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The Research and Teaching Nexus from the Perspective of External Quality Evaluation

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Abstract

This paper aims to investigate relationships among nine institutional quality dimensions in order to identify the effect of each quality dimension on the others in an institutional evaluation. The relationships between 9 quality dimensions in 78 institutional evaluations are explored quantitatively using the Pearson correlation matrix. The results show that teaching quality dimensions are interrelated, as are research dimensions, suggesting a clear separation between the teaching and research characteristics of institutions, nationally. However, the analysis points out that full-time faculty adequacy is a good predictor of quality of both teaching and research. Findings of this study contribute to the evaluation of the institutional teaching and research nexus as well as to the discussion on the role of peer review in external quality evaluation schemes.

Key words: *full-time faculty adequacy; higher education; peer review; quality assurance; teaching; research.*

Introduction

Increasing numbers of higher education institutions, greater student participation in the higher education system, and stakeholders' interest in the quality of higher education all raise a number of questions related to institutional quality. At the same time, the number and variety of institutional quality evaluations is also growing, more and more of which are presented in a way understandable to stakeholders (Tetteh et al., 2021). The multitude of quality evaluations, classifications and rankings (Blanco-Ramírez & Berger, 2014) at the institutional level often implies additional work for the staff and management of these institutions (Cardoso et al., 2018).

Institutional quality evaluation exercises entail sets of measures and indicators, serving as proxies for inherent institutional characteristics (Simpson, 2016). Their operationalization into institutional dimensions enables more detailed insight into various aspects of institutional activities and gives an overview of their quality. The quality of the institution as a whole is evaluated and presented as the sum of the qualities of all its dimensions. However, the connections and interrelationships these dimensions have with, and the effect they have on, each other often seem to be overlooked.

In this context, quality assurance includes the activities of higher education institutions, such as teaching and research, and the societal role of higher education institutions and teachers (Ćulum et al., 2014). Aspects related to teaching include curriculum, the evaluation of student achievements and ultimately, teaching methods and learning outcomes (Neumann, 2002), while the quality of research in this context is understood primarily as the scientific activity and productivity of the institution.

Evaluations for accreditation purposes include a much broader set of indicators covering different performance areas that are further contextualized through peer review. Accreditation is understood as a system of external control that enables the preservation of the higher education system (quality control) and as a tool for quality enhancement as an internal function. In other words, accreditation functions as a significant mechanism for maintaining credibility and improving institutional quality (Gerón-Piñón et al., 2021).

In this way, accreditation, is very beneficial for the management of the institution and is a supportive tool in carrying out quality assurance activities (Cret, 2011). In order for the results of evaluations to be used effectively for this purpose, it is crucial to understand how institutional activities interact and affect each other.

This study aims to examine the relationships among institutional quality dimensions using perceptual measures to identify the effect of each quality dimension on the others in an institutional evaluation.

Literature overview

To interpret the relationships among quality dimensions the paper draws on the multifaceted characteristics of quality in higher education (Harvey & Newton, 2004; Kleijnen et al., 2011). The variety of approaches to the concept of quality is depicted and further reflected in institutional evaluation methodologies (Leiber, 2019; Cardoso et al., 2016).

Quality perspectives in institutional evaluations

External evaluation of the quality of an institution encompasses a variety of processes based on different concepts of quality, which, as is seen in the literature, are ambiguous and difficult to determine (Newton, 2000). Given the fact that quality is a concept driven by value, numerous approaches to its definition can be identified (Harvey & Green, 1993; Van Kemenade et al., 2008). This study is based theoretically (Cardoso et

al., 2016) on a threefold classification of perspectives of quality in higher education – quality as culture, quality as compliance and quality as consistency. Quality as culture encompasses academics' responsibility for quality and its enhancement through institutional processes and structures. External policies that affect the internal quality assurance of an institution represent quality as compliance. Quality as consistency links higher education assessment standards to their assessment processes and reconciles their results with the other quality assurance mechanisms.

As the nature of quality is multidimensional (Vroeijenstijn, 1995), goals of institutional evaluations and quality assurance change as the focus of evaluation changes (Salmi & Saroyan, 2007). Thus, institutional quality activities include a wide range of accountability, control and improvement mechanisms. These activities also aim to meet the requirements of multiple stakeholders (Rosa & Teixeira, 2014), ultimately providing information on the quality of teaching, learning, research and other institutional functions reflected through input, processes and output performance measures (Sarrico et al., 2010).

Institutional quality and quality practices – accreditation, rankings and peer review

European higher education systems have adapted their quality assurance activities differently as not all quality assurance systems are in the same phase of development (Jeliazkova and Westerheijden, 2002). However, a synchronizing element of external quality evaluation activities exists under the umbrella of the supranational Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG). These guidelines and principles are translated into national contexts through external evaluation exercises that are based on quality dimensions composed of a mixture of indicators depending on the purpose (Jongbloed and Westerheijden 1994; Van Damme, 2004) and scope of evaluation (institution or program). Quality dimensions are examined further by peer reviews and are based on self-evaluation reports and site-visits (Damian et al., 2016).

Accreditation, as a quality assurance activity, is focused on assessing institutions and deciding whether their programs meet minimum academic standards. Furthermore, accreditation stimulates institutional quality enhancement mainly through evaluation committees' recommendations for improvement. Ultimately, accreditation improves teaching and learning as well as the relationship between them (Rosa et al., 2012).

While accreditation highlights the teaching and learning component of institutional quality, often named as educational effectiveness, international rankings do not distinguish between the qualities of learning and service (García et al., 2012). Moreover, external quality assessments, such as accreditation, rely on quality practices that are different from those of academic rankings, which often reflect an institution's reputation.

The quality of teaching, research and the societal role of universities, as well as various other institutional activities, are represented in external evaluations, such as accreditation, through institutional quality dimensions (Dill, 2010) which are

complemented with discipline relevant peer evaluation. Subsequently, on the one hand, the results in reputation schemes derive from effectiveness and bibliometric indicator analysis, on the other, in external quality evaluation, peer judgments play an essential role (Jongbloed & Westerheijden, 1994). The quantitative indicators used for evaluating institutional performance or individual teaching staff performance for the purpose of appointments and promotions, have been proven not to be fully reliable when the institutional context is not taken into account (Bonaccorsi et al., 2017).

In order to moderate quantitative and non-contextual effects, procedures and assessments in higher education traditionally rely on peer assessment. The role of informed peer assessment in quality assurance is interpretative, and decision-making, therefore, is very important for quality enhancement activities. The specific characteristics of peer assessment judgments in evaluation exercises has been discussed in the literature related to different perceptions of quality (Lamont & Guetzkow, 2016), to the evaluation of the societal impact of research (Derrick & Samuel, 2016), and to the literature on the roles of teaching and learning and peer review in quality assurance procedures (Langfeldt et al., 2010). In this study we focus on the quantitative nature of the peer assessment process, which provides specific information on institutional performance as well as interactions between institutional quality dimensions.

Institutional quality dimensions and their interrelationships

Quality dimensions related to teaching and learning, research and the societal impact of higher education institutions are translated into sets of indicators. In Quality assurance systems such as accreditation, classification, and ranking, indicators are divided into three groups— according to input characteristics, processes and outputs (Van Damme, 2004; Usher & Savino, 2007). An analysis of the quality aspects related to inputs is decisive in input-related quality models. Input indicators refer to spatial and human resources, student intake and admission requirements. Quality dimensions related to process indicators imply quality of institutional activities related to teaching and learning as well as the mission and the objectives of institution. A recent trend in quality assurance systems moves the focus from input to output quality dimensions (Tam, 2014). Output indicators refer to the achievement of program objectives as defined by learning outcomes and the economic, social, and cultural impacts of graduates. Additionally, in academic rankings, apart from input, process, and output groups of indicators, research and reputation indicators carry the greatest weight (Dill & Soo, 2005).

Existing studies on the interrelationship of institutional quality dimensions report a positive research-teaching nexus for individual academics (Mägi & Beerkens, 2016), patterns of student assessment, institutions and discipline (Simpson, 2016). Research to date has explored the influences of institutional quality dimensions on evaluation outcomes using both quantitative and qualitative measurements (Bergseth et al., 2014).

Two studies looked at the relationships between quality dimensions from astudents' perspective (Lagrosen et al., 2004; Ardi et al., 2012). The dimensions of quality

influencing student satisfaction were commitment of faculty management, quality of course delivery, and the ease of giving feedback for quality improvement (Ardi et al., 2012). Lagrosen et al. (2004) also report on quality dimensions that are the most important to students, which are related to learning resources and teaching and learning dimensions. In contrast to earlier studies looking at the relationships among institutional quality dimensions from academics', students' and rankers' points of views, this investigation uses an approach based on the reviewer's perspective.

