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ARTICLES

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Service quality as the source of competitive advantage in higher education: The difference between students' expectations and perceptions

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Abstract: The aim of this paper is to measure and compare the quality of services provided by higher education institutions in the Czech Republic and Vietnam. It is not the sheer volume of services offered, but their quality, which matters as a strategic tool enhancing the competitiveness in the tertiary education market. Feedback from student-clients is valuable to school management in their efforts to improve the services supplied. Samples of hundreds of students from the Czech Republic and Vietnam were involved in the research applying the SERVQUAL method. The five-dimensional questionnaire was administered, and the obtained data were analysed using descriptive statistics and t-test. The results show that Czech respondents are less satisfied with the service quality than their Vietnamese counterparts. In both countries, the quality perception in all dimensions was lower than expectations, the largest gaps being found in the Assurance dimension. Czech

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students placed the greatest emphasis on the Empathy factor, while their Vietnamese colleagues preferred the Tangibles dimension. To improve the quality of services, higher education institutions in the Czech Republic are advised to facilitate fast and unambiguous information transfer, ensuring comfort, security, and a supportive learning environment for students, with helpful staff willing to address their concerns.

Keywords: Higher education institution; service quality; student satisfaction; SERVQUAL model; competitive advantage.

I. Introduction

There are many comparative rankings of higher education institutions (HEIs). According to the international rankings of universities, the level of Czech HEIs is gradually improving, one of the criteria being the growing number of foreign students. Nevertheless, the best-ranked universities are ranked only around the 500th place, and most of them do not make the international ranking at all.¹

Institutions of higher learning, like any other service facility, should strive for excellence.² Quality in education is not easy to define or evaluate, as it is affected by a great deal of factors. The quality of higher education services is essential for success in a highly competitive environment, a solid grasp of service quality determinants allowing for better management.³ For the general definition of quality, customers are its ultimate judges. Students being the main clients of colleges and universities, their key role in legitimizing quality assurance processes is therefore a widely debated academic topic.⁴ A high level of education and training provided is a

¹ Jan Schejbal, "Bída českých univerzit: Proč se ani 30 let po revoluci nedaří českým školám zařadit ke světové elitě?" *Ekonom*, 2020, accessed May 2022, <https://ekonom.cz/c1-66716910-bida-ceskych-univerzit>.

² Minarni Anaci Dethan et al., "Competence Analysis of Internal Supervision Unit Auditor (SPI) in Nusa Cendana University of Kupang," *Proceedings of the International Conference on Tourism, Economics, Accounting, Management, and Social Science (TEAMS 2018)*, 2019, <https://doi.org/10.2991/teams-18.2019.28>.

³ Soni Sanjay and Krishna Govender, "South Africa University Students' Perceptions of Key Education Service Quality Determinants," *Problems and Perspectives in Management* 16, no. 3 (September 7, 2018): 377–88, [https://doi.org/10.21511/ppm.16\(3\).2018.30](https://doi.org/10.21511/ppm.16(3).2018.30).

⁴ Liudvika Leisyte and Don F. Westerheijden, "Stakeholders and Quality Assurance in Higher Education," *Drivers and Barriers to Achieving Quality in Higher Education*, 2014, 83–97, https://doi.org/10.1007/978-94-6209-494-9_7; Ruhollah Mahdiuon., "Students' Perceptions of the Quality of Educational Services of Tabriz University of Medical Sciences, Iran," *Strides Dev Med Educ*, 13 (1), (2016): 41-48.

prerequisite for meeting the needs of both individual students and local or wider communities.⁵ To assess quality, it is essential to compare clients' expectations (what they should "get") with what was actually achieved (what they "have got"). Students' opinions are a reliable source for the evaluation of educational services, determining the difference between their current and expected level, the quality upgrade programmes being based on them.⁶ If HEIs increase the quality of services based on the real needs of clients, they secure their international competitive advantage.⁷

The five-dimensional SERVQUAL (service quality) gap model (launched by Parasuraman et al., 1985) is a globally recognized well-established tool for measuring customer perceived quality of service, widely employed in the banking, insurance, and retail sector. The analysis of the gaps between student expectations and the school's performance takes place in the following five service quality dimensions: Assurance (competent service availability), Responsibility (prompt service delivery), Reliability (correct service performance), Empathy (respectful student treatment) and Tangibility (school facilities and equipment).

The SERVQUAL method was chosen to evaluate and compare the quality of services at institutions of higher education in the Czech Republic and Vietnam. The differences between students' expectations and perceptions of the real quality of services in respective dimensions were identified, the relative importance of which being also rated. The results obtained in both countries were compared and areas for improvement proposed, the gaps detected in the perception of individual parameters giving a useful impetus for further development.⁸

Higher education has attracted research interest in recent years. Comparative survey of this type, however, is a novelty in the Czech Republic.

⁵ Nguyen Duc Hanh, "A Review of Issues of Quality Assurance and Quality Accreditation for Higher Education Institutions and the Situation in Vietnam," *Accreditation and Quality Assurance* 25, no. 4 (July 11, 2020): 273–79, <https://doi.org/10.1007/s00769-020-01439-3>.

⁶ Godswill Ejeohielei Esehie et al., "Framework for Enhancing Students' Smartphone Learning Ability: A Case Study of Nigerian Public Universities," *Journal of Information, Communication and Ethics in Society* 20, no. 2 (November 30, 2021): 213–28, <https://doi.org/10.1108/jices-04-2020-0049>.

⁷ Maria Pujol-Jover, Lola C. Duque, and Maria-Carme Riera-Prunera, "The Recruit Requirements of Recent Graduates: Approaching the Existing Mismatch," *Total Quality Management & Business Excellence* 34, no. 1–2 (February 1, 2022): 57–70, <https://doi.org/10.1080/14783363.2022.2029695>.

⁸ Xiaoqing Huang et al., "A KSA System for Competency-Based Assessment of Clinicians' Professional Development in China and Quality Gap Analysis," *Medical Education Online* 27, no. 1 (February 9, 2022), <https://doi.org/10.1080/10872981.2022.2037401>.

