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Jelena Ruso [1]
Mladen Djuric
Sara Dimitrijević
Isidora Milošević

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STUDENTS' PERCEPTION OF QUALITY MANAGEMENT LEVEL IN UNIVERSITY STUDENT ASSOCIATIONS: THE CASE OF SERBIA

Abstract: *The Total Quality Management (TQM) paradigm encompasses adapted and developed management techniques, emphasizing process management, leadership, strategic planning, customer focus, supply management, human resources management, and quality indicators. This research focuses on applying a TQM-based model to analyze relationships among TQM criteria in university student associations. Specifically, it explores students' perceptions of process approach-based thinking as a catalyst for organizational and quality indicators in these associations. The study, involving 700 respondents, utilized Structural Equation Modeling (SEM), incorporating confirmatory factor analysis and path analysis. Key findings reveal that process management positively influences all TQM elements, while only leadership and human resources management directly impact quality indicators. The study's outcomes have the potential to enhance decision-making processes in universities and student associations, thereby improving academic and future business life quality.*

Keywords: *Total quality management (TQM), Quality indicators, Process management, University student associations*

1. Introduction

Consistent and expected results are accomplished efficiently and effectively when activities are managed as interconnected processes functioning as a coherent system (ISO, 2015). This coherence can be achieved by applying one of the seven quality management (QM) principles - the process approach. Process approach-based thinking in student organisations that provide "learning by doing" through extracurricular activities enables students to superior communication, initiative-taking, decision-making, and teamwork, contributing to personal development (Hui et al., 2021). In addition, well-established and controlled processes allow student associations to result in good leadership, clearly set goals and objectives, stakeholder satisfaction, and qualified and skilled student employees, impacting quality indicators of student organisations (Eker & Eker Akdogan 2023).

Quality indicators (QIs) are "a blend of outcome- and process-based measures" (Terrell et al., 2009, p. 446), focusing on an organisational mission important for designing learning environments (Larmuseau et al., 2019).

[1] Corresponding author: Jelena Ruso
Email: jelena.ruso@fon.bg.ac.rs

In the 1980s, Japanese management techniques were developed into a Total Quality Management (TQM) paradigm, which allowed management to step up their work and gain control over the work process. The TQM includes process management, leadership, strategic planning, customer focus, supply management, human resources management, and results (Oliveira et al., 2019). Some benefits of TQM are gaining long-term competitive advantages and raising the quality of life (Leitão et al., 2018, Sofranac et al. 2023).

In this light, the paper aims to empirically analyse the influence of TQM elements on quality indicators in student organisations (Kumari 2024). More specifically, the study focuses on the process approach as an initial quality indicator enabler in university student associations. The study's findings may enhance university and student associations' decision-making, greatly enhancing academic and future professional life standards.

2. Theoretical framework and hypotheses

Non-curricular activities in higher education are investments necessary to improve the overall quality of student life and are „positively associated with well-being" (Trolian & Jach, 2022, p. 1269). Recently, they have become the subject of scientific and professional research due to the heterogeneity of the purpose of existence and different influences on the development of students, institutions, and even the policies of individual countries. The university student organisations are a forum for gathering students to accomplish a common goal (Febriansiah et al., 2019). However, achieving the goal is impossible without understanding and applying a quality management way of thinking.

The term "quality management" is occasionally used synonymously with "process management" because processes themselves are the subject of quality management (Schonreiter, 2018). Well-developed and controlled process implementation improves product/service efficiency, ensures a standardised service process, reduces process variations, and helps organisations to obtain high performance (Zhang et al., 2020). In a university context, the management of processes is a systematic tactic in which all the resources are used most efficiently and effectively to achieve the desired indicators (Kayode et al., 2016).