Another study on this topic discusses the link between quality practices and the interdependence of quality dimensions as presented from the perspective of teachers, non-teaching staff, students and administration (Cardoso et al., 2018; Jungblut et al., 2015; Dužević, 2015) or from graduates' and employers' points of views (Lukman, et al., 2010; Shah et al., 2015), who are involved as external stakeholders. In contrast, this analysis explores the relationship between quality dimensions from the reviewer teams' perspective, providing a richer understanding of institutional quality as defined by (Cardoso et al., 2016). Moreover, this study provides useful insight into the potential of peer evaluation for interpreting quality at the institutional level, which has remained almost negligible.

Croatian context

The higher education system in Croatia includes 125 higher education institutions with about 162,000 students. Its heterogeneity is significant given that there are professional and university study programs that can be either public or private in terms of funding. Over 80 % of teachers and students are in public institutions that offer university programs.

The introduction of a national quality assurance system is directly related to the commitments made by signing the Bologna Declaration and aimed to revise existing study programs, transforming them into tricyclic ones. The national system's development relates to the requirement on evaluating and verifying that all institutions in the system meet the minimum academic requirements. In the first implementation cycl, minimum academic requirements reflected the quality of inputs and resources prescribing the necessary number of teachers and spatial conditions; in the still ongoing second cycle, there is a stronger emphasis on teaching and learning outputs (Willis & Kissane, 1997).

The quality assurance framework in Croatia includes several procedures such as (re) accreditation, audit and thematic evaluation conducted by the national accreditation authority, the Agency for Science and Higher Education (ASHE). Institutional re-accreditation is the process of evaluating minimum academic conditions, attributed by a quality grade and recommendations for improvement. Its first cycle took place from 2010 to 2016 and encompassed all public and private providers. Given that private providers, at that time, offered only professional study programs, in this study we focus on public universities and their constituents.

Methodology

Quality dimensions used in the re-accreditation procedure were publicly accessible, checked through ENQA as well as EQAR compliance procedures with the ESG (ENQA, 2015). These are dimensions that are included in different types of evaluation at the national and global level and include input, process and output indicators of teaching, research and community engagement. Given that national and international accreditations and rankings cover multiple aspects of institutional quality presented through indicators, this analysis follows the indicators frequently applied in accreditation and rankings (Gerón-Piñón et al., 2021).

Sincesmaller revisions were made in the formulation of some indicators in evaluation standards during this evaluation cycle, only indicators that remained unchanged during this whole five-year time framework were taken into consideration. From these, nine institutional quality dimensions were extracted, for which the expert committee quantitatively evaluated the level of implementation.

The analysis includes 78 out of 125 evaluated institutions. This sample only included institutions that provide university study programs, i.e., institutions which conduct a scientific activity. The other 47 institutions are polytechnics providing professional study programs. The main difference between these two categories is that, according to ASHE protocols, the same evaluation methodologies do not apply to both types of institutions, so only the larger set of institutions universities) was included in the study. The difference in evaluation methodologies relates to the research quality dimensions, as polytechnics are focused on applied and professional outputs of their research activities.

This study analyzes nine quality dimensions of higher education institutions (Table 1), namely, international comparability of study programs, learning outcomes, assessment of learning outcomes, admission requirements, full-time faculty adequacy, number of teaching staff, student/full-time faculty ratio, adequate number of peer-reviewed scientific publications and institutional reputation.

Reports of institutional reaccreditation publicly available on the ASHE website are based on the reviewer teams' scores, scaling from 1 to 5 (5 being of the highest quality) and covering each of the nine quality dimensions (Table 1). The quality grades were averaged, and correlations between the nine quality dimensions were further analyzed. Namely, the correlation matrix, using the Pearson correlation coefficient, was analyzed and presented in Table 2. The analysis was performed with the statistical software SPSS for 78 HEIs in Croatia, and the data were collected for the period between 2012 and 2018.

Table 1
Institutional quality dimensions evaluated in re-accreditation of public universities in Croatia from 2010-2016

Dimensions	Criterion	Score
International comparability of study programs	The content and quality of each study program conform to internationally recognized standards and ensure the international recognition of the program's qualification	1 - 5
Learning outcomes	Student learning outcomes, set by the teachers and stated at the level of the study program and its courses, clearly describe the knowledge and skills of graduates	1 - 5
Assessment of learning outcomes	Teachers of a study program ensure that the assessment of student learning, regardless of its modality, is aligned with stated learning outcomes, represents the full range of learning being assessed, and assesses learning at the level of rigor appropriate to the qualification level.	1 - 5
Admission requirements	The competencies of applicants, evaluated upon admission, are aligned with the competencies required in their future careers, and the admission criteria are regularly reviewed for their effectiveness in predicting student success in a program.	1 - 5
Full-time faculty adequacy	The number and qualifications of the teachers are in line with the strategic goals of the institution and adequately cover core disciplines.	1 - 5
Number of teaching staff	The institution demonstrates the employment of a sufficient number of full-time teachers at a study program to ensure the quality and continuity of teaching and learning.	1 - 5
Student/full-time faculty ratio	The institution, maintains an optimal ratio between students and full-time teachers.	1 - 5
Adequate number of peer-reviewed scientific publications	The institution documents (numerous) examples of its scientific productivity, such as both Croatian and international publications, citations, patents, and others.	1 - 5
Institutional reputation	At all levels of the institution, research is acknowledged as a contributing component of its overall activity, as can be evidenced by intellectual contributions to the institution and its reputation.	1 - 5

Results

Statistically significant positive and moderate correlations were found between international comparability of study programs and the following HEI quality dimensions: assessment of learning outcomes (r=0.329), admission requirements (r=0.275), full-time faculty adequacy (r=0.436), number of teaching staff (r=0.388), adequate number of peer-reviewed scientific publications (r=0.383) and institutional reputation (r=0.472). In addition, a statistically significant positive correlation was found between assessment of learning outcomes and the following two dimensions: number of teaching staff (r=0.319) and student/full-time faculty ratio (r=0.328). Furthermore, a statistically significant positive correlation was found between full-time faculty adequacy and the

following quality dimensions: number of teaching staff (r=0.408), student/full-time faculty ratio (r=0.375), adequate number of peer-reviewed scientific publications (r=0.367) and institutional reputation (r=0.432).

Table 2
Pearson correlations between institutional quality dimensions

Institutional quality dimensions	v1	v2	v3	v4	v5	v6	v7	v8	v9
International comparability of study programs (v1)	1	0,115	**,329****	**,275***	**,436****	**,388****	0,194	**,383****	**,472****
Learning outcomes (v2)		1	0,121	0,126	0,024	0,081	0,115	0,077	-0,038
Assessment of learning outcomes (v3)			1	0,121	0,211	**,319****	**,328****	0,167	0,106
Admission requirements (v4)				1	0,039	0,125	0,078	0,145	0,105
Full-time faculty adequacy (v5)					1	**,408****	**,375****	**,367****	**,432****
Number of teaching staff (v6)						1	**,268***	**,227***	**,291****
Student/full-time faculty ratio (v7)							1	0,187	0,186
Adequate number of peer-reviewed scientific publications (v8)								1	**,741****
Institutional reputation (v9)									1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Number of teaching staff has shown to be positively correlated with student /full time faculty ratio (r=0.268), adequate number of peer-reviewed scientific publications (r=0.227), and institutional reputation (r=0.291). Student/full-time faculty ratio was statistically significant and positively correlated with Assessment of learning outcomes (r=0.328) and Full-time faculty adequacy (r=0.375). Adequate number of peer-reviewed scientific publications was moderately positively correlated with international comparability of study programs (r=0.383) and full-time faculty adequacy (r=0.367) and strongly positively correlated with institutional reputation (r=0.741). Lastly, institutional reputation was found to be moderately and positively correlated with international comparability of study programs (r=0.472), full-time faculty adequacy (r=0.432) and number of teaching staff (r=0.291). In addition, institutional reputation has shown to be strongly positively correlated with adequate number of peer-reviewed scientific publications (r=0.741).

Discussion

Institutional dimensions of teaching quality

The international comparability of study programs quality dimension designates the outcome of the teaching process and students' achievement of defined goals that conform to given program specifications. International comparability of study programs, along with the program learning outcomes, is considered an output of teaching and learning activities. Its moderate correlation with other quality dimensions suggests that education provision quality can be perceived as a product of institutional input – resources qualities (admission requirements, full-time faculty adequacy, number of teaching staff) and quality of provision (adequate number of peer-reviewed scientific publications and institutional reputation).

At the individual student level, learning outcomes are used to express what learners are expected to achieve and how they are expected to demonstrate that achievement (Tam, 2014). One of the targets of the Bologna Process in Europe was that all programs offered by higher education institutions should be based on the concept of learning outcomes and that curriculum should be redesigned to reflect them. It is a complex quality dimension strongly positively correlated with international comparability of study programs, number of teaching staff and student/full-time faculty ratio. It covers quality attributes mostly related to appropriate assessment methods, their variety, adequacy and standardized rigour. International comparability of study programs presupposes that the set of intended learning outcomes of a program is in line with comparable first and second Bologna cycle degree levels.

