and the quality as the extent to which a

set of relevant internationalisation characteristics meets the requirements of selected university stakeholders. However, it is difficult to find studies that deal with these two variables at once. Furthermore, the assessment of the internationalisation outputs is the point where the evaluation of effectiveness of achieving internationalisation goals stops. In contrast, the other two dimensions of internationalisation are also relevant: outcomes and impact. Outputs are understood more as a direct result of the university's strategy (e.g. number of international students recruited). The impact refers to the longer-term, broader results, of internationalisation efforts (e.g. higher national GDP resulting from economic development). Outcomes, on the other hand, sit somewhere between outputs and the impact providing medium-term evidence of change as a result of the internationalisation model adopted. Moving beyond the assessment of outputs to examine the longer-term outcomes and wider impact of policies and programs is a much more complex proposition methodologically which is considered in the next section of this paper.

2. Methodological approach

The comparative methods used so far as regards the level of internationalisation approach the research mainly on the basis of a narrowed number of indicators and rarely base the research on a broader number of areas of internationalisation. It is also difficult to see how the universities involved in the study can indicate their priority areas or take into account the dynamics of internationalisation and changes over time. It is also not possible to assess the results of the different stages of development and maturity of internationalisation in the research. There is therefore a research gap and an important problem to be investigated, and the research concept presented here can be an important proposal to complement the existing body of science. In addition, the method proposed here helps to assess the outcomes of internationalisation.

The primary method in collecting research materials involved a diagnostic survey conducted using appropriately designed survey questionnaires. The questions included in the survey questionnaires concerned the key areas of internationalisation (*Table 5*).

A total of three research tools are prepared - survey questionnaires tailored to the specific characteristics of a given group of respondents, i.e. 1) A survey for university leaders in the area of internationalisation. The questionnaire includes two parts: qualitative and quantitative. The qualitative part contains 41 questions grouped into 17 characteristics, the quantitative part contained 17 questions, including 8 questions expressed in relative values, such as the number of foreign students in relation to the number of students studying in total. 2) A survey for academic, teaching and administrative staff. The survey includes one part - qualitative, which contained 25 questions grouped into 11 characteristics. 3) A survey for students. The survey also includes one part - qualitative which contained 23 questions grouped into 7 characteristics.

All questionnaires include metrics to allow for additional characteristics of the respondent profile and open-ended questions ensuring freedom of expression. There are three open-ended questions for leaders, staff and students were asked one open-ended question each. The five-point Likert scale is used for the quality questions, and all characteristics surveyed are stimulants.

The innovative nature of the proposed research tool results form, among other things, the possibility of including priority areas for selected universities in the survey questionnaire. In addition, the questionnaire makes it possible to compare the advancement of the internationalisation process of individual universities. Another new approach to the problem of internationalisation is presented by the hybrid analysis which consists in using both

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effectiveness and quality indicators to measure it at the same time. An additional advantage is the possibility for universities to indicate the area of internationalisation where the greatest changes have taken place which allows the results of the study to be related to the dynamics of internationalisation development.

Table 5. Features of internationalisation examined in the survey questionnaire

Feature number	Features used to study the quality of internationalisation	Features used to test the effectiveness of internationalisation
1	Internationalisation strategy and policy at the university	Number of fields of study/specialisations in foreign languages
2	Organisation and management of internationalisation	Number of fields of study /specialisations leading to a joint/ double degree
3	Providing support to students and staff in the area of international activities	Number of international students on the full cycle of education
4	Engagement of the academic community in international activities	Number of nationalities in the student community
5	Mobility/ students' trips abroad	Number of foreign academic teachers teaching regularly for at least one semester
6	Mobility/ Staff trips abroad	Number of outgoing student mobility
7	Internationalisation of curricula	Number of incoming student mobility for studies
8	Partnership and international relations	Number of outgoing administrative staff mobility
9	Internationalisation and the specific environment and labour market	Number of teaching staff mobility
10	Multiculturalism at the university and the structure of the academic community	Number of international scientific publications
11	Accessibility of information on internationalisation	Number of researchers involved in international scientific projects
12	Project approach to implementation of international activities	Number of foreign partner universities
13	International research and scientific publications	Number of foreign branches of the university
14	Staff potential	Number of memberships within international organisations
15	Infrastructure	Number of international accreditations awarded
16	Innovation in the field of internationalisation	Estimated share of the internationalisation budget in the total budget in %
17	Quality assurance system for internationalisation	Estimated share of revenues from internationalisation in total revenues in %

Source: *own elaboration*

All survey forms were prepared in four language versions, i.e. Polish, English, Czech and Russian. Conducting a survey interview was preceded by preliminary information about the purpose of the survey and ensuring the anonymity of the information. The importance of the objectivity of the information provided and the statements and assessments made was also emphasized. The implementation of the research was carried out on the example of universities from the area of broadly defined socio-economic sciences from four countries, i.e. Poland, the UK, Czechia and Ukraine. The research was conducted from June 2021 to January 2023. In groups of staff and students across the university community, the surveys targeted individuals

who were exposed to, actively participated in or organised activities of an international nature. The surveys were carried out using both traditional forms in a Word or PDF document and in electronic form sent to respondents by email as a survey link (Google Forms).