The Vietnamese were chosen for quality perception comparison – despite the declining number of their university students –, as they are the third largest and established minority of foreigners.⁹

II. Theoretical background

The large number of institutions of higher learning has stimulated competition in the tertiary sector, which is reflected in an intense fight for the customer, i.e., the student. In 2020, the Czech Ministry of Education, Youth and Sports (MEYS) registered 26 public, 2 state-maintained and 36 private colleges and universities, eight of the latter having terminated their activities since 2015, three through the merger with another private establishment.¹⁰ The dynamic market of tertiary education forces HEIs to develop their competitive capabilities.¹¹ Quality assurance is therefore their crucial task.¹² To improve quality, thus strengthening competitiveness, it is critical to find out how students perceive the level of services provided.¹³

When applying, candidates consider the school's rating, considering the courses offered, the number and satisfaction of students and graduates, and the quality of the academic environment and staff.¹⁴ Given the growing number of HEIs, applicants tend to compare their expectations more closely with the current conditions, often changing schools during their studies.¹⁵ A survey conducted at a Mexican university shows that student loyalty and retention is

⁹ Czech Statistical Office, "Data on education of foreigners," accessed April 21, 2022, <https://www.czso.cz/csu/czso/4-vzdelavani-cizincu-n0g9gf7lks>.

¹⁰ Ministry of Education, Youth and Sports, *Education*, accessed March 11, 2022, <https://www.msmt.cz/vzdelavani/vysoke-skolstvi/prehled-vysokych-skol-v-cr-3>.

¹¹ Helena Štimac and Mirna Leko Šimić, "Competitiveness in Higher Education: A Need for Marketing Orientation and Service Quality," *Economics & Sociology* 5, no. 2 (November 20, 2012): 23–34, <https://doi.org/10.14254/2071-789x.2012/5-2/2>.

¹² Nguyen Duc Hanh, "A Review of Issues of Quality Assurance and Quality Accreditation for Higher Education Institutions and the Situation in Vietnam," *Accreditation and Quality Assurance* 25, no. 4 (July 11, 2020): 273–79, <https://doi.org/10.1007/s00769-020-01439-3>.

¹³ Nevzat Devebakan, Hüseyin Avni Egeli, and Nilüfer Koçak, "Evaluation of Service Quality Based on Student Expectations and Perceptions in Higher Education Institutions with Servqual Scale: A Research in Dokuz Eylül University Izmir Vocational School," *Yuksekokretim Dergisi* 9, no. 2 (August 1, 2019): 201–12, <https://doi.org/10.2399/yod.18.047>.

¹⁴ Md. Jahangir Alam, "Effects of Service Quality on Satisfaction in Eastern University Library, Bangladesh," *IFLA Journal* 47, no. 2 (September 28, 2020): 209–22, <https://doi.org/10.1177/0340035220959099>.

¹⁵ Ishak, Mohd., Ali Aeshah Mohd., and Shamsudin, Mohd, "Does institution ranking influences students' decisions-making to enrol at private higher education institutions? A pls-sem approach," *Academy of Entrepreneurship Journal*, (2021).

affected by factors such as cleanliness of the university premises, skills of the faculty, and Master students' managerial practice and age; improvement measures having been implemented, the loyalty of Master students increased by 7.7%.¹⁶ Fulfilled expectations, whether about personal preferences or the school environment, have a causal effect on student retention.¹⁷

The quality of education provided and its impact upon the growth of the economy is the subject of much discussion. To be competitive, HEIs are supposed to be market-savvy, considering the factors influencing the decisions of applicants. It is therefore crucial to examine the internal and external motivators that shape the expected and perceived quality of higher education services.¹⁸ The results of the present study suggest that external student motivators are positively related to both the expected and the real perceived service quality. Internal motivators, on the other hand, do not have such a clear affinity with quality.¹⁹ Expectation analysis can help HEIs adapt their marketing mix to attract potential students, retain existing ones, better serving their student-clients' needs in accordance with the principles of employer branding.²⁰

To improve the quality of services supplied, it is necessary to correctly anticipate the factors influencing student satisfaction and loyalty.²¹ Due to the wider offer of higher education providers, applicants are mainly looking for more value for money – a higher level of the study programme and better

¹⁶ Fernando Gonzalez Aleu et al., "Increasing Service Quality at a University: A Continuous Improvement Project," *Quality Assurance in Education* 29, no. 2/3 (July 5, 2021): 209–24, <https://doi.org/10.1108/qa-02-2021-0020>.

¹⁷ Adéla Fajčíková and Hana Urbancová, "Can Higher Education Institutions Adapt to Students' Preferences? A Case Study at the Czech State University," *International Journal for Quality Research* 13, no. 3 (September 15, 2019): 721–34, <https://doi.org/10.24874/ijqr13.03-14>; Ali Soroush et al., "Evaluation of the Educational Services Quality from the Viewpoint of Postgraduate Students at Kermanshah University of Medical Sciences in 2019," *Journal of Education and Health Promotion* 10, no. 1 (2021): 325, https://doi.org/10.4103/jehp.jehp_765_20.

¹⁸ Chen Yan Li, Soaib Asimiran, and Suyitno Suyitno, "Students' Expectations and Perceptions on Service Quality of E-Learning in a Selected Faculty of a Public University in Malaysia," *Proceedings of the 3rd International Conference on Educational Management and Administration (CoEMA 2018)*, 2018, <https://doi.org/10.2991/coema-18.2018.24>.

¹⁹ Ivana Jadric, Bruno Grbac, and Jasmina, Dlacic., "Analysing influences on service quality in higher educational institutions: role of students' intrinsic and extrinsic motivators," in *Ekonomski Fakultet U Osijeku / EFOS*, accessed July 5, 2022, http://www.efos.unios.hr/red/wp-content/uploads/sites/20/2020/06/RED-2020-Proceedings_.pdf.