The assessment of student learning is a very important step in evaluating the quality of teaching. It includes verification that students have achieved the scope and level of intended learning outcomes, and that teachers are dedicated to providing an adequate form of assessment. Assessment should rely on a variety of methods, which may be discipline sensitive (Ylonen et al., 2018), and based on predetermined learning outcomes. Chalmers et al. (2008) noted that assessment can support institutional improvement. The interaction of both international comparability of study programs and assessment of learning outcomes has been categorized in learning performance indicators according to Leiber's (2019) classification of indicators of teaching and learning in higher education. Academic achievement standards are connected with assessment methods and rely on goal-directed student learning encompassing targeted feedback and monitoring (Groccia, 2012). Ultimately, it helps to ensure that final year assessments and standards within the courses and comparable learning outcomes are aligned to other institutions in the international arena (Sefcik et al., 2017). The strong connection between quality of learning and institutional teaching quality (student/full-time faculty ratio and number of teaching staff) suggests an interrelationship between both processes (Dužević & Čeh Časni, 2015).

According to learning and teaching indicator classification, the full-time faculty adequacy dimension covers two subdomains – the learning environment and the

teaching environment. Well-qualified teachers are a prerequisite for quality teaching and student learning. 'Teacher quality' is a composite term indicating the explicit qualification of the faculty and implicit teacher characteristics, such as ability, commitment, motivation supported by the adequacy of hiring procedures, faculty availability, professional development and recognition of teaching abilities (Aithal & Kumar, 2016). The quality of learning process is inherent in input indicators such as number of staff and students, and quality of the teaching process through teacher competencies (Leiber, 2019). Previous research supports the significance of full-time faculty adequacy for its positive influence on the research performance of individuals and institutions (Cadez et al., 2017; Flander et al., 2020; Shin, 2011), ensuring that full-time faculty fulfil institutional missions of teaching andresearch (Stensaker, 2015; Pham & Paton, 2019). Reviewer perception of full-time faculty adequacy positively correlates with international comparability of study programs and on other quality dimensions reflecting the learning and teaching environments, especially teaching resources (Leiber, 2019), such as number of teaching staff and student/full-time faculty ratio. The results indicate that the type of evaluation enforced by input measures is linked to resource-input of quality assurance of education approaches, in which it is assumed that quality resources are essential for achieving mission objectives and providing quality teaching and research. On the other hand, their positive correlation with output quality dimensions related to perceived international comparability of study programs, research productivity (adequate number of peer-reviewed scientific publications) and institutional reputation, indicates that the quality of inputs strongly correlates with the outputs of institutional teaching and research performance. Following this analysis, full-time faculty adequacy is the quality dimension demonstrating the greatest number of relationships with the other quality dimensions, influencing both the teaching and research quality of institutions (academic quality).

The number of full-time faculty is a decisive indicator used by accreditors to ensure fulfilment of institutional missions (teaching, research and the societal role). Previous research noted (Pham & Paton, 2019) that faculty staffing impacted student learning, demonstrating a negative relationship between high numbers of part-time faculty and learning outcome. Ensuring the minimum legal number of fully employed teachers emerged from the concept of the academic quality of resource (input) evaluation approach, implemented in the case of scarcity of quality resources available to the institution (Cheong Cheng & Ming Tam, 1997; Jokić & Petrušić, 2016). A similar evaluation rationale has beennoted in other European countries (Rosa et al., 2006). For Croatia, interestingly, the only quantitative requirement that needs to be met by each institution, has a moderate impact on other perceived teaching quality dimensions, specifically,international comparability of study program, assessment of learning outcomes, and full-time faculty adequacy. The number of teaching staff has, however, influenced institutional reputation. These results indicate that there is no direct or strong link between number of teaching staff and quality of teaching, as is the case

with full-time faculty adequacy and student/full-time faculty ratio. This also might suggest that there is no direct, strong link between the number of full-time faculty and institutional teaching performance, but that there is a strong link between number of full-time faculty and teaching competencies, as reflected through the indicator implying number of publications by teaching staff per taught field (Leiber, 2019). On the other hand, the correlation between number of teaching staff and the institutional reputation quality dimension indicates that the link between input and output measures is, in this case, achieved. The impact of number of teaching staff on reputation of the institution indicates that an adequate distribution of teaching and research workload results in better reputation based on the quality of research output.

The student/full-time faculty ratio, in quality assessments and academic rankings, is often used as a proxy for the teaching and learning quality environment, representing a share of teaching resources available for students. Lower student/full-time faculty ratio contributes to an effective learning environment and is frequently used to assess the quality of education (Marginson & van der Wende, 2007). Along with another teaching resource indicator, full-time faculty adequacy, the student/full-time faculty ratio reflects the effort made by universities to ensure that their students experience a greater personal approach to learning . A quality education process, and with it the quality of assessment of learning outcomes, is an important indicator that captures learning (Leiber, 2019) is defined particularly in the 2015 revision of the European Standards and Guidelines terms, as student-centred learning (Manatos & Huisman, 2020). In terms of links between teaching and research quality, evidence suggests that a lower student/full-time faculty ratio contributes to better distribution of faculty teaching, research and administrative workload.

Institutional dimensions of research quality

A strong correlation between institutional reputation indicators and an adequate number of publications is clearly visible in academic rankings, especially global ones that assign a significant weight to scientific productivity indicators. In this particular case, the indicator of scientific productivity (quantity) moderately affects the international comparability of study programs and full-time faculty adequacy, an indicator in the teaching quality category. Although the scientific productivity indicator is related to a quantity component, it is not always related to quality. Analysis of the relationship between the scientific productivity and quality of teaching on one hand, and the high-quality scientific activity and quality of teaching on the other, suggests that their relationship is evident only in the case of a correlation between quality of publications and the quality of teaching (Cadez et al., 2017). The positive and negative connections between teaching and research (Marsh & Hattie, 2002) have been extensively elaborated upon in the literature, and the results point to similar conclusions.

The institutional reputation dimension is strongly influenced by perception of Adequate number of peer-reviewed scientific publications and is moderately influenced

by international comparability of study programs, full-time faculty adequacy, and faculty staff sustainability. This effect reflects the judgment of the reviewers, which, in the end relies on the reputation of the institution, as based on scientific excellence.

Finally, we found that perceived quality of learning outcomes does not statistically impact other quality dimensions. Learning outcomes can be regarded as a tool of quality assurance or as a quality dimension that reflects the outcome of students' learning process. In both cases, evaluated institutions should exhibit evidence of students' abilities to prove that program outcomes and goals are achieved. In the analyzed evaluations, the aim was to evaluate this quality dimension in terms of clarity and the appropriate level of learning outcomes, not to determine whether learning outcomes are achieved by students. Therefore, in this study it can't be regarded as an output indicator linked to quality of learning.

The nexus of the institutional quality dimensions and quality perspectives interrelationship

An analysis of the nexus dimensions of institutional teaching and research quality shows that the quality reflected through peer evaluation encompasses all three perspectives of quality (Cardoso et al., 2016), which are ultimately intertwined. Quality as a culture, which is reflected in the learning outcomes dimension, is intertwined with the quality as consistency perspective, which is reflected in the number of teaching staff dimension. Quality of culture is also intertwined with the compliance perspective, as reflected in the international comparability of study programs dimension, as well as the student/full-time faculty ratio. Furthermore, the dimensions related to quality as compliance perspective (international comparability of study program and the student/full-time faculty ratio) are more related to the dimensions concerning the quality as consistency perspective (full-time faculty adequacy, number of teaching staff, adequate number of peer- reviewed scientific publications and institutional reputation). The only dimension related to quality as a culture (student/full-time faculty ratio) is the assessment of learning outcomes. The dimensions related to research quality (adequate number of peer-reviewed scientific publications and institutional reputation) are mostly directly related to the dimensions related to compliance, and less to the institutional quality culture.

It seems that the interrelationship of the quality perspectives on the institutional level starts from quality as culture and leads to the adoption of regulations, and conformity with different mechanisms and modalities of evaluation, usually imposed by external stakeholders. Moreover, it can be assumed that the interrelationships between quality perspectives simultaneously shape institutional quality andassessments.

It is not surprising that in an institutional evaluation such as accreditation, which is focused more on teaching quality, implies that the quality as culture perspective is directly impacted by institutional governance and management. On the other hand, research quality dimensions, which are heavily emphasized in the institutional rankings,

encompass the quality as consistency perspective, which does not entirely originate from institutional quality culture but is introduced through external factors such as market mechanisms.

In academic rankings, in which excellence is promoted primarily through scientific production, university performance is largely determined by reputation. Research has become a dominant activity not only in research-intensive universities, but also in smaller local institutions in less developed countries. In this context, the outcomes of scientific research have become the most important indicators of the quality of the individual and the institution (Hughes & Barrie, 2010; Drennan, 2001).