The econometric and statistical tools used to analyze the received survey data are the development pattern method, Wilcoxon signed-rank test, One way Welch's ANOVA, t-test for dependent variables and Kruskal-Wallis rank Anova. Helliwig's (1968) development pattern method is a linear ordering method that belongs to the basic methods of multivariate comparative analysis. The basis for linear ordering is a synthetic variable whose values are estimated on the basis of observations of diagnostic variables describing the examined objects. This method includes such steps as determining the nature of the variables (stimulants, nominants, destimulants), normalization of variables, determining the coordinates of the pattern and anti-pattern of development, calculating the measures of development and assigning ranks to objects on their basis. T test for dependent variables based on paired samples allows for verifying a hypothesis that two means are different that the two means are different, assuming a normal distribution of difference scores (Rietveld, van Hout, 2017). The Wilcoxon signed rank test is an appropriate test for repeated measures design where the same objects are evaluated under two different conditions when the data is not normally distributed. The assumptions to be met are that the pairs of results under consideration are related and that they are at least on an ordinal scale (Scheff, 2016). Welch's ANOVA procedure is frequently recommended as the major alternative to the ANOVA F test (conventional F test of the equality of more than two means) under variance heterogeneity (Jan, Shieh, 2014). Kruskal–Wallis test is performed on rank-transformed data and does not require that the data distributions are normal, but it is assumed that datapoints are independent of each other and that each group has roughly equal variance. Rather than assessing differences of means across groups, it assess differences in median values (Smalheiser, 2017).

3. Conducting research and results

3.1. Sample

A total of 75 universities participated in the surveys including 23 from Poland, 27 from Ukraine, 15 from the UK and 10 from Czechia. A total of 1,531 questionnaires were obtained including: 57 from leaders; 959 from students; 515 from the staff. The condition for including responses from the staff and students of a specific university was to obtain a response from the leader of this university. There were 18 universities from which data was received from leaders or students, no response was received from the leader and therefore these responses were excluded.

Finally, 808 correctly completed survey questionnaires were received from 57 universities including 17 from Poland, 16 from Ukraine, 10 from Czechia and 14 from the UK. As regards groups of respondents the following were received: 57 from leaders; 527 from students; 224 from the staff. It should be noted that in Czechia only the leaders of internationalisation were surveyed. Due to the anonymous nature of the survey, the names of the universities were coded using the following formula: U1 - PL; U18 - UA; U34 - UK, U48 - CZ, etc., where: "U" - university; "1" - consecutive university number; PL, UA, UK, CZ - symbol of the respective country.

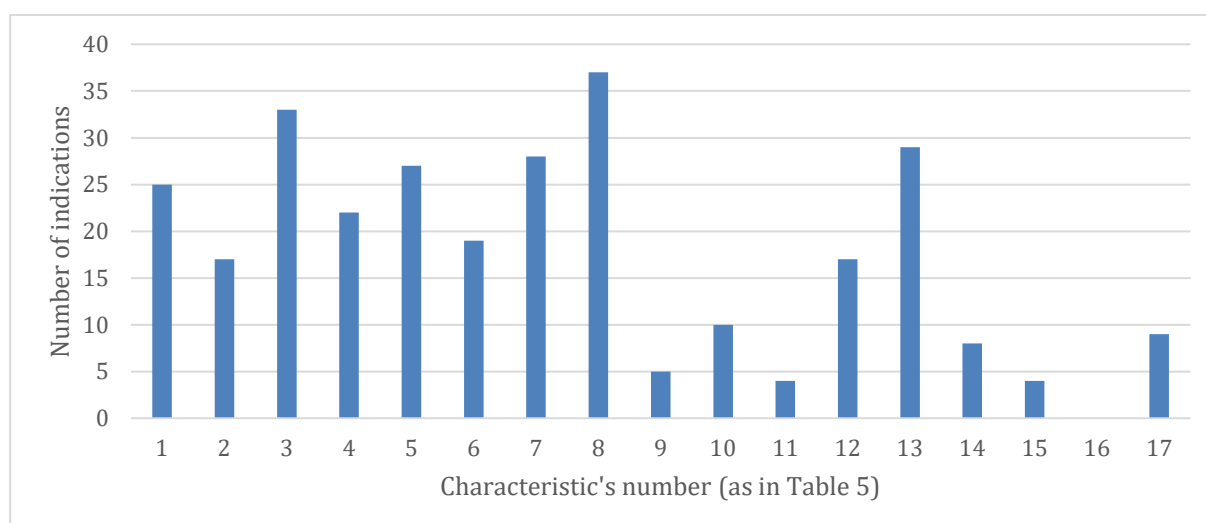
Due to the number of observations, the results obtained in the research should be treated as the results of a case study based on the analysis conducted in 57 universities. By definition, the results cannot be generalised and applied to all universities in the surveyed countries - however, certain trends can be observed as well as regularity.