²⁰ Renata Skýpalová, Vendula Hynková, and Monika Vencourová, "Trends in Strategic Human Resource Management: Employer Brand Attractiveness.," *AD ALTA: Journal of Interdisciplinary Research* 11, no. 1 (June 30, 2021), <https://doi.org/10.33543/1101>.

²¹ T. T. T. Doan, "The Influence of University Sustainability Practices on Student Loyalty: An Empirical Study from Vietnam," *Journal of Asian Finance Economics and Business* 8, no. 10 (2021): 177–185, <https://doi.org/10.13106/jafeb.2021.vol8.no10.0177>.

services.²² Colleges and universities thus ought to focus on the quality, increasing student satisfaction, and, potentially, their own market share, as candidates prefer a brand with a significantly better rating than that of its competitors.²³

According to interim OECD reports, the Europe 2020 strategy education goals are being accomplished. For example, the largest numbers of college and university students in history are currently reported across countries. “The number of students at Czech universities had been growing until 2010, when almost 400,000 students studied at them. Since then, this number has declined every year. Pressure on present-day universities has been accruing due to the competitive environment”²⁴ In 2020, Czech HEIs enrolled 43,001 domestic and 2,730 international students, 29,534 Czechs and 571 foreigners graduating, respectively.²⁵ The numbers of admitted students and those of graduates differ considerably; there are several times more international applicants than graduates. In 2020, 24,853 students from countries outside the EU attended HEIs in the Czech Republic – mostly Russians (7,526), Ukrainians, Kazakhs, Indians, and Belarusians. The sixth largest group was Vietnamese students (450), which is, however, half the size compared to 2013 (945). According to the latest data, Vietnamese [62,842] form the third largest foreigner minority in the Czech Republic after Ukrainians [165,356] and Slovaks [124,544].²⁶ As Vavrečková and Dobiášová argue, Vietnamese seem to be more ambitious than Czechs, 83 % of them aspiring to study at university.²⁷ The authors conducted interviews with staff members teaching foreigners. Respondents pointed to the diligence, conscientiousness, ambition, discipline, and motivation for success seen among Vietnamese students. They also drew attention to mutual respect, helpfulness, and tightness of their families. Vietnamese parents instil in their

²² Helena Štimac and Mirna Leko Šimić, “Competitiveness in Higher Education: A Need for Marketing Orientation and Service Quality,” *Economics & Sociology* 5, no. 2 (November 20, 2012): 23–34, <https://doi.org/10.14254/2071-789x.2012/5-2/2>.

²³ D. M. Griffioen, J. J. Doppenberg, and R. J. Oostdam, “Are More Able Students in Higher Education Less Easy to Satisfy?,” *Higher Education* 75, no. 5 (September 4, 2017): 891–907, <https://doi.org/10.1007/s10734-017-0176-3>.

²⁴ Helena Chládková, Renata Skýpalová, and Veronika Blašková, “Strengthening the University Competitiveness in the Czech Republic,” *Tuning Journal for Higher Education* 9, no. 1 (November 26, 2021): 127–55, [https://doi.org/10.18543/tjhe-9\(1\)-2021pp127-155](https://doi.org/10.18543/tjhe-9(1)-2021pp127-155).

²⁵ Ministry of Education, Youth and Sports, “Education,” accessed March 10, 2022, <https://www.msmt.cz/vzdelavani/skolstvi-v-cr/statistika-skolstvi/data-o-studentech-poprve-zapsanych-a-absolventech-vysokych>.

²⁶ Czech Statistical Office, “Data on education of foreigners,” accessed April 21, 2022, <https://www.czso.cz/csu/czso/4-vzdelavani-cizincu-n0g9gf7lks>.

²⁷ Jana Vavrečková and Karolína Dobiášová, “Integration of children of foreigners from third countries on the basis of the OECD PISA international survey and guided interviews with primary school teachers,” 2012, VUPSV.

children's minds that they should make the most of the opportunities that have opened for them by immigration to the Czech Republic, as evidenced by Šouralová.²⁸ Kratochvil drew attention to the long history of education of Vietnamese students in the Czech Republic, more than ten thousand of them having graduated in the Czech Republic, including the Deputy Prime Minister of Vietnam, several ministers, deputy ministers and university professors.²⁹

In Vietnam, quality assurance was introduced into the higher education system more than ten years ago. This has had a positive impact on university governance, tuition, learning and research activities.³⁰ HEIs' executives have allocated more assets and human resources to ensure the quality of outputs, launching more projects aimed at upgrading and evaluating educational services, thus stimulating the satisfaction and retention of current students and the recruitment of future ones.³¹

According to the Higher Education Act, "higher education institutions, as the highest level of the educational system, are regarded as the top centres of education, independent knowledge, and creative activity and play a key role in the scholarly, scientific, cultural, social, and economic development of society" (Act No. 111/1998 Coll. on Higher Education Institutions). HEIs are supposed to improve the quality of their performance, dealing with students as a kind of interest group.³² A key part of mutual communication is feedback on student

²⁸ Adéla Šouralová, "An educated child as a successful fulfilment of a migration and parenting project? Vietnamese mothers, their children, and educational aspirations," *Social Studies*, 11, no.2 (2016).

²⁹ Bohumil Kratochvil, "Boj o studenty a vietnamská cesta," 109(5), (2015): 345-345, accessed April 3, 2022, <http://www.chemicke-listy.cz/ojs3/index.php/chemicke-listy/article/view/367/367>.

³⁰ Hong-Van Thi Dinh, "Factors Influencing the Students' Perceptions of the Quality of Education Services at Hue University in Vietnam," *INTERNATIONAL JOURNAL OF EDUCATIONAL SCIENCES* 32, no. 1-3 (January 15, 2021), <https://doi.org/10.31901/24566322.2021/32.1-3.1157>; Huu Cuong Nguyen and Thi Thu Ta, "Exploring Impact of Accreditation on Higher Education in Developing Countries: A Vietnamese View," *Tertiary Education and Management* 24, no. 2 (November 20, 2017): 154-67, <https://doi.org/10.1080/13583883.2017.1406001>.

