



# ESG 2015 Framework for Sustainable Workplaces: A Tool to Improve the Performance of the Higher Education Institution

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**Abstract:** The stakeholder commitments of higher education institutions (HEIs) continuously strengthen sustainable practices and ethical governance. In addition, stakeholders' internal decision-making activities must seek operational excellence at all workplaces. Participants in the HEI should promote scientific development and improve the results of students. Implementation of the ESG 2015 Framework in the HEI workplace may bring social responsibility and student attraction. Interest groups (teachers and administrators) are willing to improve organizational efficiency and effectiveness in order to achieve better results. Therefore, operational excellence (efficiency and effectiveness) must be recorded. The researchers, teachers and administrative staff should continuously be recognized by HEI management. Work commitment refers to a continuous analysis of your own working style. If internal stakeholders accept process maps as optional tools for the institution, they can significantly improve the working culture and working habits of participants. Responsibility in the working environment must focus on achieving HEI strategy objectives. The role of understood internal stakeholders and their inter-departmental initiatives is defined by the RACI matrix tool. A clearly defined indicator shows the key elements of the organization's successful operational excellence initiative.

**Keywords:** ESG 2015 framework; indicators; operational excellence; RACI matrix tool.

## 1. Introduction

From 2015, ESG (environmental, social and governance) framework [1] has been gaining importance in HEIs. Many universities and colleges were starting to incorporate ESG factors into their operations and decision-making processes, recognizing the importance of sustainability and responsible business practices in the education sector. The main ESG factors imply sustainable initiatives (eco-efficiency), the curriculum development (study programs focused on sustainable and environmental science, responsible business, and social practices) and community engagement (initiatives, services and partnerships with local businesses and communities to promote sustainability and social responsibility).

Internal quality assurance in HEIs refer to the activities (processes and procedures) that are put in place to ensure the education quality and services according to ESG 2015

framework. These standardized activities are designed to help HEIs to continuously improve the study programs, partnerships, and services quality. The key components of internal quality assurance in HEIs are management system quality (identified key performance indicators-KPIs), designed and delivered curriculum (goals and objectives reviewed and updated with the needs of the students and the industries), assessment and evaluation (measuring student learning outcomes and study programs effectiveness), HEI's staff development (advanced knowledge and skills implemented in activities), human resource activities (efficient using of infrastructure and technologies). Overall, HEIs is essential for ensuring that students receive high-quality education and services. HEI must continuously improve their decision-making processes, as the role models must remain confident in their abilities (effective work environment). Moreover, the leaders (dean,

vice-deans, and committee presidents) must be able to inspire co-workers to do same by making their teams aware of their mistakes and how they plan to correct them [2,3].

The main goal of leaders at HEIs is to show team members how planning, organizing, monitoring, and controlling resources to achieve strategic goals within a defined timeline of the action plan processes. They need to have knowledge and skills to identify scope of

processes and procedures within schedules. Moreover, leaders need to define roles and responsibilities between team members and establish communication protocols as well. All the time, they must be able to address the occurred issues during tracking progress. So, taking corrective action by leaders is essential for completing activities within a defined timeline and schedules.



**Figure 1.** Principles of effective participant engagement towards goal realizations, Source: The Right Group [4].

From previous mentioned, the leaders should focus on improving the efficiency and effectiveness of member activities to achieve superior results within a defined timeline. Streamlining process must be focused on continuous productivity improvement at co-work environment. The key component of operational excellence is to use a process mapping tool which builds structure inside work environment [2]. Their engagement becomes more effective and competitive. Moreover, the ongoing processes

continuously improve and a willingness to adapt advanced work conditions rise. Efficiency and effectiveness are conducted through process analysis, trends identifying and decision-making improvements (curriculum, research, facilities/infrastructure operations, community engagement, governance/leadership). Established culture of continuous improvements, where internal stakeholders (leaders, teachers, students, staff) implement changes after training is an indicator of

progress, the better serves the needs of students and community (Figure 1).