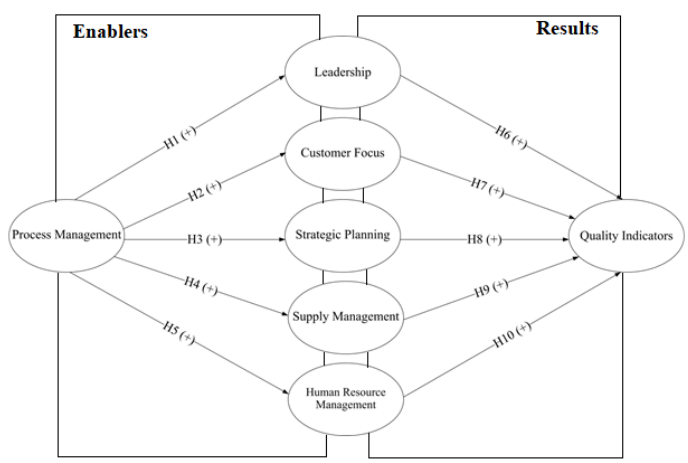

Figure 1. Conceptual model

As in any other organisation, each process in a university student organisation has its users with requirements, owners, and suppliers who provide inputs to those processes to become crucial to success. The relationship between process and customer-centeredness must also be clearly recognised. From start to finish, the success of a student organisation also depends on the strategic plan, the leadership of the management structure and the employees who raise the value of the service through a network of interconnected processes. Finally, the path from process approach to organisation quality indicators and their positive relation were researched by Zhang et al. (2020).

The conceptual model that illustrates relations among TQM elements and quality indicators, respecting enablers and results, is depicted in Figure 1.

2.1 Enablers

Enablers deal with the organisation's managerial practices such as processes, leadership, people (customers, employees, suppliers), and strategy. In addition, they indicate what organisations do and how they approach their tasks to achieve the results (Tomazevic et al., 2015). Hence, the assumption about the impact between process management and other enablers is explained in the following text.

Process Management and Leadership

In each dimension of the quality management system, it is necessary to consider the positive relationship between leadership and process management that results in increased productivity and stakeholder satisfaction (Glogovac et al., 2022). According to Rosch and Collins (2017), leaders' skills should be developed to motivate students to participate in student organisations, especially for students who feel marginalised because of belonging to a particular ethnic, gender, or religious entity. Some articles observe the relationship between process management and leadership in various organisations (Zhang et al., 2018; Oliveira et al., 2019), and in line with that, the following hypothesis is:

H1: Process Management positively impacts Leadership in university student associations

Process Management and Customer Focus

In student organisations, students are employees and end-users. Customer-oriented behaviour is how "student staff" use their knowledge to help stakeholders (student customers, partners, organisations, faculty, or suppliers) satisfy and meet their needs (Park & Tran, 2018). However, the process approach "includes establishing processes, interdependencies, constraints and shared resources "within the customer-focus approach (ISO, 2018, p. 8). The relationship between process management and customer focus is explored in the literature by Zhang et al. (2020) and Wieland et al. (2015). Inspired by them, the second hypothesis is:

H2: Process Management positively impacts Costumer Focus in university student associations

Process Management to Strategic Planning

Strategic planning is when the organisation predicts its future, develops procedures and operations to achieve it, sets goals and objectives that will provide priorities, and guides management decisions daily (da Silva et al., 2017). According to Oliveira et al. (2019), in the context of student organisations, strategic planning includes transparency in project planning, focus on quality, defined specific and measurable goals, and comparison of the results with previous results to improve the planning process. The process management task is to allow an approach regarding determining, establishing, maintaining, controlling, and improving strategic planning processes, including assigning roles and responsibilities (ISO, 2018). Some authors researched the relationship between process management and strategic planning (Esfahani et al., 2018). Hence, the third hypothesis is developed:

H3: Process Management positively impacts Strategic Planning in university student associations

Process Management to Supply Management
The process approach sees supply management as "the design, initiation, control and evaluation of strategic, tactical and operational processes within and between organisations, aimed at acquiring products and services in the most favourable conditions" (Wynstra et al., 2019, p. 1). Pradabwong et al. (2015) noticed the essential impact of process management on supply management, indicating supply management sustainability and cooperation development with customers. Moreover, process management provides the capabilities required to implement supply management (Gavronski et al., 2011). By placing this relationship in the context of student organisations, hypothesis four is set:

H4: Process Management positively impacts Supply Management in university student associations

Process Management to Human Resource Management
Management of processes focuses on managing physical and academic/human resources (Villegas-Ch et al., 2020). The quality management system should provide an environment where all individuals are qualified and capable of performing the processes entrusted to them. Lorincova et al. (2020) perceived process management as an essential strategic challenge in human resource management (HRM), while Mashhady et al. (2021) pointed out the effectiveness of processes in improving the perceived HRM service quality. Thus, the student associations should establish processes to attract and retain students, empower students to promote teamwork, seek opportunities to improve their competence and experience or make information, knowledge, and experience available to everyone in the organisation. Thus, it is necessary to ensure that the work environment motivates students and encourages teamwork, growth, learning, and knowledge transfer (ISO, 2018). Following the foregoing, hypothesis five reads:

H5: Process Management positively impacts Human Resource Management (HRM) in university student associations

2.2 Results

'Results' criteria incorporate an organisation's achievement. The quality of an entity (a person, product or organisation) cannot be controlled, improved, or assessed without the application of appropriate measurements. In simple terms, "if you cannot measure it, you cannot control it; if you cannot control it, you cannot manage it" (Wieland et al., 2015, p. 318). Indicators represent the measurement objective. Therefore, the process requires the development of relevant indicators. The measured or observed value of some quality characteristics expressed and compared is recognised as a quality indicator (QI) (Djuric et al., 2020a). According to the group of authors who quoted Italian standard UNI 11097 (Djuric et al., 2020, p. 304), QIs are defined as "qualitative and/or quantitative information about an examined phenomenon, which makes it possible to analyse its evolution and to check whether quality targets are met". Therefore, they are critical success factors for transferring organisational mission into reality (Djuric et al., 2020a). Hence, QIs perform in terms of human resources, customer satisfaction, supplier, finances and stakeholder indicators, and how the organisation compares to its competitors.

Therefore, the following text will describe the assumption about the impact between enablers' results and QIs as outcomes.

Leadership and Quality Indicators
Student organisations are a suitable polygon for developing leadership and social skills. Leadership skills enable students to make social and business changes for the common

good (Lin & Shek, 2019). On the other hand, irresponsible behaviour of student organisation leaders, such as absence from meetings, weak communication, not completing tasks, and neglect of obligations, can significantly impact the organisation's performance. Therefore, the relationship between leadership and quality indicators is observed in various research. For example, Santos-Díaz and Towns (2021) concluded that leadership significantly positively affects quality work indicators. Recently, Kafetzopoulos et al. (2022) found that talent management is a good mediator for the relationship between leadership and business quality indicators. Therefore, we determined the following hypothesis for student associations:

H6: Leadership positively impacts Quality Indicators of a university student associations

Customer Focus and Quality Indicators

Focus on the customer approach enables organisations to understand present and future customer needs and to overcome customer expectations (ISO, 2015). It is crucial for each organisation because customer satisfaction is vital to defining quality performance (Otto et al., 2020) and helps to modify organisational activities (Kalogiannidis, 2021). The relationship between the customer-oriented principle and quality indicators was the subject of several studies in various industries (Eklof et al., 2020; Kiessling et al., 2016). According to the previous, the following hypothesis is developed:

H7: Customer focus positively impacts Quality Indicators of a university student associations

Planning and Quality Indicators

Following the organisation's strategy, processes should be planned and controlled (ISO, 2018). However, Ozaki and Johnston (2008) think there is a lack of precise strategic planning during the initial creation of the student organisation, including establishing a vision and goals. Even though conclusions about strategy planning and indicators are divided regarding sector (Ali, 2018), some of the authors are pretty convinced of the positive impact of strategic planning on quality indicators (performances) (Vandersmissen et al., 2020; George et al., 2019). Following the former, hypothesis eight is:

H8: Strategic Planning positively impacts Quality Indicators of university student associations

Supply Management and Quality Indicators

"An organisation and its suppliers are interdependent, and a mutually beneficial relationship enhances the ability of both to create value" (ISO, 2007, p. 7). How supply management affects quality performance in an organisation is not an unknown topic in the literature (see Zimmermann et al., 2020). For instance, Munir et al. (2020) explored the association between supply chain risk management and operational quality indicators, while Cousins et al. (2019) researched a similar relationship between environmental and operating cost quality performances. However, though many studies considered the relationship between these two elements, it has not often been analysed in non-profit and educational organisations. Therefore, hypothesis nine is:

H9: Supply Management positively impacts Quality Indicators of university student associations

Human Resource Management and Quality Indicators

According to ISO (2018), leaders and coordinators in student associations should encourage student employees to enhance quality indicators by supplying them with the necessary information and giving them authority and freedom to make decisions. The linkage between human resources and quality indicators is obvious. For example, Nguyen (2016) stated that human resources are vital in enhancing quality performances. Similar findings were found in studies by