³¹ Huu Cuong Nguyen, "How to Fulfil Vietnam's Higher Education Accreditation Strategic Plan 2017-2020," *The International Journal of Educational Organization and Leadership* 24, no. 3 (2018): 17-25, <https://doi.org/10.18848/2329-1656/cgp/v24i03/17-25>; Hong-Van Thi Dinh, "Factors Influencing the Students' Perceptions of the Quality of Education Services at Hue University in Vietnam," *INTERNATIONAL JOURNAL OF EDUCATIONAL SCIENCES* 32, no. 1-3 (January 15, 2021), <https://doi.org/10.31901/24566322.2021/32.1-3.1157>.

³² Piotr Grudowski and Katarzyna Szczepańska, "Quality Gaps in Higher Education from the Perspective of Students," *Foundations of Management* 13, no. 1 (January 1, 2021): 35-48, <https://doi.org/10.2478/fman-2021-0003>.

satisfaction and perceptions of the quality of services offered, this interaction taking place in a highly competitive cross-border environment.³³

The concepts of monitoring customer satisfaction encompass, for example, a system of wishes and complaints or analysis of lost customers. To measure satisfaction, the Kano model is used, dividing product or service requirements into three categories – mandatory, one-dimensional, and attractive. The most common approach to evaluating the quality of services across institutions is the SERVQUAL method, the popularity of which is evidenced by the considerable volume of research work employing this model worldwide.³⁴

A search of the Web of Science and SCOPUS databases yielded a total of 4,046 responses to the “SERVQUAL” query (in all fields) for the period from 2006 to 2022. The SERVQUAL model is widely used in the WoS database in many areas, especially Business Economics (554), Social Science (158), Engineering (140), Computer Science (134) and Educational Research (115). The query refinement for the combination of “SERVQUAL” (all fields) and “universit*” (in the topic field) brings 208 links. The articles come from Malaysia (5), Croatia (2), Indonesia (2), Slovenia (1) and the UAE (1). The topic is widely researched in Iran (25), Malaysia (21), Croatia (17), the USA (15) and Indonesia (12). No article is recorded for the Czech Republic. In the SCOPUS database, the areas that mostly use the SERVQUAL method are Social Science (145), Business, Management and Accounting (102), Medicine (50), Computer Science (44) and Engineering (26). Refinement of the query on the combination “SERVQUAL” (all fields) and “universit*” (in the topic field) yields 317 results mainly from Malaysia (37), Iran (34), the US (32), the UK (19), Turkey (18). There are no articles from the Czech Republic.

III. Research objective, methodology, and data

The aim of the paper is to assess the quality of services provided by colleges and universities in the Czech Republic and Vietnam as perceived by students, and to recommend measures for its competitive increase.

³³ Basheer Al-Alak, B.A., and Alnaser, A.S.M., “Assessing the relationship between higher education service quality dimensions and student satisfaction,” *Australian Journal of Basic and Applied Sciences*, 6(1), (2012): 156-164; Mark Christopher Springer and Craig K. Tyran, “Assessing the Quality of Faculty-Delivered Individual Academic Advising,” *Quality Assurance in Education* 30, no. 2 (February 4, 2022): 236–50, <https://doi.org/10.1108/qaе-07-2021-0118>; Alam, M. J., “Effects of service quality on satisfaction in Eastern University Library, Bangladesh,” *IFLA journal*, 47(2), (2021): 209-222, <https://doi.org/10.1177/0340035220959099>.

³⁴ Khanchitpol Yousapronpaiboon, “SERVQUAL: Measuring Higher Education Service Quality in Thailand,” *Procedia - Social and Behavioral Sciences* 116 (February 2014): 1088–95, <https://doi.org/10.1016/j.sbspro.2014.01.350>.

The choice of the two countries has its factual and historical reasons. In the Czech Republic, comparative research on this issue of considerable scope has not yet been carried out. Vietnam was chosen not only due to traditional ties between the two countries, but mainly because Vietnamese higher education institutions take exemplary care of the quality of educational services as a factor increasing their attractiveness and rating.³⁵ In addition, there are more career-oriented Vietnamese students who invest in their education and study abroad.³⁶ In the Czech Republic, their number has been growing only slightly in recent years, but it is likely that the increasing quality of education provided will attract them in larger numbers.³⁷

The SERVQUAL method applied assumes that customer satisfaction reflects the difference between expectations and perceptions of the quality of the service obtained. A 22-item SERVQUAL questionnaire modified for the higher education sector was administered. The signs of quality were transformed into statements adjusted for each of the five SERVQUAL dimensions using a student-oriented approach.³⁸ A Likert five-point scale ranging from strong disagreement (1) to strong agreement (5) was used. Two types of answers were created for each survey question – “so it should be” (respondents’ expectations, E) and “so it is” (perception of the real situation, P). When evaluating research results, the perception gap (P – E, i.e., the perception score minus the expectation score) was identified. A positive score means that expectations have been met or exceeded, i.e., the quality of services is satisfactory. With a negative score, expectations were not met, i.e., the service quality is unsatisfactory and there is room for improvement in the given area. In addition, participants were asked to distribute 100 points

³⁵ Hong-Van Thi Dinh, “Factors Influencing the Students’ Perceptions of the Quality of Education Services at Hue University in Vietnam,” *INTERNATIONAL JOURNAL OF EDUCATIONAL SCIENCES* 32, no. 1–3 (January 15, 2021), <https://doi.org/10.31901/24566322.2021/32.1-3.1157>.

³⁶ Huu Cuong Nguyen, “How to Fulfil Vietnam’s Higher Education Accreditation Strategic Plan 2017–2020,” *The International Journal of Educational Organization and Leadership* 24, no. 3, (2018): 17–25, <https://doi.org/10.18848/2329-1656/CGP/v24i03/17-25>.