3.2. Ranking of the surveyed universities in terms of quality and effectiveness of internationalisation

Firstly, in order to verify hypothesis H1 on the basis of the leaders' responses regarding quality and effectiveness, the universities were linearly ordered using Helliwig's (1968) development pattern method. Table 6 contains the values of the obtained measures of development for all surveyed universities both calculated according to the quality and effectiveness criteria. The universities were put in order starting with the best one in a particular ranking ending with the worst one. The average value of development measures calculated according to the quality criterion was 0.5817 in Poland, 0.6029 in Ukraine, 0.7345 in Czechia and 0.6532 in the United Kingdom. The highest ranked university was U9 - PL and the lowest was U36 - UK. One way Welch's ANOVA (performed due to lack of homogeneity of variance) showed that the differences in the mean values of the quality-counted development measures were statistically significant ($p=0.0042$). These results suggest that H1 should be accepted for the quality of internationalisation. In the next step, the average values of development measures calculated according to the effectiveness criterion were calculated. The highest ranked university was U45 - UK and the lowest was U3 - PL. The average development measures across countries amounted to 0.0869 in Poland, 0.0864 in Ukraine, 0.0771 in Czechia and 0.1517 in the UK. One way Welch's ANOVA (performed again due to lack of homogeneity of variance) showed that the differences in the mean values of development measures calculated according to the effectiveness criterion were statistically significant ($p=0.0006$). These results suggest that H1 should also be adopted for internationalisation effectiveness.

3.3. Evaluating the quality and effectiveness of internationalisation for the characteristics identified as priorities

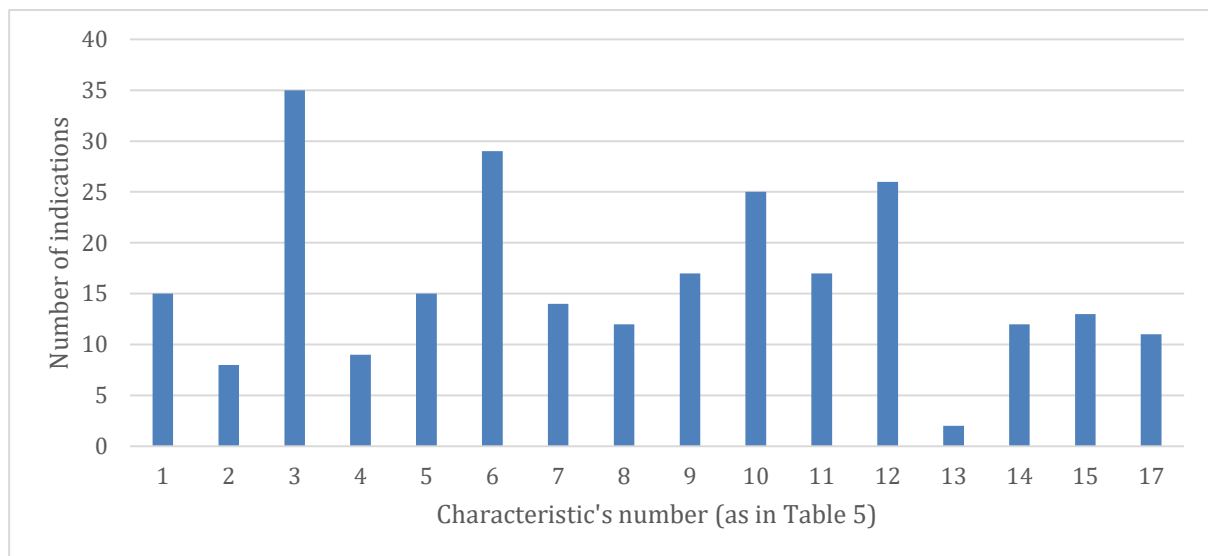
In the part of the survey on the quality of internationalisation, the leaders were asked to indicate what they considered to be the five priority features of internationalisation for their universities (out of the 17 analysed) whereas in the part of the survey on the effectiveness of internationalisation they were asked to indicate three priority features (out of 16). The distributions of the number of indications obtained for each characteristic are presented in *Graphs 1 and 2*.