By process mapping technique, it is very easy visually represent the step numbers and activities which involve in a particular process. The created diagram shows the activities flow and information steps, from the first to the final step. This tool provides an understandable process overview and gives possibilities to identify areas for improvement. Therefore, HEI leaders must identify the processes and mapped them first (Figure 2). After that, they should be able to identify the scope (the start and finish process points). The next step is gathering process information (involved steps, member teams/departments, inputs/outputs). The final step is creating map (activities flow and process information) on the swim lane/flowchart diagrams. Diagram analyses identify areas “work steps” where improvements can be

made or redesigned (eliminate unnecessary steps, reorganizing the process). Adapted mapping processes improve their operational excellence to serve students and community. Moreover, leaders can easily involve changes to improve policies, procedures/systems, as well as training or retraining members (teachers, staff, students). The management (leaders) can easily monitor and evaluate the effectiveness of the changes over time. Overall, institution is essential for the development and society progress. HEI must provide individuals with the knowledge, skills, and values needed to succeed to succeed in the workplace, contribute to the economy, and participate to the common good. Generally, it is significant important that HEIs help to develop critical thinking and communication skills that are essential for effective citizenship.

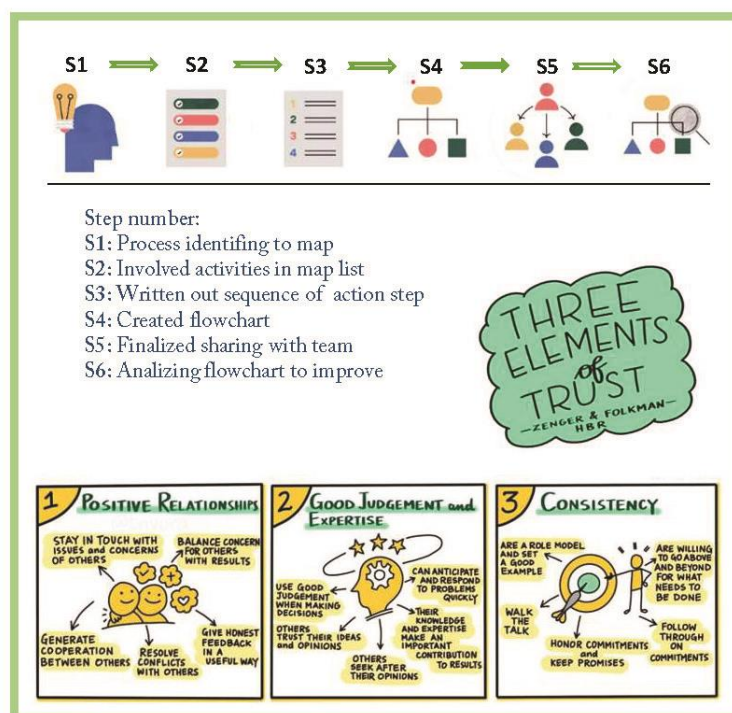


Figure 2. Mapping process work structure, Source: modified from Vora [5].

## 2. Rule of Quality Assurance in Academic Work Environment

Quality assurance is essential in higher education to ensure that institutions are providing students with high-quality educational experiences that meet the standards set by accrediting bodies and other stakeholders. This process helps HEIs to identify areas for improvement

and to make changes that improve the quality of student learning outcomes. Therefore, collecting, and analysing data (learning outcomes, faculty performance, study programs effectiveness) make changes that improve the quality of educational programs throughout the high-quality experiences that meet the needs of students and stakeholders (community and industry).

