



IDENTIFICATION OF FACTORS FOR ANALYSIS AND EVALUATION OF HEIs PERFORMANCE

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Abstract: Analysing and evaluating various aspects of performance in HEIs requires a systematic approach. Higher Education Institutions (HEIs) are the foundation for the development of every society. By analysing and evaluating organisational performance, valuable information is gained for potential improvements in the future. HEIs should analyse, measure, and assess the achievement of results in relation to their goals, strategy, and policy. Analysing and evaluating organisational performance enables a comprehensive understanding of the organisation's strengths and weaknesses. The research was conducted among employees in HEIs by testing employees' attitudes. A questionnaire was used in the research. The aim of this study is to apply Exploratory Factor Analysis (EFA) based on original variables from the widely accepted standard ISO 9004:2018 guidelines for achieving sustainable success to analyse and evaluate organisational performance. The results of the factor analysis confirm that all obtained values are above the satisfactory values, thereby confirming the reliability of the data. For analysing and evaluating performance in HEIs, it is crucial to identify and understand the factors that may lead to improvements in overall organisational performance in the future. Based on the variables related to performance indicators, analysing and evaluating performance, conducting internal reviews, self-assessment, and re-evaluating the obtained information can improve performance in the future.

Keywords: Organizational performance, Quality, Higher Education Institutions (HEIs), Exploratory Factor Analysis (EFA)

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1. INTRODUCTION

In order to improve the quality of the organisation, systems for measuring organisational performance are increasingly being adopted (Oladimeji et al., 2025). The concept of quality management has developed in proportion to the development of society and the adaptation to market changes. Organisations must expand their operations to achieve societal satisfaction, i.e., the satisfaction of all stakeholders (Deleryd & Fundin, 2025). Increasing competition in the market demands a higher level of product/service quality through the improvement of organisational performance (Sfreddo et al., 2021). In this regard, all organisational systems should make continuous efforts to invest in improving the quality level in order to adapt their operations to contemporary market trends (Wolniak, 2019). In the global environment, performance improvement is a high-priority issue for all organisations (Carvalho et al., 2023). Organisational performance is directly linked to quality management (Kuo & Tsai, 2019). Poor or low levels of quality will directly and negatively affect the competitive advantage of the organisational system (Clemons & Jance, 2024).

All organisations, regardless of type, form, or nature, must establish a systematic approach for analysing and evaluating organisational performance (ISO, 9004). In order to understand, measure, and evaluate organisational performance, it is necessary to highlight the key aspects related to performance evaluation. Organisational performance can be measured in various ways but may also be influenced by different variables (Antony et al., 2022). Collected and available information must be analysed and evaluated to update the organisation's context, strategy, policy, and goals. In this sense, indicators may refer to strategic, operational, and financial performance (Antony et al., 2022). The quality of business performance depends on the previously mentioned groups of performance (Ruso et al., 2024). Information from these performances may relate to aspects that describe the status of activities, processes, and resources, both internal and external environments, as well as the identification of information that may relate to potential performance improvements within organisations.

For the improvement of organisational performance, it is essential to intensify efforts to monitor all activities related to project ideas and solutions (Larsson et al., 2025). Organisations must analyse and evaluate their progress in relation to business performance during the achievement of planned results compared to strategic organisational goals (ISO, 9004). Certain authors, such as Akpa et al. (2021), point out that research shows if employees are committed and share the same values as the organisation as a whole, this can contribute to improving performance in the direction of achieving strategic goals and increasing efficiency and effectiveness. This stems from the fact that there is a close link between organisational culture and business performance. Business excellence of organisational systems consists of a value system that encompasses organisational culture, values, and employees within organisations (Araújo & Sampaio, 2014). Regardless of whether they are profit or non-profit organisations, organisational performance represents a highly significant aspect for all organisations, whether they are of a manufacturing or service nature (Akpa et al., 2021).

Although in the past the concept of quality and the measurement of organisational performance was primarily associated with industrial production, today, in the global market, these concepts are almost equally represented in service sectors. In this regard, the aim of this paper is to identify the influencing factors for performance measurement in higher education institutions through the application of the statistical method of factor analysis. There is a lack of literature addressing the dimensions of organisational performance in higher education institutions (Khalaf et al., 2024). Considering the existing gap in the literature regarding the potential for improving organisational performance (Nandi, 2022), this research takes a step

forward in identifying factors and analysing indicators that are derived and suitable for evaluating performance in higher education institutions.