Gile et al. (2018) and Lu et al. (2015), who confirmed HRM's impact on quality indicators in the service industry. Consequently, the following hypothesis is set:

H10: Human Resource Management positively impacts Quality Indicators of university student associations

3. Methodology

3.1 Survey Design

The survey was conducted by the online questionnaire distributed over e-mail to members of the university student associations to research factors influencing the organisation's quality indicators based on the Malcolm Baldrige excellence model. The online questionnaire was measured in two groups of questions; the first group consisted of demographic questions, and the second group of questions consisted of seven constructs. In addition, student association members responded to questions about leadership, customer focus, strategic planning, supply management, process management, human resources, and quality indicators. For answer measures, a five-point Likert scale was utilised (1 strongly disagree; 5 strongly agree). A total of 700 respondents filled out the questionnaire correctly (92.7% response rate). The database with the obtained data was deciphered upon completion of the questionnaire and sent further for analysis. The SPSS and AMOS v.20.0 software packages were used to analyse the data.

Structural Equation Modeling (SEM) was employed in this study to examine the proposed hypotheses. SEM combines two statistical methods, confirmatory factor analysis (CFA) and path analysis, based on assessing the measurement model and structural models. The measurement model is regarded for analysing the reliability and validity of the research question. The structural model is utilised to assess path models and test hypotheses.

4. Analysis and Results

4.1 Measurement model

The suitability of the measurement model was tested through internal consistency, convergent validity, and discriminant validity (Tables 2 and 3). The internal consistency was established by testing Cronbach's alpha coefficients and composite reliability (CR). Cronbach's alpha and composite reliability are utilised to measure construct reliability throughout the consistency of the interitem. All values for Cronbach's alpha and composite reliability are above 0.7, as recommended by Fornell and Larcker (1981), which can be seen in Table 2. According to Fornell and Larcker (1981), the Average Variance Extracted (AVE) should be greater than 0.5. However, values higher than 0.4 can be accepted if the Composite Reliability exceeds 0.6. In Table 1, Composite Reliability values greater than 0.6 can be observed, indicating convergent validity.

Table 1. Factor loadings, reliability, and convergent validity of reflective constructs

Construct	Items	Standardised Item loading	t-value	Composite reliability (CR)	Average Variance Extracted AVE ≥0.50	Cronbach Alpha α≥0.70
Process Management (PM)	PM1	0.681		**0.816**	**0.526**	**0.807**
	PM2	0.747	17.860			
	PM3	0.763	18.218			
	PM4	0.709	17.053			
Leadership (LD)	LD1	0.742		**0.798**	**0.497**	**0.791**
	LD2	0.746	19.173			
	LD3	0.701	17.976			
	LD4	0.627	15.970			

Customer Focus (CF)	CF1 CF2 CF3	0.649 0.697 0.719	 16.231 16.662	**0.730**	**0.475**	**0.778**
Strategic Planning (SP)	SP1 SP2 SP3 SP4	0.649 0.679 0.711 0.737	 15.695 16.308 16.799	**0.788**	**0.483**	**0.774**
Supply Management (SM)	SM1 SM2 SM3 SM4	0.662 0.702 0.618 0.723	 15.436 13.941 14.375	**0.772**	**0.459**	**0.751**
Human Resource Management (HRM)	HRM1 HRM2 HRM3 HRM4	0.723 0.593 0.701 0.672	 14.824 17.512 16.782	**0.768**	**0.453**	**0.760**
Quality Indicators (QI)	QI1 QI2 QI3 QI4 QI5 QI6 QI7 QI8	0.715 0.833 0.756 0.790 0.778 0.833 0.748 0.815	 21.292 19.358 20.264 19.884 21.255 19.078 20.717	**0.927**	**0.615**	**0.925**

Table 2. Descriptive statistics, Correlation matrix and Discriminant validity

	Mean	**SD.**	**PM**	**LD**	**CF**	**SP**	**SM**	**HRM**	**QI**
Process Management (PM)	4.2	0.81	**0.725**						
Leadership (LD)	4.3	0.72	0.558	**0.704**					
Customer Focus (CF)	4.1	0.72	0.597	0.600	**0.689**				
Strategic Planning (SP)	3.9	0.63	0.612	0.585	0.600	**0.694**			
Supply Management (SM)	4.1	0.70	0.552	0.527	0.480	0.551	**0.677**		
Human Resource Management (HRM)	4.1	0.78	0.565	0.544	0.572	0.527	0.481	**0.673**	
Quality Indicators (QI)	3.9	0.71	0.335	0.376	0.396	0.335	0.299	0.440	**0.784**