³⁷ Czech Statistical Office, “Data on education of foreigners,” accessed April 21, 2022, <https://www.czso.cz/csu/czso/4-vzdelavani-cizincu-n0e9gf7lks>.

³⁸ Mohammad S. Owlia and Elaine M. Aspinwall, “A Framework for the Dimensions of Quality in Higher Education,” *Quality Assurance in Education* 4, no. 2 (June 1, 1996): 12–20, <https://doi.org/10.1108/09684889610116012>; Ana Brochado, “Comparing Alternative Instruments to Measure Service Quality in Higher Education,” *Quality Assurance in Education* 17, no. 2 (April 24, 2009): 174–90, <https://doi.org/10.1108/09684880910951381>; Teo Boon Chui et al., “Evaluation of Service Quality of Private Higher Education Using Service Improvement Matrix,” *Procedia - Social and Behavioral Sciences* 224 (June 2016): 132–40, <https://doi.org/10.1016/j.sbspro.2016.05.417>.

to the five dimensions in proportion to their importance in the context of the services provided.

During 2021, the SERVQUAL questionnaire was posted on Facebook pages of student groups in the Czech Republic and Vietnam. Students were informed that the outputs of the questionnaire would be used only for research purposes and its completion was voluntary. The questionnaire was anonymous, did not collect any personal information and the respondent could not be identified according to it.³⁹ The only condition for its completion was that the student finished at least one year of university studies. 845 respondents completed the survey in the Czech Republic and 955 in Vietnam. Since there were approximately 250,000 university students in the Czech Republic and 1,700,000 in Vietnam in 2021, the minimum number of respondents was calculated (with a 95% confidence level, 3.5% margin of error and 0.5% standard deviation) as 782 for the former and 784 for the latter country (Z-score of 1.96 for both), the size of respondent samples thus being sufficient.⁴⁰

Five variants of the research hypothesis related to SERVQUAL dimensions were formulated:

H_A: There is a significant difference in the **Tangibles** service quality dimension between Czech and Vietnamese HEIs.

H_B: There is a significant difference in the **Reliability** service quality dimension between Czech and Vietnamese HEIs.

H_C: There is a significant difference in the **Responsiveness** service quality dimension between Czech and Vietnamese HEIs.

H_D: There is a significant difference in the **Assurance** service quality dimension between Czech and Vietnamese HEIs.

H_E: There is a significant difference in the **Empathy** service quality dimension between Czech and Vietnamese HEIs.

IV. Results and discussion

The aim of the paper is to assess the quality of services provided by colleges and universities in the Czech Republic and Vietnam as perceived by students, and to recommend measures for its competitive increase.

³⁹ Qualitative data has been anonymized in line with ethical guidance. These data are not available open source to preserve anonymity.

⁴⁰ Minh-Ngoc Nguyen, "Number of university students in Vietnam from 2016 to 2019," 2021, accessed March 9, 2022, <https://www.statista.com/statistics/815091/number-of-university-students-in-vietnam/#statisticContainer>; Czech Statistical Office, "Data on education of foreigners," accessed April 21, 2022, <https://www.czso.cz/csu/czso/4-vzdelavani-cizincu-n0g9gf7lks>.

To determine the quality of services provided, the SERVQUAL method was utilized, measuring student satisfaction through the difference between the expected and actual delivered service. The procedure was modified so that the individual factors suited the area of higher education.

Table 1 presents the survey results of students in the Czech Republic. In the Tangibles dimension, respondents expect most that the premises will be student-friendly and well-maintained, and school websites clear and continuously updated. These two factors also show the greatest gaps, the overall one, however, reaching only -0.46. The biggest dissatisfaction is caused by the website, the gap amounting to -1.05. With the Reliability parameter, students expect most to receive the promised services and helpful assistance in case of troubles, these factors also indicating the largest gaps (-0.91 and -0.99, respectively), the average gap being lower, namely -0.56. These findings were in line with those in the Responsiveness dimension, where the factors with the highest expectations achieve the lowest level of satisfaction. The Assurance parameter suggests that participants have the highest demands on the experience and friendly approach of academic staff, this factor bringing them the greatest satisfaction. The gap was found only at the level of -0.37, while the value of the total gap was -0.73, i.e., the highest of all dimensions. As can be seen from the table, the other factors monitored have higher expectations than satisfaction. Within the Empathy parameter, students expect the school to follow their best interests, however, with this factor, the widest dissatisfaction gap (-0.80) was registered, the overall gap being -0.50.

Table 1

Student Expectation/Perception SERVQUAL Gap Analysis for the Czech Republic

Dimensions of quality	ME	SD	MP	SD	GAP (MP-ME)
Tangibles					
Modern equipment	3.71	1.06	3.57	0.89	-0.14
Attractive and well-kept spaces	4.44	0.73	3.95	0.89	-0.49
Clear and up-to-date website	4.68	0.68	3.63	1.04	-1.05
The staff look enjoyable	3.98	1.01	3.79	0.95	-0.19
Overall Mean	4.20		3.74		Overall Gap -0.46
Reliability					
Providing services as promised	4.74	0.55	3.83	1.00	-0.91
Sympathetic with and reassure student's problem	4.69	0.62	3.70	1.10	-0.99