Graph 1. Number of indications of particular quality characteristics as being a priority for the university

Source: own data

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Graph 2. Number of indications of particular effectiveness characteristics as priority ones for the university

Source: *own data*

In order to verify hypothesis H2, in the first step, as the different units in which the values of the effectiveness characteristics under study were expressed, the values of the variables were standardised. Then, the average of the standardised values for the characteristics indicated as priorities and the average of the standardised values for the characteristics not indicated as priorities were calculated for the individual universities. In the next step, the calculated averages were compared. If the direction of inequality between the averages was constant, this would confirm the hypothesis. With a changing direction of inequality, it would be difficult to assess whether the priority of a trait is related to its evaluation. In addition, statistical tests were carried out to determine whether the average (among all the universities) of the standardised ratings of the characteristics indicated as priority is significantly higher than the average of the standardised ratings of the characteristics indicated as non-priority. In the case of 29 out of 53 universities, the average of standardised values of priority characteristics exceeded the average of standardised values of characteristics not indicated as priority. The mean of the standardised values of the responses of all universities concerning the priority characteristics was 0.0797 and that of the non-priority characteristics was -0.0605. The t-test for paired samples for the comparison of two means could not be applied due to the unfulfilled assumption of normality of the distribution of differences. Therefore, a non-parametric Wilcoxon signed-rank test was performed. This test showed that, at a significance level of 0.4179, it could not be thought that the distribution of standardised effectiveness ratings against priority characteristics differed significantly from the distribution of standardised ratings for non-priority characteristics. This means that hypothesis H2 would have to be rejected. However, carrying out the Wilcoxon signed-rank test by country surveyed, it can be seen that in the UK there is a significant ($p=0.0125$) difference in internationalisation effectiveness ratings for priority and non-priority traits, with priority traits receiving higher ratings. Also among Ukrainian universities there was a significant ($p=0.0229$) difference in scores, but in this case it was the non-priority features that received higher scores on average (see Table 6). In Poland and Czechia, on the other hand, there were no significant differences in the ratings of priority and non-priority characteristics regarding the effectiveness of internationalisation.

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Table 6. Summary of averages of the sum of the differences in priority and non-priority characteristics for the countries surveyed

	Poland	Ukraine	United Kingdom	Czechia
Effectiveness	0.0441	-0.2555	0.9219	0.155
Quality	0.391034	-0.0304	0.073713	-0.1272

Source: own elaboration

With regard to hypothesis H3, as with hypothesis H2, the mean of the quality responses for the qualities indicated as priorities and the mean of the quality responses for the qualities not indicated as priorities were calculated for each university. As all quality characteristics were rated on a five-point Likert scale, as opposed to an effectiveness rating, there was no need to standardise the variables. In the next step, the calculated averages were compared. In case of 35 out of the 57 universities the mean value of the priority characteristics exceeded the mean value of the characteristics not indicated as priorities. The mean value of the responses of all the universities concerning the priority features was 4.21 and that of the non-priority features was 4.1061. The t-test for paired samples again could not be applied, so the Wilcoxon signed-rank test was performed. This test showed that, at a significance level of 0.173, it could not be thought that the distribution of quality ratings against priority features differed significantly from that of non-priority features. This means that hypothesis H3 was rejected. In addition, an analysis of differences by country was conducted. In Poland and the UK, the average ratings of priority traits in terms of quality were higher than the average for non-priority traits. However, only from the Polish data could a statistically significant difference be inferred (t-test for dependent variables, $p=0.0119$). In Czechia and Ukraine, priority traits received lower average scores than non-priority traits, but the differences between the averages are not statistically significant).

3.4. Self-assessment of the quality of internationalisation

As universities do not always have data regarding other universities and they may feel (and rightly so) that it is useful to know the quality of internationalisation in their unit and to assess the quality of internationalisation it is proposed to calculate an indicator of InI [Equation 1].

$$InI = \frac{1}{r} (\omega_L \bar{In}_L + \omega_S \bar{In}_S + \omega_T \bar{In}_E) \quad \text{for } \omega_L + \omega_S + \omega_E = 1 \quad (1)$$

where:

$r = \max\{\theta\}$, θ - the set of possible assessments, if a five-point Likert scale is used

$\theta = \{1, 2, 3, 4, 5\}$

\bar{In}_L - average value of characteristics in leader's assessment

\bar{In}_S - average value of characteristics in students' assessment

\bar{In}_E - average value of characteristics in employees' assessment

$\bar{In}_i = \sum_{k=1}^{n_i} \varphi_k \bar{X}_k$, for $i=L, S, E$

\bar{X}_k - the average value of the responses to the questions assigned to characteristic k. For the leader, this value is the average of his/her responses only, for students and staff it

is the average of the responses of all individuals to the questions assigned to the characteristic.

k- characteristic number, $k=1, 2, \dots, n_i$.