2. LITERATURE REVIEW

For the survival of service organisations in today's dynamic market environment, increasing attention is being paid to improving quality levels, reducing costs, and enhancing efficiency and effectiveness to ensure the survival of organisational systems in a competitive market (Anwar & Abdullah, 2021). Quality improvement is positively associated with the enhancement of performance in organisational systems (Bayo-Moriones & de la Torre, 2022). Investment in improving quality management can prevent the transfer of problems to subsequent phases, as identifying root causes can prevent further errors that may impact organisational performance (Bayo-Moriones & de la Torre, 2022). In this way, quality management contributes to the reduction of variation and promotes activities aimed at the continuous improvement of organisational performance. In order to improve efficiency and effectiveness, organisations are increasingly adopting performance measurement systems (Oladimeji et al., 2025). Organisational performance is an indicator of the achievement of organisational goals (Dyer & Reeves, 1995). There is a close connection between internal audits conducted within organisations and performance improvement, and the information obtained in this way can be utilised by all interested parties (Hammood & Dammak, 2023). It is highly important for organisations to measure organisational performance. Performance measurement, or a snapshot of the current state, can be carried out based on financial and non-financial indicators (Kaplan & Norton, 1992). In the past, the measurement, analysis, and evaluation of organisational performance was intended for commercial organisations, whereas today, that is no longer the case; on the contrary, non-profit organisations are also interested in this type of analysis in order to survive in a competitive market (Makki et al., 2023; Kiriri, 2022).

Although in the past the concept of quality was primarily associated with industry, today this paradigm is equally present in service sectors. This particularly applies to higher education institutions (HEIs), which play a key role in societal development (Kiriri, 2022). HEIs must adopt a performance measurement system to meet the requirements of all interested parties and ensure survival in a competitive market (Makki et al., 2023). HEIs must establish approaches that will ensure sustainability and resilience to all challenges in today's market environment (Al-Bahi et al., 2021). It is believed that if HEIs conduct performance measurement and evaluation, this may have a positive effect on potential future improvements (Kiriri, 2022). The activities of business processes related to the measurement and evaluation of information should be carried out so that organisations can monitor their progress and make effective decisions (ISO, 9004). The field of higher education is a specific domain, and it is highly complex to create universal indicators that can be applied across all HEIs (Makki et al., 2023). The performance measurement system in HEIs must be such that it includes all interested parties (Kiriri, 2022). However, it is also necessary to consider the fact that various stakeholders of HEIs have increased their expectations (Kiriri, 2022). Internationalisation has created a globally competitive market, and the managerial structures of HEIs must, for the purpose of ensuring business sustainability, conduct measurement of the overall performance of both academic and non-academic processes (Yeung, 2018). Scientific and technological development creates significant opportunities for the economic progress of a country (Cimil & Plotnic, 2021). Comprehensive performance measurement in the field of higher education can be conducted through the creation of Key Performance Indicators (KPIs), followed by the analysis and evaluation of performance for potential improvements (Varouchas et al., 2018). For the analysis and evaluation of the information obtained in HEIs, it is crucial to identify and understand the

factors that lead to the improvement of organisational performance (Chaiya & Ahmad, 2021). A comprehensive approach to performance measurement based on applied indicators will, in the future, lead to improvements that initially contribute to achieving business sustainability in HEIs (Yeung, 2018). Analysing and evaluating performance in HEIs is a complex task, as performance must be considered from the perspective of the most important stakeholders (Matosas-López et al., 2019). The field of higher education is a major driver of social development, and performance analysis and evaluation are also significant from the perspective of university/faculty rankings on prestigious league tables (Meier & Schiopu, 2020). Like all other organisations, HEIs should have a clear framework for understanding the steps involved in creating performance indicators, analysing and evaluating performance, conducting internal reviews, self-assessment, and re-evaluating the information obtained during performance measurement (ISO, 9004).

3. DATA AND METHODOLOGY

Based on the literature review, it is concluded that it is necessary to select variables for the analysis and evaluation of performance in HEIs. Accordingly, variables were selected from relevant literature (ISO, 9004). The selected variables were fully adopted in their original form. All proposed variables were included in a questionnaire completed by teaching staff and part of the non-teaching staff in HEIs (employees in the Student Services Office and the Office for the Organisation of Teaching and Exams). The questionnaire, which comprised demographic and seven professional questions, was developed using Google Forms and distributed via email.

Data were collected using both Cyrillic and Latin script versions of the questionnaire. After data collection, the responses were coded and integrated into a single Excel spreadsheet. A total of 374 responses were collected. Responses were obtained based on the attitudes of HEI employees using a five-point Likert scale. The data were processed using the statistical package SPSS for Exploratory Factor Analysis.