Goodness-of-fit indices	**□² / df**	**RMSEA**	**CFI**	**NFI**	**RFI**	**IFI**	**TLI**
Sample values	2.293	0.043	0.957	0.926	0.914	0.957	0.950
Recommended value	≤3.00	≤0.05	≥0.90	≥0.90	≥0.90	≥0.90	≥0.95

Note: The square root of average variance extracted (AVE) is shown on the diagonal in bold font for multi-item constructs. All items are $p < 0.01$.

Table 3. Results of path analysis and hypothesis testing *$p < 0.01$

Hypothesis	**Path**	**β coefficients**	**t - value**	**Support**
H1	PM → LD	0.909	16.782	Accepted
H2	PM → CF	0.894	14.252	Accepted
H3	PM → SP	0.963	14.471	Accepted
H4	PM → SM	0.900	13.923	Accepted
H5	PM → HRM	0.913	16.133	Accepted
H6	LD → QI	0.228	1.965	Accepted
H7	CF → QI	-0.045	-0.432	Rejected
H8	SP → QI	-0.176	-0.953	Rejected
H9	SM → QI	-0.083	-0.707	Rejected
H10	HRM→ QI	0.685	4.731	Accepted

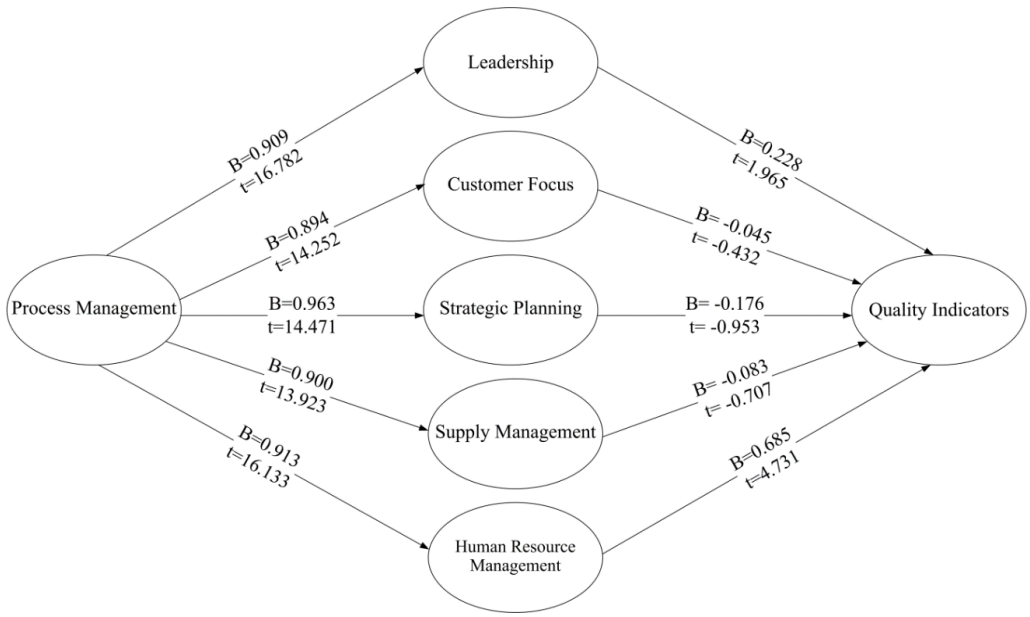

Figure 2. Structural model

Table 4. Path coefficients and t-values between observed and latent variables

Construct	n	Standardised factor loading	Critical ratio or (t-value)	R^2
Process Management (PM)	4	0.675-0.743	16.881-17.942	/
Leadership (LD)	4	0.599-0.759	15.302-19.592	0.826
Customer Focus (CF)	3	0.627-0.809	16.437-16.763	0.800
Strategic Planning (SP)	4	0.641-0.741	15.416-16.553	0.927
Supply Management (SM)	4	0.612-0.711	13.219-14.730	0.811
Human Resource Management (HRM)	4	0.587-0.705	14.509-17.335	0.833
Quality Indicators (QI)	8	0.693-0.847	19.153-20.780	0.392

4.2 Structural model

The next step is developing the structural model to verify the proposed hypotheses and establish the causal relationship among constructs. The structural model contains one exogenous variable and six endogenous variables. The structural model has a good fit to the data ($\chi 2/df$)=2.519. RMSEA=0.047. CFI=0.947. NFI=0.916. RFI=0.906. IFI=0.947 and TLI=0.941. The results of hypothesis testing are shown in Table 3 and Figure 2.