This trend is clearly evident in global academic rankings based on scientometric indicators and reputation surveys, so it might be expected that this would not be the case in external quality evaluations. A contextual and qualitative peer-review approach might serve as an effective countermeasure (Brennan & Shah, 2000) to the main objection to uncritical usage of the numerical indicators of institutional scientific productivity. However, the results of this study demonstrate that, although external evaluations have taken into account contextual measures in the assessment of institutional quality, it is interesting to note that this approach has led to findings that perceived institutional reputation is also based on research quality.

The teaching quality dimensions are an intertwined network of stronger and weaker correlations, as is the case with research quality. Such a clear division between teaching and research performance speaks to the national context in which the universities operate . The only quality dimension associated with institutional teaching, learning and research performance, is full-time faculty adequacy. Its connection with other quality dimensions indicates that it is a significant contributory factor to the development of all academic processes at the institution and its quality, and ultimately its reputation. As this research shows, teachers as an input resource are a key factor linking teaching and research and overall institutional performance dimensions. The connection between the research and teaching activities has mostly been researched at the individual level; however it has been shown that, at the institutional level, the individual contributions of researchers and teachers to the institution's mission via research and teaching significantly contribute to institutional quality.

The limitations of this research are primarily related to the analysis of the correlation of dimensions that do not include all possible dimensions of institutional quality, but those that are conditioned by the input-based evaluation framework. Furthermore, indicators related universities' societal role, although an integral feature of universities, are not included in this research.

Conclusions

The analysis results of the relationships between institutional dimensions of quality suggest that quality, seen through the lens of the peer-reviewer's perspective, encompasses all three perspectives of quality (Cardoso et al.,2018), which are ultimately intertwined.

At the same time, they shape institutional quality and its assessment, which is strongly influenced by external stakeholders' concerns.

The mutual interaction of quality of teaching indicators, which do not seem to berelated to the quality of research matrix, emphasizes the importance of university teachers, who act as a link between them.

Ultimately, the analysis of the interrelationship between institutional dimensions and perspectives of quality from the perspective of expert committees reveals that the review process also makes an important contribution to the understanding, definition and evaluation of institutional quality. This factor is often neglected and insufficiently emphasized in research on institutional quality.

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Povezanost nastavne i istraživačke djelatnosti sveučilišta iz perspektive vanjskoga vrednovanja kvalitete

Sažetak

Cilj je rada istražiti odnose između devet institucijskih dimenzija kvalitete kako bi se utvrdio međusobni utjecaj svake od njih. Pri tome se kvantitativno analiziraju korelacije 9 dimenzija kvalitete u 78 institucija uz upotrebu Pearsonove korelacijske matrice. Rezultati pokazuju da su dimenzije kvalitete poučavanja međusobno povezane, upravo kao i dimenzije istraživanja. Takvi rezultati sugeriraju jasno razdvajanje nastavnoga i istraživačkoga obilježja institucija u nacionalnom kontekstu. Međutim, analiza pokazuje i da je odgovarajući broj i kvalifikacije nastavnika i dobar prediktor kvalitete obje aktivnosti sveučilišta - nastave i istraživanja. Rezultati ovoga istraživanja doprinose boljem razumijevanju povezanosti institucijskih dimenzija kvalitete, posebice onih koje se odnose na kvalitetu nastave i istraživanja. Ujedno, istraživanje predstavlja i doprinos raspravi o ulozi istorazinske procjene u postupcima vanjskoga vrednovanja kvalitete.

Ključne riječi: *istorazinska procjena; istraživanje; nastava; nastavnici; osiguravanje kvalitete; visoko obrazovanje*

Uvod

Pokretanje velikoga broja visokoškolskih institucija i programa, sve veća participacija studenata u sustavu visokoga obrazovanja te interes dionika za kvalitetu visokoga obrazovanja, otvaraju čitav niz pitanja vezanih uz kvalitetu institucija koje ga provode. Istodobno raste broj i raznolikost vanjskih vrednovanja kvalitete te prezentiranja informacija na način razumljiv dionicima (Tetteh i sur., 2021). Njih provode raznovrsne agencije za akreditaciju i ostala vrednovanja kvalitete te akademska rangiranja. Posljedično, postupci vanjskoga vrednovanja kvalitete, klasifikacija i rangiranja (Blanco-Ramírez i Berger, 2014) na institucijskoj razini, često predstavljaju dodatno opterećenje za osoblje, ali i za upravu visokih učilišta (Cardoso i sur., 2018).

Postupci institucijskoga vrednovanja kvalitete uključuju skupove standarda i pokazatelja, koji služe kao zamjena za inherentne institucijske karakteristike (Simpson, 2016). Njihova operacionalizacija u institucijske dimenzije omogućuje detaljniji uvid

u različite aspekte institucijske aktivnosti, poput poučavanja, istraživanja te društvene uloge dajući na taj način bolji pregled njihove kvalitete. Kao konačni ishod, kvaliteta se institucije ocjenjuje i predstavlja kao cjelina ili kao zbroj kvaliteta svih njezinih dimenzija. Međutim, dosadašnja istraživanja pokazuju kako povezanost i međusobni odnos tih dimenzija kvalitete ostaje nedovoljno istražen i određen.

U tom kontekstu, osiguravanje kvalitete uključuje djelatnosti visokih učilišta kao što su poučavanje, odnosno nastava, istraživanje te društvenu ulogu visokoškolskih institucija i nastavnika (Ćulum i sur., 2014). Aktivnosti vezane za nastavnu djelatnost institucije povezuju i uključuju kurikul, vrednovanje studentskih postignuća te u konačnici, nastavne metode i ishode učenja (Neumann, 2002) dok se kvaliteta istraživanja u ovom kontekstu shvaća ponajviše kao znanstvena djelatnost institucije i produktivnost.

Akreditacija se, kao mehanizam vanjskoga vrednovanja, referira na kvalitetu sve tri misije visokih učilišta, te, gledajući na sustavnoj razini, doprinosi očuvanju vjerodostojnosti sustava visokoga obrazovanja. Na institucijskoj razini, akreditacija obavlja funkciju mehanizma za poboljšanje kvalitete potičući procese unutarnjega osiguravanja kvalitete (Cret, 2011) (Gerón-Piñón i sur., 2021). Kako bi se rezultati takvoga vrednovanja učinkovito koristili u svrhu poboljšanja na sustavnoj i institucijskoj razini, ključno je razumjeti kako institucijske aktivnosti međusobno djeluju i kako jedna aktivnost utječe na uspjeh druge.

Konkretno, cilj je istraživanja utvrditi odnos između institucijskih dimenzija kvalitete vrednovanih kroz istorazinsku procjenu (*peer review*) radi definiranja njihova međusobnoga utjecaja i djelovanja, posebice dimenzija koji povezuju djelatnosti nastave i istraživanja.

Pregled literature

Kako bi se istražio odnos i utjecaj između dimenzija institucijske kvalitete, rad se oslanja na koncept višestrukih karakteristika kvalitete u visokom obrazovanju (Harvey i Newton, 2004.; Kleijnen i sur., 2011), a raznolikost pristupa konceptu kvalitete nadalje se konkretizira kroz metodologije institucijskoga vrednovanja akademske kvalitete (Leiber, 2019.; Cardoso i sur., 2016).

Različite perspektive kvalitete u institucijskim vrednovanjima

Vanjsko vrednovanje kvalitete institucije obuhvaća niz procesa temeljenih na različitim konceptima kvalitete, koji su, kako dosadašnja istraživanja pokazuju, višeznačni i teško odredivi (Newton, 2000). S obzirom na činjenicu da je kvaliteta koncept vođen vrijednošću, u literaturi se mogu pronaći različiti pristupi njegovom definiranju (Harvey i Green, 1993.; Van Kemenade i sur., 2008), a ovo se istraživanje teorijski temelji na klasifikaciji perspektiva kvalitete u visokom obrazovanju koju su uveli Cardoso i sur. (2016) – kvaliteta kao kultura, kvaliteta kao usklađenost i kvaliteta kao dosljednost. Kvaliteta kao kultura obuhvaća odgovornost zaposlenika za kvalitetu i njezino unaprjeđenje kroz institucijske procese i strukture. Zakonski okvir, javne politike

te ostali mehanizmi izvan same institucije koji utječu na interno osiguranje kvalitete institucije, predstavljaju kvalitetu kao usklađenost. Kvaliteta kao dosljednost povezuje standarde ocjenjivanja visokoga obrazovanja, procese vrednovanja njegove kvalitete te usklađuje rezultate takvih vrednovanja s ostalim mehanizmima osiguranja kvalitete.

U skladu s činjenicom da je koncept kvalitete višedimenzionalan (Vroeijenstijn, 1995), mijenjaju se ciljevi institucijskih vrednovanja i osiguranja kvalitete te i njihov fokus (Salmi i Saroyan, 2007) ovisno o tome što se i na koji način vrednuje. Potrebno je naglasiti i potrebu njihove usklađenost sa zahtjevima različitih dionika (Rosa i Teixeira, 2014), kako bi takva vrednovanja, u konačnici, pružila odgovarajuće informacije o kvaliteti poučavanja, učenja, istraživanja te drugih institucijskih aktivnosti (Sarrico i sur., 2010).