4. RESULTS AND DISCUSSION

According to the demographic structure analysis based on respondents' gender, 176 male and 198 female participants took part in the study. Furthermore, based on job position within HEIs, 63 participants were administrative staff, 63 were teaching associates/assistants, and 248 were professors. Regarding work experience, 29 respondents had up to 30 years of experience, 94 were in the 31–40 age group, 124 in the 41–50 age group, 88 in the 51–60 age group, and 39 respondents were over 60 years old. In terms of founding structure, 339 participants were from public HEIs, while 35 were from HEIs founded by private individuals. Following the demographic analysis, the statistical technique of Exploratory Factor Analysis (EFA) was applied. The multivariate statistical technique known as Exploratory Factor Analysis has found application across all fields (Hair et al., 2014). This technique is widely used in the social sciences and also in the field of higher education (Williams et al., 2010). For this purpose, EFA was used in this study with the aim of reducing the amount of data. Through factor analysis, researchers attempt to identify a smaller set of factors within the correlations between variables (Williams et al., 2010). EFA requires a large dataset, and it is recommended that the sample size be greater than 100 (Hair et al., 1995). To analyse internal consistency in this study, Cronbach's Alpha coefficient was used. It is recommended that the value of Cronbach's Alpha be above 0.5 (Cronbach, 1951). Values above 0.7 suggest that the data are satisfactory, while values of 0.8 or higher indicate that all items are internally consistent (Ho, 2006). In this study, the value of Cronbach's Alpha coefficient was 0.965, indicating

satisfactory data reliability. Table 1 presents the variables related to the Analysis and Evaluation of Organisational Performance along with Cronbach's Alpha coefficient, the Spearman-Brown test, and the Omega test. In addition to the analysis of Cronbach's Alpha coefficient, the Spearman-Brown test can also be conducted, which indicates the suitability of the data. The recommended values for these indicators should be above 0.7 (Eisinga et al., 2013). The Omega test is also used to assess reliability (Flora, 2020; Green et al., 2016). The obtained value of 0.965 exceeds the recommended threshold of 0.7. Table 1 shows internal consistency.

Table 1. Measurement of internal consistency

Variables	Cronbach's alfa	Spearman-Brown	Ω
Performance analysis and evaluation (AEP-1)	0,965	0,923	0,965
Performance indicators applied (AEP-2)			
Performance analysed (AEP-3)			
Performance evaluated (AEP-4)			
Internal audits (AEP-5)			
Self-evaluation (AEP-6)			
Review (AEP-7)			

To assess the suitability of the data, the Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity are used (Williams et al., 2010). KMO values range from 0 to 1. The recommended threshold for the KMO test is $p < .05$ (Shrestha, 2021), while the value obtained in this study is 0.941. In addition to the KMO test, Bartlett's test of sphericity is also used to evaluate data adequacy (Ho, 2006). Table 2 presents the results of the KMO and Bartlett's tests.

Table 2. KMO i Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0,941
Bartlett's Test of Sphericity	Approx. Chi-Square	3095,983
	df	21
	Sig.	,000

Table 3 shows the indicators of the EFA analysis. All obtained values are above 0.7, confirming that the indicators show good values within the construct of Analysis and Evaluation of Organisational Performance. The obtained values range from 0.861 to 0.930.

Table 3. Factor analysis

AEP_1	,914
AEP_2	,924
AEP_3	,926
AEP_4	,930
AEP_5	,902
AEP_6	,861
AEP_7	,917

5. CONCLUSION

The use of Exploratory Factor Analysis enabled a comprehensive assessment of the reliability of data for the Analysis and Evaluation of Organisational Performance in HEIs. All obtained values from the factor analysis are above the satisfactory thresholds, confirming the exceptional reliability of the data. HEIs need to establish systematic approaches for analysing and evaluating organisational performance. The field of higher education is a specific service sector with a range of sensitive processes. In this regard, creating indicators for analysing and evaluating organisational performance is quite challenging due to the heterogeneity of HEIs (Falch et al., 2022). Given the lack of literature addressing the potential for improving organisational performance (Nandi, 2022), this research takes a step forward by identifying factors and analysing indicators that are derived and suitable for evaluating and assessing performance in higher education institutions. This research can be used by HEI management structures for potential improvements in organisational performance. Future research directions could focus on other variables that might impact organisational performance improvements. Additionally, future studies may involve other stakeholders of HEIs, such as students and employers, who, alongside employees, are among the most important stakeholders of HEIs. Further research in this direction could provide a more comprehensive analysis that can be used to improve performance as well as meet the expectations of all stakeholders in HEIs. Future research may also encompass the analysis and measurement of performance at the institutional level of HEIs.

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