Figure 2 and Table 3 show the structural model results depicting the degree of direct relationships between the constructs. By testing the hypotheses, it was found that Process Management has very expressive relationships with constructs such as Leadership (β=0.909; t=16.782), Customer Focus (β=0.894; t=14.252), Strategic Planning (β=0.963; t=14.471), Supply Management (β=0.900; t=13.923), and Human Resource Management (β=0.913; t=16.133) with a very high degree of statistical significance, thus confirming that H1, H2, H3, H4, H5 are accepted.

Considering Quality Indicators as output variables and their relationship with other variables, it is found that the Customer Focus (β=-0.045; t=-0.432), Strategic Planning (β=-0.176; t=-0.953), and Supply Management (β=-0.083; t=-0.707) have a negative direction according to Quality Indicators without statistical significance, suggesting that H7, H8, H9 are not supported. However, it was determined that Leadership (β=0.228; t=1.965) and Human Resource Management (β=0.685; t=4.731) are significant determinants of the Quality Indicators, which indicates that hypotheses H6 and H10 are supported.

The means, standard deviations, correlations, and discriminant reliabilities for seven constructs are depicted in Table 2. The discriminant validity is displayed on the diagonal with bold font. In addition, the square root of average variance extracted.

Table 4 provides information on the standardised factors, t-values and coefficient of determination (R2) between observed and latent variables. With the validation of tested hypotheses, the six constructs elucidated 39.2% of the variance in Quality Indicators. The structural model has a predictive ability because all values of the determination coefficient are greater than 0.8 for all observed constructs.

5. Discussion of the Results

Leaders are expected to improve organisational culture by giving direction, clear communication, and disenabling misunderstanding in interpreting the message to the organiser (Ewell, 2018). Considering obtained results, H1 confirms that process management helps leaders (management board and coordinators) in student associations to organise their processes to define the organisation's goals clearly, exploit resources for quality enhancement, consider quality as a precedence, and encourage, support and participate in the continuous improvement of the organisation's work. A similar conclusion about the relationship is supported by authors such as Zhang et al. (2018) and Oliveira et al. (2019), which show that this claim found a stronghold in the scientific literature.

Process-oriented organisations enable a customer-oriented approach to satisfy customers. As standard ISO 9000 highlights, customers can be "consumers, clients, retailers, receivers of products or services from an internal process, beneficiaries or purchasers" (ISO, 2015). Customer satisfaction is related to compliance with agreements, cooperation opportunities, quality of service, delivery on time, networking, practical experience and knowledge gaining, etc. The process approach helps student associations to define all activities clearly and delegate persons responsible and accountable for detecting student requirements, evaluating their satisfaction, and collecting complaints. Hence, process management benefits by aligning everybody with a customer-oriented goal – satisfaction, that H2 supports. The exact relationship is considered by Wieland et al. (2015) and Zhang et al. (2020).

The results showed one more positive impact of process management on strategic planning. Esfahani et al. (2018) confirmed that process management development is one of the most significant effects on strategic planning success. Hence, it can be noticed that our findings pretty much fit previous studies but in different fields and industries. These conclusions are confirmed by hypothesis H3.

Further, results show that hypothesis H4, which claims that process management impacts supply management, is proved. In student associations, suppliers are partners, lecturers, faculty, and other interested parties which deliver products or services to project realisation. By developing a quality management system, student organisations master their processes, documenting suppliers' requirements. There must be those

among the existing processes to review and evaluate the suppliers' ability to meet those requirements and assess the alignment of the organisation's goals and suppliers. Similarly, in their research, Pradabwong et al. (2015) and Gavronski et al. (2011) remarked on the high impact of process management on supply management.