Institucijska kvaliteta i postupci vrednovanja – akreditacija, rangiranje i istorazinska procjena (peer review)

Europski sustavi visokoga obrazovanja različito su prilagođavali svoje aktivnosti osiguranja kvalitete s obzirom na činjenicu da svi sustavi osiguravanja kvalitete nisu u istoj fazi razvoja (Jeliazkova i Westerheijden, 2002). Međutim, zajednički element aktivnosti vanjskoga vrednovanja na europskoj razini predstavljaju nadnacionalni Standardi i smjernice za osiguravanje kvalitete u Europskom prostoru visokoga obrazovanja (*European standards and guideliness for Quality Assurance in the European Higher Education Area - ESG*). Ovi se standardi i smjernice implementiraju u nacionalni kontekst kroz postupke vanjskoga vrednovanja temeljenim na institucijskim dimenzijama kvalitete razrađenima u indikatore vanjskoga vrednovanja (Jongbloed i Westerheijden 1994; Van Damme, 2004) ovisno o svrsi i opsegu vrednovanja (razina institucije ili programa). Institucijski pokazatelji kvalitete ocjenjuju se putem istorazinske procjene koju provode stručna povjerenstva na temelju samoanaliza te posjeta visokom učilištu (Damian i sur., 2016). Takvo vrednovanje kvalitete ima cilj utvrditi ispunjavaju li, institucija ili programi koje ona izvodi, minimalne akademske standarde. Na taj se način potiče unaprjeđenje kvalitete institucija, uglavnom kroz preporuke stručnih povjerenstava za poboljšanje. U konačnici, ishodi akreditacije utječu na poboljšanje kvalitete aktivnosti poučavanja i učenja, kao i na odnos između poučavanja i učenja (Rosa i sur., 2012).

Za razliku od akreditacije, u slučaju akademskih rangiranja, institucijska se kvaliteta reflektira kroz indikatorski sustav te u konačnici predstavlja kroz jednu agregiranu ocjenu (García i sur., 2012). U literaturi su već izneseni prigovori na tako pojednostavljeno predstavljanje kvalitete institucija, kao i na pretjeranu upotrebu pokazatelja kvalitete i kvantitete znanstvene produktivnosti kao mjere izvrsnosti (Hazelkorn, 2008). Općenito, korištenje kvantitativnoga sustava pokazatelja za analizu i prezentaciju akademske kvalitete opravdano je dovelo u pitanje njegovu prikladnost, odgovarajući odabir i svrhu (Marginson i van der Wende, 2007.; Hazelkorn, 2011).

Kvaliteta nastavne, istraživačke i društvene uloge sveučilišta, kao i ostalih institucijskih aktivnosti, prikazana u vanjskim vrednovanjima poput akreditacije

kroz institucijske dimenzije kvalitete (Dill, 2010) koje se procjenjuju disciplinarno osjetljivom istorazinskom procjenom (*peer review*). Njezina je uloga ključna u procjeni kvalitete institucije i programa (Jongbloed i Westerheijden, 1994), budući da sami kvantitativni indikatori (poput pokazatelja znanstvene produktivnosti i uspješnosti, omjera nastavnika i studenata, broja znanstvenih projekata i slično) koji se koriste u postupcima ocjenjivanja institucijske ili individualne uspješnosti, nisu u potpunosti pouzdani bez uzimanja institucijskoga konteksta u obzir (Bonaccorsi i sur., 2017).

Informirana istorazinska procjena u osiguravanju kvalitete oslanja se na interpretiranje te sagledavanje konteksta vrednovane institucije, a dosadašnja istraživanja analiziraju njezine značajke vezane uz različitu percepciju kvalitete (Lamont i Guetzkow, 2016), vrednovanje društvenoga utjecaja istraživanja (Derrick i Samuel, 2016), poučavanje i učenje te njezine uloge u postupcima osiguranja kvalitete (Langfeldt i sur., 2010).

Ovo istraživanje temelji se na kvantitativnom aspektu istorazinske procjene (ocjenama stručnih povjerenstava) koji daje specifične informacije o institucijskoj uspješnosti, kao i o interakciji između institucijskih dimenzija kvalitete.

Institucijske dimenzije kvalitete i njihova međuovisnost

Institucijske dimenzije kvalitete koje se odnose na poučavanje i učenje, istraživanje i društveni utjecaj preoblikovane su u skupove pokazatelja. U sustavima vrednovanja kvalitete poput akreditacije, klasifikacije i rangiranja, pokazatelji se dijele u tri skupine - prema ulaznim karakteristikama (*input*), procesima (*process*) i rezultatima (*output*) (Van Damme, 2004; Usher i Savino, 2007). Indikatori ulaza odnose se na prostorne i ljudske resurse te postupke upisa na instituciju ili studijski program. Dimenzije kvalitete vezane uz pokazatelje procesa podrazumijevaju kvalitetu institucijskih aktivnosti vezanih uz poučavanje i učenje te misiju i ciljeve ustanove. U posljednje se vrijeme zamjećuje trend pomicanja fokusa s ulaznih na izlazne dimenzije kvalitete (Tam, 2014), a one se odnose na postizanje ciljeva programa definiranih ishodima učenja i njihovim vrednovanjem te na ekonomske, društvene i kulturološke utjecaje. Dodatno, osim ulaznih, procesnih, izlaznih skupina pokazatelja, značajni su pokazatelji istraživanja i reputacije koji u akademskim ljestvicama poretka imaju najveću težinu (Dill i Soo, 2005).

Postojeća literatura koja govori o međusobnoj povezanosti dimenzija institucijske kvalitete izvješćuje o pozitivnoj povezanosti između istraživanja i nastave (Mägi i Beerkens, 2016), ocjenjivanja studenata, institucije i znanstvenoga područja (Simpson, 2016) dok su (Bergseth i sur., 2014) istraživali, pomoću kvantitativnih i kvalitativnih pokazatelja, utjecaje institucijskih dimenzija kvalitete na ishode vrednovanja. Dva istraživanja o odnosu dimenzija kvalitete iz perspektive studenata proveli su (Lagrosen i sur., 2004) i (Ardi i sur., 2012). Dimenzije kvalitete koje utječu na zadovoljstvo studenata su predanost uprave fakulteta, kvaliteta izvođenja kolegija te pružanje povratnih informacija za poboljšanje kvalitete (Ardi i sur., 2012). Studija koju su izradili (Lagrosen i sur., 2004) upućuje na dimenzije kvalitete koje su najvažnije studentima i koje se odnose na kvalitetu dimenzija vezanih uz poučavanje i učenje.

U konačnici, dosadašnja istraživanja međuovisnosti institucijskih dimenzija analizirana su iz perspektive nastavnika, nenastavnoga osoblja, studenata i uprave (Cardoso i sur., 2018; Jungblut i sur., 2015; Dužević, 2015) ili sa stajališta diplomanata i poslodavaca (Lukman i sur., 2010; Shah i sur., 2015) koji su u sam proces vanjskoga vrednovanja kvalitete uključeni kao vanjski dionici. Za razliku od primjera iz literature, ovo istraživanje koristi pristup koji se temelji na recenzentskoj perspektivi. Analiziraju se odnosi između dimenzija kvalitete iz kroz očišta stručnih povjerenstava (istorazinske procjene) što pridonosi boljem razumijevanju institucijske kvalitete prema (Cardoso i sur., 2016). Dodatno, studija pruža zanimljiv uvid u potencijal istorazinske procjene kako bi se bolje definirala kvaliteta na institucijskoj razini koji je u postojećoj literaturi ostao gotovo neprepoznat.

Kontekst visokoga obrazovanja u Republici Hrvatskoj

U sustavu visokoga obrazovanja u Hrvatskoj obuhvaćene su 125 visokoškolske ustanove na kojima studira oko 162 000 studenata. Odlikuje ga izrazita heterogenost te podjela na institucije koje izvode stručne i/li sveučilišne studijske programe, a u smislu financiranja, podjela institucija je na javne i privatne. Sukladno ovim kategorijama, najznačajniju zastupljenost od 80% u smislu udjela nastavnika i studenata nailazimo na javnim ustanovama koje nude sveučilišne programe.

Uvođenje nacionalnoga sustava osiguravanja kvalitete izravno je povezano s obvezama preuzetim potpisivanjem Bolonjske deklaracije. U Hrvatskoj, osim postizanja ostalih ciljeva, on je bio usmjeren i na reviziju postojećih studijskih programa te njihovu transformaciju u trocikličke (preddiplomske, diplomske i poslijediplomske). Daljnji razvoj tih procesa vezan je uz potrebu vanjskoga vrednovanja i provjere ispunjavaju li sve institucije u sustavu minimalne akademske uvjete. U prvom ciklusu minimalni akademski uvjeti usredotočili su se na kvalitetu ulaznih parametara (*inputa*) i resursa koji propisuju potreban broj nastavnika i prostorne uvjete, a u kasnijoj reviziji, u drugom ciklusu koji je još uvijek u tijeku, značajniji je naglasak na poučavanju i rezultatima učenja (Willis i Kissane, 1997).