Dimensions of quality	ME	SD	MP	SD	GAP (MP-ME)
Providing services at the promised time	4.21	0.96	3.99	0.94	-0.22
College keeps unambiguous records	4.37	0.98	4.14	0.92	-0.23
College is dependable	3.72	1.12	3.29	1.01	-0.43
Overall Mean	4.35		3.79		Overall Gap -0.56
Responsiveness					
Accurate and unambiguous information for students	4.80	1.01	3.87	0.99	-0.93
Providing fast services	3.49	1.08	3.91	0.88	0.42
Willingness to help students	4.70	0.58	3.91	0.94	-0.79
Willingness to respond to a student's request	4.72	0.56	3.80	1.00	-0.92
Overall Mean	4.43		3.87		Overall Gap -0.56
Assurance					
Employees can be trusted	4.66	0.65	3.83	0.93	-0.83
Employees of college are polite	4.44	0.84	3.69	0.90	-0.75
The university staff are experienced and friendly	4.84	0.44	4.47	0.73	-0.37
Students feel safe when dealing with college employees	4.81	0.48	3.83	1.05	-0.98
Overall Mean	4.69		3.96		Overall Gap -0.73
Empathy					
The university gives students individual attention	4.28	0.92	3.66	1.00	-0.62
The university has students' best interests at heart	4.83	0.49	4.03	0.94	-0.80
The teachers take care of me individually	3.52	1.12	3.37	0.98	-0.15
The teachers consider my personal problems	3.34	1.25	3.15	1.05	-0.19
The teachers know students' need	4.13	1.00	3.37	1.02	-0.76
Overall Mean	4.02		3.52		Overall Gap -0.50

Note: ME = Mean Score of Student Expectation, MP = Mean Score of Student Perception, SD = Standard Deviation, Mean Score of 1 = strongly disagree, 5 = strongly agree.

Source: Own research.

The importance that respondents attached to each dimension is indicated in Table 2, showing the average gap scores. Given that Czech students identified the parameter with the greatest overall gap – Assurance (-0.73) – as the third most preferred one, universities should focus on enhancing the service quality within this very dimension.

Table 2
Average Gap Scores for the Czech Republic

Dimensions of quality	Expectation	Perception	Gap	Importance of dimension (%)	Average Gap score
Tangibles	4.20	3.74	-0.46	15.25	-0.070
Reliability	4.35	3.79	-0.56	17.26	-0.097
Responsiveness	4.43	3.87	-0.56	22.84	-0.129
Assurance	4.69	3.96	-0.73	21.04	-0.154
Empathy	4.02	3.52	-0.50	23.61	-0.118
Overall average GAP score for all dimensions					-0.401

The same is illustrated by Figure 1. It shows that the highest gap scores for Czech respondents were recorded on Assurance and Responsiveness dimensions, Empathy being at the bottom of preference rankings. Therefore, Czech HEIs should focus on their staff's confidence and helpfulness.

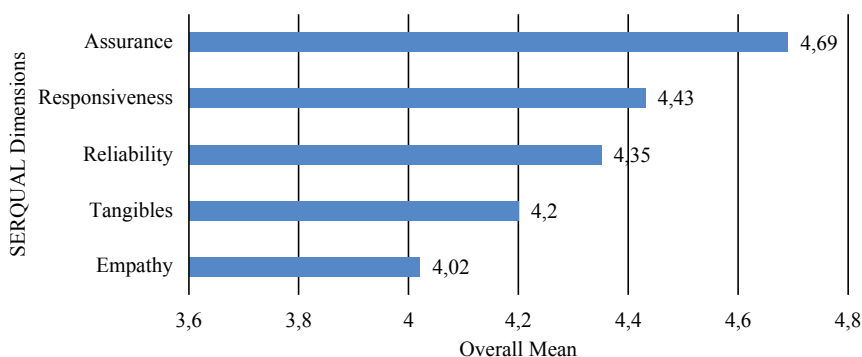


Figure 1
SERVQUAL Dimensions Ranking Based
on Overall Mean Values (Czech Republic)

Table 3 shows the survey outcomes of students in Vietnam. Like Czech respondents, their Vietnamese counterparts also have higher expectations than satisfaction, however, the gaps in all dimensions are significantly lower, which means that they are more satisfied with the quality of services than Czech students. This is confirmed by the smaller overall gap of all dimensions (-0.03). As for the Tangibles dimension, students were most dissatisfied with the quality of the school website (-0.27), the perceived difference between expectations and reality being almost four times smaller compared to Czech students' dissatisfaction. In the Reliability dimension, respondents were most disillusioned with the school's inability to provide service at the promised time (-0.24).

Table 3

Student Expectation/Perception SERVQUAL Gap Analysis for Vietnam

	ME	SD	MP	SD	GAP (MP-ME)
Tangibles					
Modern equipment	4.52	0.70	4.45	0.75	-0.07
Attractive and well-kept spaces	4.52	0.67	4.55	0.66	0.03
Clear and up-to-date website	4.55	0.69	4.28	0.84	-0.27
The staff look enjoyable	4.45	0.72	4.41	0.75	-0.04
Overall Mean	4.51		4.42		Overall Gap -0.09
Reliability					
Providing services as promised	4.47	0.73	4.45	0.72	-0.02
Sympathetic with and reassure student's problem	4.48	0.71	4.27	0.84	-0.21
Providing services at the promised time	4.35	0.83	4.11	0.93	-0.24
College keeps unambiguous records	4.44	0.73	4.43	0.73	-0.01
College is dependable	4.43	0.75	4.39	0.74	-0.04
Overall Mean	4.43		4.33		Overall Gap -0.10
Responsiveness					
Accurate and unambiguous information for students	4.59	0.63	4.47	0.72	-0.12

	ME	SD	MP	SD	GAP (MP-ME)
Providing fast services	4.47	0.72	4.31	0.79	-0.16
Willingness to help students	4.62	0.63	4.43	0.76	-0.19
Willingness to respond to a student's request	4.60	0.63	4.43	0.76	-0.17
Overall Mean	4.57		4.41		Overall Gap -0.16
Assurance					
Employees can be trusted	4.63	0.61	4.46	0.72	-0.17
Employees of college are polite	4.60	0.62	4.45	0.71	-0.15
The university staff are experienced and friendly	4.63	0.62	4.54	0.66	-0.09
Students feel safe when dealing with college employees	4.56		4.35		-0.21
Overall Mean	4.61		4.45		Overall Gap -0.16
Empathy					
The university gives students individual attention	4.45	0.74	4.54	0.65	0.09
The university has students' best interests at heart	4.30	0.82	4.43	0.75	0.13
The teachers take care of me individually	4.33	0.86	4.20	0.91	-0.13
The teachers consider my personal problems	4.25	0.92	4.19	0.92	-0.06
The teachers know students' need	4.49	0.71	4.28	0.85	-0.21
Overall Mean	4.36		4.33		Overall Gap -0.03

Source: Own research.