$\omega_i \in [0; 1]$ – weights assigned to the responses of the leader, students and employees, $i=L, S, E$.

$\varphi_k \in [0; 1]$ – weights attributed to the different characteristics.

n_i - number of characteristics analysed (sheet-dependent).

The indicator InI takes values between 0 and 1. The values closer to 1 indicate a higher degree of internationalisation quality, the values closer to 0 a lower degree of internationalisation quality. The use of this indicator allows for a high degree of flexibility. Depending on the individual university's approach, different weights can be assigned to priority and non-priority characteristics or those that are gaining or losing in importance. Different weights can also be assigned to particular groups of respondents depending on how important the responses received from a given group of respondents (leader/staff/students) or the number of questionnaires received from them in the survey are to the interviewer (the smaller the lower the weighting should be). Easily, the survey questionnaire can also change the scale used, for example to a seven-point scale, which can also be taken into account by applying *Equation 1*.

The values of this indicator in the researched group of universities were calculated on the basis of the data obtained from the surveys conducted among all groups of respondents (leaders, employees and students). A rule was adopted that if the number of observations from both the employee and student groups was higher than 30, a weight of 1/3 was assigned to the average responses from these groups (then the leader's responses were also assigned such a weight). If the number of responses from a given group was less than 30, the weight assigned to them was significantly reduced. The values of the indices obtained ranged from 0.6510 for U8 - PL up to 0.9812 for U9 – PL.

3.5. Internationalisation effectiveness understood as the final results of internationalisation (outcomes)

As mentioned earlier, most studies evaluate effectiveness by viewing outputs however it seems much more important, but also more difficult, to assess the outcomes attained by the internationalisation processes. On the basis of the literature studies, the authors assumed that higher outcomes can be obtained when a university achieves high quality internationalisation and high outputs. Ensuring only high quality or ensuring only high outputs will not result in high outcomes. In order to compare the chances of universities to achieve high outcomes, the authors propose to use *Equation 2*.

$$I_{QE} = X * Y - |X - Y| + (X + Y) \quad \text{for } X, Y \in [0,1] \quad (2)$$

where:

X - value of the development measure calculated according to the quality criterion,

Y - value of the development measure calculated according to the effectiveness criterion.

The value of the ratio I_{QE} remains in the range [0:3]. The higher it is, the higher the two scores (according to the effectiveness and quality criterion) are and closer to each other, which means that in such a situation the universities can achieve the goals in the outcomes dimension with the highest effectiveness. Among the universities that provided complete data on quality and effectiveness, the values of the indicator I_{QE} range from 0.0474 for U3 - PL up to 0.6297 for U45 - UK.

3.6. Efficiency of internationalisation

By including the question about estimated share of the internationalisation budget in the total budget [%] in the survey it is possible to assess university efficiency in terms of internationalisation. Estimated outlays for internationalisation in the survey group range from 1% at U21 - UA to 40% at U44 - UK. Efficiency was estimated based on relation of development measure calculated according to effectiveness against the expenditure on internationalisation. The highest efficiency was achieved by U21 - UA, the university with the lowest percentage of expenditure. The lowest efficiency, on the other hand, was achieved by the university that indicated the highest percentage of expenditure on internationalisation in the budget, i.e. U44 - UK. On average, the best performance in terms of efficiency was achieved by the UK universities, the other countries are not much different between each other in this respect. On the basis of the Kruskal-Wallis rank Anova, we can conclude that there are significant differences between the efficiency of internationalisation in the countries studied ($p=0.0024$), with the test of multiple comparisons showing that there are only significant differences between efficiency in universities from the UK and universities from the other countries.

Conclusion

The fact that universities consider internationalisation to be an important area of their operation as confirmed by 97.9 % of universities should be interesting and important from the point of view of this study. The analysis of the research questions also reveals that 100 % of the units declare that internationalisation is taken into account in the university's strategy. It can be assumed that regardless of the specifics of the university, its location, size, achievements to date, each university finds individual justifications for perceiving internationalisation as an important area. These may involve economic, academic, promotional motives, or leverage for broader changes at the university. The need to fit in with global trends in the development of higher education may also be important.

Achieving a high quality and effective internationalisation can depend on a number of factors: proper management of the university, availability of support programmes such as Erasmus +, preparation of staff including language and intercultural competences, adequate financial resources or training. These factors vary from country to country and from university to university, hence ultimately qualitative and effectiveness results may differ.