Okvir za osiguranje kvalitete u Hrvatskoj uključuje postupke poput: (re)akreditacije, periodične vanjske neovisne prosudbe te tematska vrednovanja koje provodi nacionalno akreditacijsko tijelo, Agencija za znanost i visoko obrazovanje (AZVO). Institucijska reakreditacija je proces vrednovanja kvalitete institucije koja se izražava ocjenama kvalitete te preporukama za poboljšanje. Prvi njegov ciklus odvijao se od 2010. do 2017. godine, a obuhvatio je sve javne i privatne institucije. S obzirom na to da su privatne institucije u to vrijeme nudile samo stručne studijske programe, predmet ovoga istraživanja su javna sveučilišta i njihove sastavnice.

Metodologija

Dimenzije kvalitete korištene u postupku reakreditacije bile su javno dostupne te provjerene kroz ENQA i EQAR postupke usklađenosti s ESG-om (ENQA, 2015). To su dimenzije koje su uključene u različite vrste vrednovanja kvalitete na nacionalnoj

i globalnoj razini, a uključuju ulazne, procesne i izlazne pokazatelje poučavanja, istraživanja i društvenoga angažmana. Unatoč činjenici da nacionalne i međunarodne akreditacije te rangiranja pokrivaju puno širi spektar različitih dimenzija institucijske kvalitete, za ovu analizu odabrani su pokazatelji koji su najčešće zastupljeni u akreditaciji i rangiranju (Gerón-Piñón i sur., 2021).

Zbog činjenice da su tijekom ovoga ciklusa evaluacije napravljene manje revizije u formulaciji nekih pokazatelja u standardima vrednovanja, u obzir su uzeti samo pokazatelji koji su ostali nepromijenjeni tijekom cijelog petogodišnjeg vremenskog okvira. U konačnici izlučeno je devet institucijskih dimenzija kvalitete za koje je stručno povjerenstvo kvantitativno ocijenilo razinu provedbe.

Tablica 1

Analizom je obuhvaćeno 78 od 125 vrednovanih institucija. Uzorak je obuhvatio sve institucije koje izvode sveučilišne studijske programe, odnosno institucije koje se bave znanstvenom djelatnošću. Ostalih 47 institucija su veleučilišta koja izvode stručne studijske programe. Glavna razlika između njih je u tome što na obje vrste institucija, prema protokolima AZVO, nije bila primjenjivana ista metodologija vrednovanja pa je glavna skupina institucija (sveučilišta) uključena u istraživanje. Razlika između metodologija vrednovanja institucija koje izvode stručne i sveučilišne studijske programe odnosi se na dimenziju kvalitete istraživanja jer su veleučilišta usmjerena na primijenjene i stručne rezultate svojih istraživačkih aktivnosti.

Istraživanje analizira devet dimenzija kvalitete visokoškolskih ustanova (Tablica 1), a to su: *međunarodna usporedivost studijskih programa*, *ishodi učenja*, *vrednovanje ishoda učenja*, *uvjeti upisa, odgovarajući broj i kvalifikacije nastavnika, broj nastavnika, omjer nastavnika i studenata, odgovarajući broj recenziranih znanstvenih publikacija* te *reputacija institucije*.

Izvješća o institucijskoj reakreditaciji javno su dostupna na mrežnoj stranici AZVO-a temeljena su na ocjenama recenzentskih timova na skali od 1 do 5 (5 - najviša razina kvalitete) za svaku od devet dimenzija kvalitete (Tablica 1) te analizirana statistička povezanost između njih. Korelacijska matrica s Pearsonovim koeficijentima korelacije je analizirana te je prikazana u Tablici 2. Analiza je izrađena u statističkom softveru SPSS za 78 VŠU u Hrvatskoj, a prikupljeni podatci obuhvaćaju razdoblje od 2012. do 2018. godine.

Rezultati

Sukladno tome, utvrđena je statistički značajna pozitivna umjerena korelacija između *međunarodne usporedivosti studijskih programa* i sljedećih dimenzija kvalitete visokoga učilišta: *vrednovanje ishoda učenja* (r = 0,329), *uvjeti upisa* (r = 0,275), *odgovarajućega broja i kvalifikacija nastavnika* (r = 0,436), *broja nastavnoga osoblja* (r = 0,388), *odgovarajućega broja recenziranih znanstvenih publikacija* (r = 0,383) i *reputacije institucije* (r = 0,472). Osim toga, utvrđena je statistički značajna pozitivna korelacija između dimenzije

kvalitete *vrednovanje ishoda učenja* i sljedeće dvije dimenzije: *broj nastavnog osoblja* (r = 0,319) i *omjera studenata/nastavnika* (r = 0,328). Nadalje, utvrđena je statistički značajna pozitivna korelacija između odgovarajućeg broja i kvalifikacija nastavnika i sljedećih dimenzija kvalitete: *broj nastavnoga osoblja* (r = 0,408), *omjer nastavnika i studenata* (r = 0,375), *odgovarajućega broja recenziranih znanstvenih publikacija* (r = 0,367) te *reputacije institucije* (r = 0,432).

Tablica 2

Analiza je utvrdila da je *broj nastavnoga osoblja u pozitivnoj korelaciji* s *omjerom nastavnika i studenata* (r = 0,268), *odgovarajućim brojem recenziranih znanstvenih publikacija* (r = 0,227) i *reputacijom institucije* (r = 0,291). *Omjer nastavnika i studenata* bio je statistički značajan i u pozitivnoj korelaciji s *vrednovanjem ishoda učenja* (r = 0,328) te *odgovarajućim brojem i kvalifikacijama nastavnika* (r = 0,375). *Odgovarajući broj recenziranih znanstvenih publikacija* umjereno je pozitivno korelirao s *međunarodnom usporedivosti studijskih programa* (r = 0,383) i *odgovarajućim brojem i kvalifikacijama nastavnika* (r = 0,367) te značajno pozitivno korelirao s *reputacijom institucije* (r = 0,741). U konačnici, posljednja analizirana dimenzija kvalitete, *reputacija institucije* bila je umjereno pozitivno povezana s *međunarodnom usporedivosti studijskih programa* (r = 0,472), *odgovarajućim brojem i kvalifikacijama nastavnika* (r = 0,432) i *brojem nastavnog osoblja* (r =0 ,291). Osim toga, pokazalo se da je *reputacija institucije* u značajnoj pozitivnoj korelaciji s *odgovarajućim brojem recenziranih znanstvenih publikacija* (r = 0,741).

Diskusija

Institucijske dimenzije kvalitete poučavanja

Dimenzija kvalitete *međunarodna usporedivost studijskih programa* pokazatelj je ishoda nastavnoga procesa i postizanja ishoda učenja studenata u skladu s ciljevima studijskoga programa. Međunarodna usporedivost studijskih programa, zajedno s ishodima učenja koji se kroz program ostvaruju, smatra se rezultatom aktivnosti u sveučilišnoj misiji poučavanja i učenja. Njegova umjerena korelacija s drugim dimenzijama kvalitete sugerira kako se kvaliteta poučavanja može percipirati kao produkt kvalitete institucijskih inputa – resursa (*uvjeti upisa*, *odgovarajući broj i kvalifikacije nastavnika*, *broj nastavnika*) te kvalitete aktivnosti unutar institucije (*odgovarajući broj znanstvenih publikacija* i *reputacija institucije*).

Na individualnoj razini studenata, ishodi učenja koriste se za iskazivanje onoga što se od njih očekuje da postignu te na koji se način očekuje da pokažu to postignuće (Tam, 2014). Uvođenjem sustava kvalifikacijskih okvira na europskoj razini, na nacionalnoj razini, cilj je bio postići da se svi programi koje visoka učilišta izvode temelje na konceptu ishoda učenja te da se kurikuli preoblikuju tako da adekvatno odražavaju ishode učenja koje će studenti steći. Riječ je o složenoj dimenziji kvalitete koja je u značajnoj pozitivnoj korelaciji s *međunarodnom usporedivosti studijskih*

programa, *brojem nastavnika* i *omjerom studenata/nastavnika*, a pokazuje značajke kvalitete koje se uglavnom odnose na odgovarajuće metode vrednovanja ishoda učenja, njihovu raznolikost, primjerenost te standardiziranu rigoroznost. Isto tako, dimenzija *međunarodna usporedivost studijskih programa* pretpostavlja usporedivost planiranih ishoda učenja programa s prvim i drugim ciklusom visokoga obrazovanja, odnosno preddiplomskim i diplomskim studijem.