Table 4 shows how important are dimensions for respondents, presenting their average gap scores. Given that Vietnamese students also identified the Assurance dimension as the third most preferred one, reporting the greatest overall gap (-0.038), it is obvious that Vietnamese universities should focus on improving the service quality within this very parameter, too.

Table 4
Average GAP Score in Vietnam

Dimensions of quality	Expectation	Perception	Gap	Importance of dimension (%)	Average gap score
Tangibles	4.51	4.42	-0.09	23.51	-0.021
Reliability	4.43	4.33	-0.10	17.13	-0.017
Responsiveness	4.57	4.41	-0.16	19.26	-0.031
Assurance	4.61	4.45	-0.16	19.91	-0.038
Empathy	4.36	4.33	-0.03	20.19	-0.006
Overall average GAP score for all dimensions					-0.113

The same is documented by Figure 2. It is also evident that both limit values – the highest and lowest gap scores – were recorded on the Assurance and Empathy dimensions, respectively, as in the case of participants in the Czech Republic.

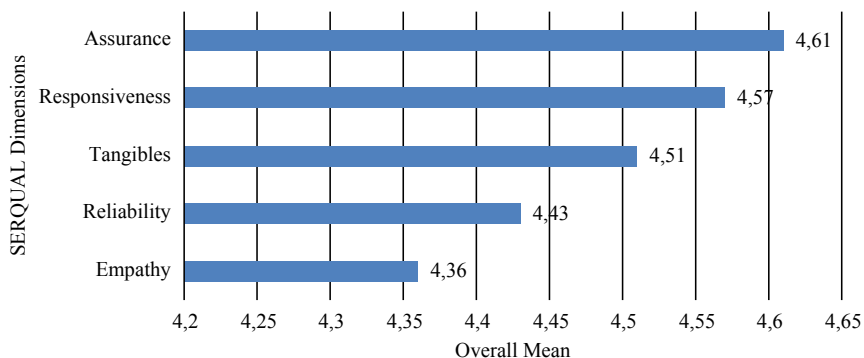


Figure 2

SERVQUAL Dimensions Ranking Based on Overall Mean Values (Vietnam)

As Tables 2 and 4 and Figures 1 and 2 document, although the individual parameters are given different importance (the most important aspect for students in the Czech Republic is Empathy, while in Vietnam it is Tangibles), in two of them – Assurance and Responsiveness dimensions – the highest SERVQUAL average gap score appeared in both countries monitored. Therefore, institutions of higher education should pay due attention to these two aspects of their operation.

The following conclusions about the differences between Czech and Vietnamese HEIs ensue from statistical testing of hypotheses H_{A-E} :

H_A : An insignificantly weak negative correlation was found in the Tangibles service quality parameter ($r=-.023$, $p > 0.05$). There is a significant difference in the Tangibles dimension between Czech and Vietnamese HEIs ($t_{844} = -23.173$, $p < 0.05$; see Tables 1 and 2), i.e., H_A is supported.

H_B : An insignificant low, near-zero correlation (independence) exists in the Reliability service quality parameter ($r=-.026$, $p > 0.05$). A significant difference in the Reliability dimension between Czech and Vietnamese institutions of higher learning was confirmed ($t_{844} = -17.583$, $p < 0.05$), H_B thus being supported.

H_C : In the Responsiveness service quality dimension, a statistically insignificant weak, close-to-zero correlation (independence) was detected ($r=.021$, $p > 0.05$). There is a substantial difference in the Responsiveness dimension between Czech and Vietnamese colleges and universities ($t_{844} = -16.677$, $p < 0.05$), H_C being supported.

H_D : An insignificant low correlation near zero (i.e., independence) was observed in the Assurance service quality dimension ($r=-.025$, $p > 0.05$). A substantial difference in the Assurance dimension between Czech and Vietnamese HEIs was verified ($t_{844} = -16.203$, $p < 0.05$), so H_D is supported.

H_E : In the Empathy service quality dimension, an insignificant weak correlation close to zero (independence) was found ($r=.011$, $p > 0.05$). There is a significant difference in the Empathy dimension between Czech and Vietnamese HEIs ($t_{844} = -24.266$, $p < 0.05$), H_E thus being supported.

In summary, no statistical dependence was identified, the correlation coefficient always coming close to zero, the values for the Czech Republic and Vietnam are mutually independent.

Two of the sample tests of mean values showed that the p-values for the Czech Republic and Vietnam differ considerably, those for the latter country being significantly lower.

Measuring the quality of services in higher education utilizing the SERVQUAL tool has become commonplace worldwide. The results regarding the predominance of expectations over the perception of the service quality are like those presented in this paper, while the prioritization of service quality dimensions is usually different. (For example, surveying the preferences of law students in Osijek, revealed the smallest and largest

negative gaps in the Reliability and Empathy dimensions, respectively. Comparing the quality of services at eight Pakistani universities, Zeshan et al. also demonstrated a low-quality perception in all five dimensions.⁴¹ Abu Hasan et al. arrived at the reverse order of priority compared to the present study – from Empathy [the most important] to Assurance [the least important], carrying out a student satisfaction survey at private institutions of higher learning.⁴² Khodayari and Khodayari examined the gap between the expected and actual service received by students at Islamic Azad University in Iran, concluding that the opposite dimensions were Reliability and Empathy.⁴³

By comparing research and non-research HEIs, Mohamad Yusof et al. suggest that the most important parameter is Tangibles, the least important being again Empathy.⁴⁴ Al-Alak and Alnaser reached the same conclusion as the present paper, having surveyed business students at a university in Jordan, Assurance and Reliability proving to be the quality dimensions that need to be improved the most.⁴⁵ On the other hand, there is the greatest satisfaction with the Assurance dimension among engineering students in Thailand, as was found by Kiatcharoenpol et al., the least satisfaction being recorded in the Responsiveness parameter.⁴⁶ Datta and Vardhan showed that management students at international campuses in the UAE considered the dimensions of Responsiveness and Tangibility to be the most and least important, respectively.⁴⁷ In Vietnam, factors affecting university student satisfaction

⁴¹ Ashi Zeshan, T. Afridi, and Salman Khan, "Assessing Service Quality in Business Schools: Implications for Improvement," in *The 3rd International Conference on Assessing Quality in Higher Education* (2010): 220-232.