The results of the survey show that the priority characteristics in the area of internationalisation concerning both quality and effectiveness differ strongly between universities. A total of 16 out of the 17 quality characteristics used in the survey received indications as those considered to be priorities, of the 16 characteristics used to assess the effectiveness of internationalisation (budget outlay could not be indicated) all 16 characteristics received indications. There was also not a single characteristic that was indicated by all leaders. This may be explained by the fact that universities operate in a specific socio-economic environment in which they face various opportunities but also barriers affecting the

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internationalisation model used. The specifics of the environment and a range of conditions may in turn influence how a university justifies the need to develop an area of internationalisation. These may be historical, cultural or political conditions or the location of the university itself or the management model of the unit. How a university justifies for itself the need for internationalisation and what priorities it has may also explain the differences.

The results of the study showed that the assessment of quality against priority areas did not differ significantly from the distribution of ratings of non-priority features. It is puzzling that in Czechia and Ukraine (Table 6) the priority features in relation to the quality of internationalisation were rated lower than the non-priority features (although it cannot be thought that such differences would occur when data from all universities in a country are analysed). This could be explained, for example, by constraints on their implementation, such as international research and academic publications requiring appropriate partnerships or support and grant availability. The reason could also be that universities in these countries happen to be going through some turmoil and their priorities have only recently changed, and therefore this priority has not yet been reflected in the qualitative results.

As already mentioned, there were also no significant differences in the effectiveness results achieved in the priority areas compared to those not identified as priorities. Some barriers to achieving high indicators in these areas could be considered as a likely reason for such results. The universities indicated the three most frequently priority areas; the number of foreign students, the average annual number of outgoing student mobility, the number of foreign partner universities. Achieving high indicators in these areas requires time, a favourable migration policy, adequate financial resources and organisational preparation of the universities. The consequence of this may be that, despite their classification into the most important areas, the results obtained are not so diversified.

Nevertheless, attention should also be drawn to the effectiveness scores in the selected countries. The negative score in Ukraine in the effectiveness assessment, where the number of international scientific publications or the number of foreigners are regarded as priorities, may be due to limitations in their implementation. On the other hand, the high score in the UK, where the number of foreign students is considered the highest priority area, may be justified by the long-standing tradition of admitting foreign students to British universities which has been nurtured and supported by the government.

It should be noted that the applicability of the proposed research tool combining a survey questionnaire and a set of indicators that can be used to assess the quality and effectiveness of the internationalisation of higher education has been verified on the basis of the number of observations, which does not provide full reliability in terms of statistical inference. On the other hand, it has been shown that the tool has as much applicability as possible. However, it is postulated that a study of the effectiveness and quality of internationalisation should be carried out using the presented research methodology on a larger research sample (more universities from individual countries). Undoubtedly, valuable results can be provided by the research on universities representing other countries, also located on other continents, with different political systems, level of democracy, different culture.

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References

- Altbach, P.G. (2007). *Globalization and the University: Realities in an Unequal World*. In: Forest, J.J.F., Altbach, P.G. (eds) *International Handbook of Higher Education*. Springer International Handbooks of Education, vol 18. Springer, Dordrecht. https://doi.org/10.1007/978-1-4020-4012-2_8
- Altbach, P.G., Reisberg, L. and Rumbley, L.E. (2009) *Trends in Global Higher Education: Tracking an Academic Revolution*. A Report Prepared for the UNESCO 2009 World Conference on Higher Education, Paris, 5-8 July 2009. <https://unesdoc.unesco.org/ark:/48223/pf0000183219>, October 5th 2022
- Barbosa, M. L. D. O., & Neves, C. E. B. (2020). Internationalization of higher education: institutions and knowledge diplomacy. *Sociologias*, 22, 22-44. <https://doi.org/10.1590/15174522-104425>
- Beelen, J. (Ed.), Boddington, A. (Ed.), Bruns, B., Glogar, M. (Ed.), & Machado, C. (Ed.) (2013). *Guide of good practices Tempus Corinthiam: PROJECT NO. 159186-2009-1-BE-SMGR*. European Commission.
- Beelen, J., Jones. E. (2015). *Redefining Internationalization at Home*, [in:] A. Curaj, L. Matei, R. Pricopie, J. Salmi, P. Scott, *The European Higher Education Area Between Critical Reflections and Future Policies*, Springer International Publishing, 2015.
- Beerkens E., Brandenburg U., Evers N., van Gaalen A., Leichsenring H., Zimmermann V. (2010). *Indicator projects on internationalisation: Approaches, methods and findings—A report in the context of the European project “Indicators for Mapping & Profiling Internationalisation” (IMPI)*. Gütersloh, Germany: CHE Consult GmbH.
- Brandenburg, U., Laeber, L. (2015) *How do HEIs Measure Internationalisation Today? Analysis of User Profiles in the IMPI Toolbox*, *Internationalisation of Higher Education Handbook*, pp. 36-38.
- Buckner, E., & Stein, S. (2020). What Counts as Internationalization? Deconstructing the Internationalization Imperative. *Journal of Studies in International Education*, 24(2), 151–166. <https://doi.org/10.1177/1028315319829878>
- Chang, D. F., & Lin, N. J. (2018). Applying CIPO indicators to examine internationalization in higher education institutions in Taiwan. *International Journal of Educational Development*, 63, 20-28.
- Chasi, S. (2022). *Re-imagining International Higher Education Partnerships in the Aftermath of COVID-19*. In: Mogaji, E., Jain, V., Maringe, F., Hinson, R.E. (eds) *Re-imagining Educational Futures in Developing Countries*. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-030-88234-1_4
- De Wit, H. (2010). *Internationalisation of higher education in Europe and its assessment, trends and issues*. The Accreditation Organisation of the Netherlands and Flanders.
- de Wit, H. Altbach, P.G. (2023) International Higher Education for the Future: Major Crises and Post-Pandemic Challenges, Change. *The Magazine of Higher Learning*, 55:1, 17-23, <https://doi.org/10.1080/00091383.2023.2151799>
- De Wit, H., Hunter F., Howard L., Egron-Polak E. (Eds.) (2015). *Internationalisation of Higher Education*. European Parliament, Brussels: EU. [http://www.europarl.europa.eu/RegData/etudes/STUD/2015/540370/IPOL_STU\(2015\)540370_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2015/540370/IPOL_STU(2015)540370_EN.pdf), accessed November 11th 2022
- Elkin, G., Devjee, F. and Farnsworth, J. (2005). Visualising the “internationalisation” of universities. *International Journal of Educational Management*, 19(4), 318-329. <https://doi.org/10.1108/09513540510599644>