In the first part of the conceptual model, the last hypothesis, H5, which shows the influence of the management process on the management of human resources, is also confirmed. Therefore, positions in student associations can be composed of process roles identified within the process mapping and assigned to student employees according to their competencies (Hrabal et al., 2020). Student associations should determine and plan their processes and define the necessary functions for providing resources, including measuring the satisfaction of students and other stakeholders and improving, evaluating and rewarding their members continuously. The same relationships are also considered and proved by Lorincova et al. (2020) and Mashhady et al. (2021).

The following assumption of the paper's authors was that all previously mentioned dependent variables (LD, CF, SP, SM, and HRM) directly impact the output dependent variable QI. The first relationship showed that the leadership behaviour of activist students who occupy positions as committee members influenced quality indicators in student associations. These quality indicators can be reflected through sources of financing, achieving the planned results, meeting the needs of the students, the public image, quality of projects, number of projects, improvements, and introducing behavioural, social, or environmental changes. All these quality characteristics cannot be achieved without good leadership. For instance, Tan et al. (2020) and Wu and Shen (2021) sought and found a positive relationship between leadership style and quality indicators in higher education. This conclusion is also grounded in Santos-Díaz and Towns (2021) and Kafetzopoulos et al. (2022) research.

Contrary to the findings of authors such as Eklof et al. (2020), Vandersmissen et al. (2020), George et al. (2019), Zimmermann et al. (2020), and Munir et al. (2020), the results did not confirm the influence of three dependent variables (CF, SP, SM) on quality indicators. Although process management directly affects them, they do not affect the output variable as mediators. Firstly, it indicates that student organisations did not establish strong customer relationships and measure student needs and expectations as a foundation for customer satisfaction and quality improvement. The relationship between strategic planning and quality indicators was not confirmed. The explanation can be found in Mirica & Abdulamit's (2014) conclusion, which stated that most student associations usually are not consulted considering the university's strategic plan. Hence, student associations require flexibility, agility and fast responsiveness to suit a current environment and influence QI (Zimmermann et al., 2020). Finally, the last positive influence is confirmed between HRM and QI. The implications for results and indicators can be very significant depending on how HRM processes are arranged, from recruitment to student training leading to qualified student employees, thus to well-established QIs. Gile et al. (2018) and Lu et al. (2015) prove this relationship of variables.

6. Conclusion

University student associations exhibit different quality management approaches and mechanisms for their operations to be run successfully. Therefore, the paper analyses the influence of TQM practices on quality indicators, focusing on the process approach as an initial quality indicator driver in university student associations. The survey was conducted among members of the university student associations. The results show the positive impact between

enablers, specifically process management and other constructs (LD, CF, SP, SM, HRM). Namely, process management positively impacts all TQM criteria, but only two of them directly impact quality indicators. Additionally, the quality indicators in student associations are influenced by process management through leadership and human resource management dependent variables. Furthermore, customer focus, strategic planning, and supply management are not influential, considering quality performances/indicators.

The contribution is reflected in the fact that the relationship among these constructs has not been examined in higher education in a university student association, which is considered a literature gap, and this paper covers that deficiency. Furthermore, the research results can have practical implications for improving decision-making at universities and student associations, which can positively affect the outcome, improving the quality of the work of organisations and their performance.

Although the sample of 700 respondents who are members of student organisations is sufficient for making relevant conclusions, the limitation still exists in the form of a homogeneous sample. Therefore, future studies could apply this model to a larger sample, including other universities in the country and region. A construct that considers the student organisation member perception of more assertive communication with the university and its regulations should be recommended for future research direction. Furthermore, the artificial neural network will be a helpful method for predicting QI in university student associations based on TQM principles in the future.

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Jelena Ruso
University of Belgrade, Faculty of Organizational Sciences,
Belgrade,
Serbia
jelena.ruso@fon.bg.ac.rs
ORCID 0000-0003-4120-8759

Mladen Djuric
University of Belgrade, Faculty of Organizational Sciences,
Belgrade,
Serbia
mladen.djuric@fon.bg.ac.rs
ORCID 0000-0002-8219-2899

Sara Dimitrijević
University of Belgrade, Faculty of Organizational Sciences,
Belgrade,
Serbia
sara.dimitrijevic@fon.bg.ac.rs
ORCID 0009-0000-2278-9952

Isidora Milošević
University of Belgrade,
Technical Faculty in Bor
Bor,
Serbia
imilosevic@tfbor.bg.ac.rs
ORCID 0000-0001-5539-8253