Vrednovanje ishoda učenja studenata vrlo je važan korak u ocjenjivanju kvalitete nastave. Ono uključuje provjeru jesu li studenti postigli opseg i razinu predviđenih ishoda učenja te posvećenost nastavnika primjeni odgovarajućega oblika ocjenjivanja. Interakcija obje dimenzije kvalitete - *međunarodne usporedivosti studijskih programa* i *vrednovanja ishoda učenja*, u literaturi je klasificirana u pokazatelje uspješnosti učenja prema (Leiber, 2019) klasifikaciji pokazatelja poučavanja i učenja u visokom obrazovanju te se kroz njih i vrednuje institucijska kvaliteta nastave. Vrednovanje bi se trebalo oslanjati na različite metode ocjenjivanja, koje se mogu razlikovati s obzirom na znanstveno područje (Ylonen i sur., 2018) te na unaprijed definirane ishode učenja. (Chalmers i sur., 2008) ističu da i samo vrednovanje ishoda učenja može dovesti do poboljšanja kvalitete cijele institucije. Standardi akademskoga postignuća povezani su s metodama ocjenjivanja i oslanjaju se na učenje studenata usmjereno prema obrazovnom cilju, a koje uključuje povratnu informaciju i praćenje (Groccia, 2012). U konačnici, ove dimenzije institucijske kvalitete pomažu osigurati usporedivost i usklađenost ocjena i standarda završne godine s ostalim institucijama u međunarodnoj areni (Sefcik i sur., 2017). Značajna povezanost kvalitete učenja s kvalitetom institucijske nastave (*omjer nastavnika i studenata* i *broj nastavnoga osoblja*) upućuju na međusobnu povezanost ova dva procesa (Dužević i Čeh Časni, 2015).

Prema klasifikaciji pokazatelja učenja i poučavanja, dimenzije *odgovarajući broj i kvalifikacije nastavnika* spadaju u kvalitetu okružja za učenje i poučavanje. Kvalificirani nastavnici u odgovarajućem znanstvenom području u kojem se izvode studijski programi preduvjet su kvalitetne nastave i učenja studenata. 'Kvaliteta nastavnika' složeni je pojam koji označava kvalitetu nastavnika u smislu formalne kvalifikacije nastavnika i implicitnih karakteristika nastavnika, kao što su sposobnost, predanost, motivacija potpomognuta odgovarajućim postupcima zapošljavanja, dostupnost nastavnika, profesionalni razvoj i priznavanje nastavničkih kompetencija (Aithal i Kumar, 2016). Kvaliteta procesa učenja vrednuje se kroz ulazne pokazatelje, poput *broja nastavnika i studenata*, a kvaliteta nastavnoga procesa kroz nastavničke kompetencije (Leiber, 2019). Dosadašnja istraživanja potvrđuju važnost *odgovarajućega broja i kvalifikacija nastavnika* za njihov pozitivan utjecaj na znanstvenu produktivnost pojedinaca i institucija (Cadez i sur., 2017.; Flander i sur., 2020.; Shin, 2011) osiguravajući da profesori s punim radnim vremenom doprinose ostvarenju institucijskih misija poučavanja i istraživanja (Stensaker, 2015.; Pham i Paton, 2019). Percepcija recenzenta o *odgovarajućom broju i kvalifikacijama nastavnika* u pozitivnoj je korelaciji s *međunarodnom usporedivosti studijskih programa* i s drugim dimenzijama kvalitete koje odražavaju okružje za učenje i poučavanje, posebno nastavne resurse (Leiber, 2019), kao što su *broj nastavnoga osoblja*

i *omjer nastavnika i studenata*. Ovi rezultati upućuju na to da je provedeno vrednovanje temeljeno na pokazateljima ulaznih podataka (*input*), odnosno resursa, pri čemu se pretpostavlja da su kvalitetni resursi bitni za postizanje institucijskih ciljeva i misije, a to je izvođenje kvalitetne nastave i istraživanja. S druge strane, njihova pozitivna korelacija s dimenzijama kvalitete ishoda (*output*) koji se odnose na *međunarodnu usporedivost studijskih programa*, istraživačku produktivnost (*odgovarajući broj recenziranih znanstvenih publikacija*) i *reputaciju institucije* ukazuje da je kvaliteta inputa značajno povezana s rezultatima institucijskih nastavnih i istraživačkih aktivnosti. Prema ovoj analizi, *odgovarajući broj i kvalifikacije nastavnika* je dimenzija kvalitete koja pokazuje najviše korelacija s ostalim dimenzijama kvalitete te vidljivo utječe na kvalitetu nastave i istraživanja institucije (akademska kvaliteta).

Broj nastavnika u punim radnim vremenom odlučujući je pokazatelj kojim akreditacijske agencije u svojim standardima osiguravaju ispunjenje institucijskih misija (nastavna, istraživačka i društvena uloga). Istraživanje koje su proveli (Pham i Paton, 2019) ističe da nastavno osoblje utječe na učenje studenata na temelju povezanosti između velikoga broja vanjskih suradnika u nastavi sa studentskim postizanjem ishoda učenja. Osiguravanje minimalnoga zakonskog broja stalno zaposlenih nastavnika proizašlo je iz koncepta vrednovanja akademske kvalitete kroz pristup vrednovanju resursa (*inputa*) (Cheong Cheng i Ming Tam, 1997.; Jokić i Petrušić, 2016), a sličan pristup vrednovanju imaju i druge europske zemlje (Rosa i sur., 2006). Zanimljivo je da jedini kvantitativni zahtjev koji svaka institucija mora ispuniti, u hrvatskom slučaju, ima umjeren utjecaj na druge dimenzije kvalitete nastave - *međunarodnu usporedivost studijskoga programa*, *vrednovanje ishoda učenja*, *odgovarajući broj i kvalifikacije nastavnika*, uz iznimku *broja nastavnoga osoblja* koji je utjecao na *reputaciju institucije*. Ovi rezultati ukazuju na to da ne postoji izravna i jaka veza između broja nastavnoga osoblja i kvalitete nastave, kao što je to slučaj s *odgovarajućim brojem i kvalifikacijama nastavnika* i *omjerom nastavnika i studenata*. To bi također moglo sugerirati da ne postoji izravna i jaka veza između *broja nastavnika* u punom radnom vremenu i institucijske nastavne aktivnosti, već s njihovim nastavničkim kompetencijama koje se odražavaju kroz pokazatelj izražen dimenzijom *broj publikacija nastavnika u određenom znanstvenom području* (Leiber, 2019). S druge strane, korelacija *broja nastavnika* s dimenzijom kvalitete *reputacije institucije* ukazuje da je veza između pokazatelja *inputa* i *outputa* u ovom slučaju ostvarena. Utjecaj *broja nastavnoga osoblja* na *reputaciju ustanove* pokazuje kako Odgovarajuća raspodjela nastavnog i istraživačkog opterećenja nastavnika i znanstvenika rezultira boljim ugledom institucije temeljenom na kvaliteti rezultata istraživanja.

Dimenzija kvalitete *omjer nastavnika i studenata* u vanjskom vrednovanju kvalitete i akademskom rangiranju se često koristi kao pokazatelj kvalitete aktivnosti poučavanja i učenja, a označava mjeru u kojoj su nastavni resursi dostupni studentima. Niži omjer nastavnika i studenata doprinosi učinkovitom okružju za učenje i često se koristi za procjenu kvalitete obrazovanja (Marginson i van der Wende, 2007). Zajedno s još jednim pokazateljem kvalitete nastavničkih resursa, *odgovarajućim brojem i kvalifikacija*, *omjer nastavnika i studenata* odražava napore koje institucije ulažu u osiguravanje veće mjere

individualnoga pristupa poučavanju. Kvalitetni obrazovni proces, a time i kvaliteta *vrednovanja ishoda učenja*, bitan je segment koji obuhvaća učenje (Leiber, 2019), a u novoj reviziji ESGa iz 2015. definiran je kao učenje usmjereno na studenta (Student-centered learning) (Manatos i Huisman, 2020). Što se tiče povezanosti kvalitete nastave i istraživanja, dokazi sugeriraju da niži omjer nastavnika i studenata doprinosi boljoj raspodjeli nastavnoga, istraživačkoga i administrativnoga opterećenja.

Institucijske dimenzije kvalitete istraživanja

Značajna korelacija između pokazatelja *reputacije institucije* i *odgovarajućeg broja publikacija* jasno je vidljiva na akademskim ljestvicama poretka, posebice globalnim, koje pridaju značajnu težinu pokazateljima znanstvene produktivnosti. U konkretnom slučaju, pokazatelj znanstvene produktivnosti (kvantiteta) umjereno utječe na *međunarodnu usporedivost studijskih programa* i *odgovarajući broj i kvalifikacija nastavnika*, pokazatelj u kategoriji kvalitete nastave. Iako je pokazatelj znanstvene produktivnosti povezan s kvantitativnom komponentom, on nije uvijek povezan s kvalitetom. Analiza odnosa između znanstvene produktivnosti i kvalitete nastave s jedne strane te kvalitetne znanstvene aktivnosti i kvalitete nastave s druge strane, sugerira da je njihov odnos vidljiv samo u slučaju korelacije između kvalitete publikacija s kvalitetom nastave (Cadež i sur., 2017). Pozitivne i negativne veze između nastave i istraživanja (Marsh i Hattie, 2002) opširno su razrađene u literaturi, a rezultati upućuju na rezultate slične ovom.