- Engel L., Sandstrom A.-M., van der Aa R., Glass A. (2015), *The EAIE Barometer. Internationalisation in Europe, EAIE*. <https://www.eaie.org/our-resources/library/publication/Research-and-trends/eaie-barometer-first-edition.html>, October 5th 2022
- Engel, L., Sandström, A.-M., Van der Aa, R., & Glass, A. (2015). *The EAIE barometer; Internationalisation in Europe*. Amsterdam, The Netherlands: EAIE.
- Erkol A. (2017). *Measuring Internationalization of Higher Education Institutions: Selecting Appropriate Criteria* [In:] Siwińska, B. (ed.), Mazurek, G. (ed.), *Czas internacjonalizacji II. Perspektywy, priorytety, projekty*. Dom Wydawniczy Elipsa, Warszawa, 96–112.
- Feranecová, A., & Krigovská, A. (2016). Measuring the Performance of Universities through Cluster Analysis and the Use of Financial Ratio Indexes. *Economics & Sociology*, 9, 259-271.
- Ferencz, I., & Rumbley, L. E. (2022). Europe's post-pandemic internationalisation: Challenges and possibilities in a decidedly networked future. *Higher Education Quarterly*, 76(2), 276-292.
- Gao, Y. (2015). Constructing internationalisation in flagship universities from the policy-maker's perspective. *Higher Education*, 70, 359-373
- Gao, Y. (2018). A set of indicators for measuring and comparing university internationalisation performance across national boundaries. *Higher Education*, 76, 317–336
- Gavurová, B., Belás, J., Čepel, M., Kmecová, I. (2021). Perception of the quality of educational system for entrepreneurship – comparative analysis. *Acta Polytechnica Hungarica* [online]. 2021, 18(3), 65-86.
- Green, M.F. (2012). Measuring and assessing internationalization. NAFSA: Association of International Educators. https://goglobal.fiu.edu/_assets/docs/m-green-2012-measuring_and_assessing_internationalization.pdf, accessed November 11th 2022
- Hellwig, Z. (1968). Zastosowanie metody taksonomicznej do typologicznego podziału krajów ze względu na poziom ich rozwoju oraz zasoby i strukturę wykwalifikowanych kadr. *Przegląd Statystyczny*, 4, 307-327.
- Jackson, K., & Konczos Szombathelyi, M. (2022). The influence of COVID-19 on sentiments of higher education students - prospects for the spread of distance learning. *Economics and Sociology*, 15(3), 216-247. <https://doi.org/10.14254/2071-789X.2022/15-3/13>
- Jan, S. L., & Shieh, G. (2014). Sample size determinations for Welch's test in one-way heteroscedastic ANOVA. *British Journal of Mathematical and Statistical Psychology*, 67(1), 72-93.
- Knight, J. (2004). Internationalization Remodeled: Definition, Approaches, and Rationales. *Journal of Studies in International Education*, 8(1), 5–31. <https://doi.org/10.1177/1028315303260832>
- Marinoni, G. (2019). Internationalization of higher education: An evolving landscape, locally and globally: IAU 5th Global Survey. DUZ Verlags-und Medienhaus GmbH. https://www.iau-aiu.net/IMG/pdf/iau_5th_global_survey_executive_summary.pdf, accessed October 5th 2022
- Mishchuk, H., Czarkowski, J. J., Neverkovets, A., & Lukács, E. (2023). Ensuring Sustainable Development in Light of Pandemic “New Normal” Influence. *Sustainability*, 15(18), 13979. <https://doi.org/10.3390/su151813979>
- Musiał K. (2023) Internationalization as myth, ceremony and doxa in higher education. The case of the Nordic countries between centre and periphery. *Nordic Journal of Studies in Educational Policy*, 9:1, 20-36, <https://doi.org/10.1080/20020317.2023.2166344>