⁴² Hishamuddin Fitri Hasan et al., "Service Quality and Student Satisfaction: A Case Study at Private Higher Education Institutions," *International Business Research* 1, no. 3 (February 9, 2009), <https://doi.org/10.5539/ibr.v1n3p163>.

⁴³ Faranak, Khodayari, and Behnaz, Khodayari, "Service quality in higher education," *Interdisciplinary Journal of Research in Business* 1, no. 9, (2011): 38-46.

⁴⁴ Mohamad Yusof, A.R., Hassan, Z., Abdul Rah man, S., and Ghouri, A.M., "Educational service quality at public higher educational institutions: A proposed framework and importance of the sub – dimensions," *International Journal of Economics Business and Management Studies* 1, no. 2, (2012): 36-49.

⁴⁵ Md. Jahangir Alam, "Effects of Service Quality on Satisfaction in Eastern University Library, Bangladesh," *IFLA Journal* 47, no. 2 (September 28, 2020): 209–22, <https://doi.org/10.1177/0340035220959099>.

⁴⁶ T. Kiatcharoenpol, N. Subvaranont, and P. Pachayamai, "Measuring Service Quality on Educational Services of Engineering Curriculum Using SERVQUAL Model," *2017 IEEE 9th International Conference on Engineering Education (ICEED)*, November 2017, <https://doi.org/10.1109/iceed.2017.8251184>.

⁴⁷ Khyati Shetty Datta and Julie Vardhan, "A Servqual-Based Framework for Assessing Quality of International Branch Campuses in UAE," *SAGE Open* 7, no. 1 (January 2017): 215824401667629, <https://doi.org/10.1177/2158244016676294>.

were also regression-analyzed by Van Truong et al.⁴⁸ According to a study carried out at a Dutch university, the relationship of students with their teachers and faculty and staff is important. The results of the conducted study show that these relationships will positively affect the university experience of students, their willingness to complete their studies at the given school without ending their studies prematurely as described by Snijders et al.⁴⁹

The quality of education is still under-researched and under-defined problem as pointed out by Naylor et al.⁵⁰ The SERVQUAL research reveals different quality dimension preferences, capturing statistically significant gaps between expectations and perceptions that allow to promote HEIs' development and competitiveness. Identifying service quality gaps may serve as the basis for planning, prioritizing, and deciding on the allocation of human and financial resources.

V. Conclusion

It may seem that competitiveness and the search for competitive advantage do not belong in the university environment, but the opposite is true. Universities compete primarily in obtaining the resources needed for their future development and survival. They are concerned with obtaining students in sufficient quantity and quality, obtaining renowned pedagogues, receiving financial resources, as well as strengthening the public's positive evaluation.

The research focused on the university students' perception of the quality of educational services in the Czech Republic and Vietnam, emphasizing the factors influencing the competitiveness of higher education institutions.

The research examined the perception of the quality of services provided among students of the Czech Republic and Vietnamese students with the aim of which service quality factors universities in these countries should focus on to increase competitiveness on the global market.

⁴⁸ Hung Van Truong, Cuong Hung Pham, and Nhan Hoang Vo, "Service Quality and Students Level of Satisfaction in Private Colleges in Vietnam," *International Journal of Financial Research* 7, no. 3 (May 13, 2016), <https://doi.org/10.5430/ijfr.v7n3p121>.

⁴⁹ Ingrid Snijders et al., "Relationship Quality Time: The Validation of a Relationship Quality Scale in Higher Education," *Higher Education Research & Development* 37, no. 2 (July 24, 2017): 404–17, <https://doi.org/10.1080/07294360.2017.1355892>.

⁵⁰ Ryan Naylor et al., "Students as Customers versus as Active Agents: Conceptualising the Student Role in Governance and Quality Assurance," *Higher Education Research & Development* 40, no. 5 (July 16, 2020): 1026–39, <https://doi.org/10.1080/07294360.2020.1792850>.

The outcomes of the survey show that the participants had greater expectations about services than their perceived quality turned out to be. Vietnamese students reported higher satisfaction than the Czech ones, an overall average gap score for all quality dimensions being -0.401 for the latter and -0.113 for the former. A more critical perception of service levels was recorded in the Czech Republic. Regardless of the importance attached to specific parameters, the survey suggests that Czech HEIs should improve communication with students, respond appropriately to their requirements and individual problems, meet the commitments made, and create a supportive academic environment of mutual trust and helpful willingness. In Vietnam, higher education is less accessible because it is costly, and paradoxically, most university graduates work in fields where they do not even need it. Education is still considered a prestigious affair, Vietnamese students being more grateful for the opportunity to study and more motivated to learn than their Czech counterparts, which seems to have affected their greater satisfaction with the school services delivered.

The diversity of the sample of students and the complexity of the situation in both countries does not allow to make over-generalizations of the present findings.

Further research should be extended to other countries, especially to the V4 ones, which have similar historical and economic backgrounds. A survey of the perception of service quality by other stakeholders such as members of academic, technical, and administrative staff, or a comparison of public and private education providers could also produce useful outcomes. To improve the quality of services and increase the domestic and international competitiveness of institutions of higher education, it is advisable to undertake similar satisfaction surveys on a regular basis.

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