Na dimenziju *reputacija institucije* značajno utječe percepcija *odgovarajućega broja recenziranih znanstvenih publikacija* te je ona umjereno pod utjecajem *međunarodne usporedivosti studijskih programa*, *odgovarajućeg broja i kvalifikacija nastavnika* te *broja nastavnika*. Zanimljivo je kako taj učinak zamjećujemo i kroz prosudbu recenzenata koja je interpretativne i kvalitativne prirode, a koja se, kako ovo istraživanje pokazuje, na kraju oslanja na reputaciju institucije temeljenu na znanstvenoj izvrsnosti.

U konačnici, utvrđeno je kako percipirana kvaliteta *ishoda učenja* nije statistički utjecala niti utječe na ostale dimenzije kvalitete. Ishodi učenja mogu se smatrati alatom osiguranja kvalitete ili dimenzijom kvalitete koja odražava ishod procesa studentskoga učenja. U oba slučaja, vrednovane institucije trebaju podastrijeti dokaze o kompetencijama studenata kako bi dokazali da su ishodi i ciljevi programa postignuti. U ovom vrednovanju, cilj je bio vrednovati ovu dimenziju kvalitete u smislu jasnoće i definiranja odgovarajuće razine ishoda učenja, a ne utvrditi ostvaruju li studenti doista ishode učenja. Stoga se u ovom istraživanju pokazatelj *ishod učenj*a ne može smatrati pokazateljem rezultata (*outputa)* koji je povezan s kvalitetom učenja.

Povezanost institucijskih dimenzija kvalitete i međuodnos perspektiva kvalitete

Analiza povezanih institucijskih dimenzija kvalitete nastave i istraživanja, pokazuje kako kvaliteta koja se vrednuje kroz istorazinsku procjenu obuhvaća sve tri perspektive kvalitete (Cardoso i sur., 2016), a koje su u konačnici isprepletene. Kvaliteta kao kultura

koja se ogleda u dimenziji *ishodi učenja* isprepletena je s odrednicom kvalitete kao dosljednosti koja se odražava u institucijskim dimenzijama poput *broja nastavnoga osoblja* te značajkom kvalitete kao usklađenosti koja se zrcali u dimenzijama *međunarodna usporedivost studijskoga programa* i *omjer nastavnika i studenata*. Nadalje, dimenzije vezane uz kvalitetu kao perspektivu usklađenosti (*međunarodna usporedivost studijskoga programa* i *Omjer nastavnika i studenata*), značajnije su povezane s dimenzijama koje se odnose na perspektivu kvalitete kao konzistentnosti (*odgovarajući broj i kvalifikacija nastavnika*, *broj nastavnika*, *odgovarajući broj recenziranih znanstvenih publikacija* te *reputaciju institucije*). Jedina dimenzija vezana uz odrednicu kvalitete kao kulture (*omjer nastavnika i studenat*a) je *vrednovanje ishoda učenja*. Dimenzije vezane uz kvalitetu istraživanja, kao što su *odgovarajući broj recenziranih znanstvenih publikacija* i *reputacija institucije*, izravno su uglavnom povezani s dimenzijama vezanim uz usklađenost, a manje s institucijskom kulturom kvalitete.

Rezultati ovoga istraživanja upućuju na to da međuodnos perspektiva kvalitete na institucijskoj razini polazi od kulture kvalitete i vodi do usvajanja propisa i usklađenosti s različitim mehanizmima i modalitetima vrednovanja koje se oblikuju u skladu s potrebama vanjskih dionika. U konačnici, može se smatrati da perspektive kvalitete u svojem međusobnom odnosu istodobno oblikuju kvalitetu institucije, ali i njezino vrednovanje.

Stoga ne čudi da institucijsko vrednovanje, kao što je akreditacija, stavlja naglasak na kvalitetu nastave te podrazumijeva perspektivu kvalitete kao kulture na koju izravno utječe upravljanje institucijom. S druge strane, dimenzije kvalitete istraživanja koje su jako naglašene u institucijskom rangiranju obuhvaćaju perspektivu kvalitete kao dosljednosti koja ne potječe u potpunosti iz institucijske kulture kvalitete, već je uvedena kroz vanjske čimbenike kao što su tržišni mehanizmi.

Na akademskim ljestvicama poretka u kojima se izvrsnost promiče prvenstveno kroz znanstvenu produktivnost, učinak sveučilišta uvelike je određen reputacijom. Istraživanje je postalo dominantna djelatnost ne samo na istraživački usmjerenim sveučilištima, već i u manjim, lokalnim institucijama u manje razvijenim zemljama. U tom kontekstu, rezultati znanstvenoga istraživanja postali su najvažniji pokazatelji kvalitete pojedinca i institucije (Hughes i Barrie, 2010; Drennan, 2001).

Taj trend, između ostaloga, nameću i globalna akademska rangiranja temeljena na scientometrijskim pokazateljima i istraživanjima reputacije, stoga bi se moglo očekivati da to neće biti slučaj u vanjskim vrednovanjima kvalitete u kojima istorazinska ocjena recenzenata služi kao učinkovita mjera u ublažavanju (Brennan i Shah, 2000) glavnih nedostataka koji se odnose na nekritičku upotrebu brojčanih pokazatelja institucijske znanstvene produktivnosti. Međutim, rezultati ovoga istraživanja pokazuju kako, iako je akreditacija kao modalitet vanjskoga vrednovanja uzela u obzir kontekst, rezultat i takvoga pristupa vrednovanju institucijske kvalitete upućuje na to da se percipirana reputacija institucije također temelji na kvaliteti istraživanja.

Dimenzije kvalitete poučavanja isprepletene su mrežom jačih i slabijih korelacija, kao što je to slučaj i s kvalitetom istraživanja. Ovi rezultati upućuju na vidljivu podjelu između

nastavne i istraživačke aktivnosti visokih učilišta što govori i o nacionalnom kontekstu u kojem visoka učilišta djeluju. Jedina dimenzija kvalitete povezana s institucijskim poučavanjem, učenjem i istraživačkim učinkom je *odgovarajući broj i kvalifikacija nastavnika*. Njezina povezanost s drugim dimenzijama kvalitete ukazuje na činjenicu da je riječ o značajnom čimbeniku koji doprinosi razvoju svih akademskih procesa na instituciji i njezinoj kvaliteti, a u konačnici i reputaciji. Kao što ovo istraživanje pokazuje, upravo je nastavno-istraživački kadar ključni čimbenik u povezivanju nastave i istraživanja s ostalim dimenzijama institucijskoga učinka. Povezanost istraživačke i nastavne djelatnosti uglavnom je istražena na individualnoj razini, no pokazalo se da i na institucijskoj razini individualni doprinos znanstvenika i nastavnika ostvarenju sveučilišnih misija kroz istraživanje i nastavu značajno pridonosi institucijskoj kvaliteti.

Naposljetku, ograničenja ovoga istraživanja prvenstveno se odnose na analizu korelacije dimenzija koje ne uključuju sve moguće dimenzije institucijske kvalitete, već one koje su uvjetovane okvirom vrednovanja. Nadalje, pokazatelji koji se odnose na društvenu ulogu, iako su sastavni dio misije sveučilišta, nisu uključeni u ovo istraživanje jer su se različito implementirali i iskazivali tijekom ciklusa vrednovanja.

Zaključci

Rezultati analize odnosa institucijskih dimenzija impliciraju kvalitetu visokih učilišta gledanu kroz očište recenzenata, a koja obuhvaća sve tri njezine perspektive (Cardoso i sur., 2018) koje se u konačnici prožimaju. Istodobno, one ju oblikuju te utječu na njezina vrednovanja koja su pod značajnim utjecajem potreba vanjskih dionika.

Međusobna interakcija pokazatelja povezanih uz kvalitetu nastavne djelatnosti visokih učilišta koji, pak, ne pokazuju povezanost s mrežom pokazatelja kvalitete istraživačke djelatnosti, naglašava važnost sveučilišnih nastavnika koji djeluju kao poveznica između njih.

U konačnici, analiza međuodnosa institucijskih dimenzija i perspektiva kvalitete gledana iz perspektive stručnih povjerenstava otkriva kako recenzentski postupak također daje važan doprinos razumijevanju, definiranju i vrednovanju institucijske kvalitete. Ova se odrednica često zanemaruje i nedovoljno podupire u istraživanjima institucijske kvalitete.