 INTERDISCIPLINARY APPROACH TO ECONOMICS AND SOCIOLOGY

- Nilsson, B. (1999, Spring). Internationalisation at home—Theory and praxis. EAIE Forum, following Nilsson B (2003). Internationalisation at home from a Swedish perspective: The case of Malmö. *Journal of Studies in International Education* 7(1): 27-40
- OECD (1999). *Quality and Internationalisation in Higher Education*. OECD Publishing, Paris, <https://doi.org/10.1787/9789264173361-en>.
- Ota, H. (2014). *Japanese Universities' Strategic Approach to Internationalization: Accomplishments and Challenges*. In: Yonezawa, A., Kitamura, Y., Meerman, A., Kuroda, K. (eds) *Emerging International Dimensions in East Asian Higher Education*. Springer, Dordrecht. https://doi.org/10.1007/978-94-017-8822-9_12
- Potjanajaruwit, P. (2023). The influence of technology leadership on university lecturers integrating technology in Thailand. *Human Technology*, 19(3), 435–452. <https://doi.org/10.14254/1795-6889.2023.19-3.7>
- Perföhl, R., López-Varela, A. (2022). Internationalisation of Teaching and Learning through Blended Mobility: Potentials of Joint International Blended Courses and Challenges in Their Implementation. *Education Sciences*, 12(11), 810. <https://doi.org/10.3390/educsci12110810>
- Rietveld, T., & van Hout, R. (2017). The paired t test and beyond: Recommendations for testing the central tendencies of two paired samples in research on speech, language and hearing pathology. *Journal of Communication Disorders*, 69, 44-57.
- Sandström, A.-M., Hudson, R. (2018) *The EAIE Barometer: Internationalisation in Europe (second edition)*, European Association for International Education, <https://www.eaie.org/our-resources/library/publication/Research-and-trends/eaie-barometer-second-edition.html>, accessed December 15th 2022
- Scheff, S. W. (2016). *Fundamental statistical principles for the neurobiologist: A survival guide*. Academic Press.
- Smalheiser, N. R. (2017). *Data literacy. How to Make your Experiments Robust and Reproducible*. Academic Press. Chapter 12—Nonparametric Tests, 157-167.
- Soler, M.C., Ji Hye J.K., Cecil B.G. (2022). *Mapping Internationalization on U.S. Campuses: 2022 Edition*. Washington, DC: American Council on Education. <https://www.acenet.edu/Documents/Mapping-Internationalization-2022.pdf>, accessed December 15th 2022
- Staniec, I., Kaczorowska-Spychalska, D., Kalinska-Kula, M., & Szczygiel, N. (2023). The need to work from home in higher education during the first phase of COVID-19: Employee productivity, autonomy, work relationships, job satisfaction and well-being. *Journal of International Studies*, 16(4), 257-280. <https://doi.org/10.14254/2071-8330.2023/16-4/17>
- Sułkowski, Ł., Gregor, B., & Kaczorowska – Szychalska, D. (2020). Rankings in Students' decision-making process in Poland – implications for university management. *Journal of International Studies*, 13(3), 296-308. <https://doi.org/10.14254/2071-8330.2020/13-3/19>
- Tomaszewski, J. (2022). *Efektywność i jakość umiędzynarodowienia w szkolnictwie wyższym - studium komparatystyczne Polski, Wielkiej Brytanii i Ukrainy*. PHD thesis, source: <https://bip.wroclaw.wsb.pl/attachments/745/download>, accessed February 15th 2023
- Van der Wende Marijk. (1997). *Missing Links - The Relationship between National Policies for Internationalisation and those for Higher Education in General*. [in:] *National policies for internationalization of higher education in Europe*, Van der Wende M. (ed.), Kalvemark, T. (ed), Hogskoleverket Studies 1997:8
- Van Gaalen, A. (2009). *Developing a tool for mapping internationalisation: a case study*. Measuring success in the internationalisation of higher education, 77-91.
- Zhou, J. (2017). Assessment of internationalization of higher education: Theoretical contributions and practical implications. *NAFSA Research Symposium Series*, 1, 31-49.