## 2.1. Bureaucratic Vs Entrepreneurial Culture Style in the Work Environment

Bureaucratic culture and entrepreneurial culture are two distinct styles of organizational culture that can have a significant impact on leadership success. Bureaucratic culture is characterized by a high degree of structure, rules, and regulations, and a focus on hierarchy and control. In a bureaucratic culture, decision-making is often centralized and based on established policies and procedures. Communication tends to be formal and hierarchical, with little room for creativity or innovation. On the other hand, entrepreneurial culture is characterized by a focus on innovation, creativity, and risk-

taking. In an entrepreneurial culture, there is often a high degree of flexibility and adaptability. Decision-making is more decentralized and based on individual initiative. Communication tends to be informal and collaborative, with a high degree of interaction between different levels inside organisation. While both cultures have their strengths and weaknesses, an entrepreneurial culture may be better suited for HEIs because they continuously develop critical thinking and communication between stakeholders and tend to train and retrain their members (teachers, staff, students). Moreover, the HEI must achieve strategic goals in competitive environment which is constantly change.



**Figure 3.** Leadership habits and styles (Constructive effect Vs destructive effect),  
Source: modified from Project Management [12].

## 2.2. Positive Attitudes of Entrepreneurial Management Culture at HEI

Entrepreneurship can play an important role by encouraging innovation, creativity, and collaboration among students, teachers, and staff. Establish entrepreneurship culture at HEI provides students with the skills and resources needed to start and run their own businesses. They easily collaborate, and access resources

and advice. Moreover, HEI makes and easily develops partnerships with industry and civil communities. These approaches provide opportunities for students to work on real-world projects and gain experience. Overall, HEI encourages innovation, creativity, and collaboration among students, teachers, and staff. This can involve creating spaces for collaboration, providing opportunities for networking, and



recognizing and rewarding entrepreneurial efforts [7]. HEI helps students develop skills and mindset need to succeed in a rapidly changing and increasingly competitive global economy and economic growth in surrounding community. Creating an entrepreneurial culture among internal stakeholders can lead to greater creativity, and collaboration, ultimately benefiting students and the institution as well.

### 2.3. Negative Viewpoint of Bureaucratic Management Culture at HEI

One key feature of bureaucratic culture is a focus on rules and strict procedures which comes from authority, where the collaboration is avoided (Figure 3). There are clear rules and procedure in place how things are done without established culture of continuous improvements among team members. It is important to mention that strict leading guidelines isn't appropriate in academic community. Moreover, this hierarchical structure gives the leaders right in creating and implementing wrong decisions/policies/rules because of their ignorance the management business administration competences (MBA Academia) [6]. Therefore, there is a clear divide between teachers and staff. The teachers' higher professional status give them the right in managing others with significant lower efficiency, operational excellence unfortunately doesn't exist at HEIs! From previous mention, the bureaucratic culture is inflexible, and it has been criticized by everyone (students, staff, industry, community) for decades [8-11].

### 3. Balance-Defined Key Performance Indicators at HEIS

The key performance indicators (KPIs) lead to organisation's progress and success only if they are focused on the most valuable asset – people who works at HEI. Designed KPIs introduce four main features: (1) keep people informed, (2) keep people involved, (3) keep people interested, (4) keep people inspired. Moreover, in designed work environment, the HEI team members must be well-informed about strategic goals and progress as well. This people empowering contribute to make better decisions and overall success. Transparent communication boosts a sense of belonging and builds trust as well. Overall, employees become

more engaged and committed workforce. When employees, in work environment, feel that their opinions and ideas are valued, team members become more engaged and invested in their work. In that circumstances all organisation levels can lead to innovative solutions and better problem-solving. Involvement of each member in work environment boosts his/her morale and enhances creativity and productivity as well. The motivated members provide opportunities for growth, skill development and changes. Overall, this approach to managing keeps stakeholders (students, teachers, staff, community) interested and excited about their roles. This sense of continuous learning and personal development drives operational excellence and leads to a positive impact on the organization's overall performance. Inspiration lies in recognizing and celebrating achievements when the individuals are inspired to reach for greater heights. Overall, the support team members' aspiration boost loyalty and a shared commitment to success. "KPIs for people" is powerful managing tool which drives to superior results only if the management (HEI's leaders) have 11 (eleven) specific managing skills (communication, versatility, flexibility, strategic thinking, digital savviness, entrepreneurial spirit, leadership, resilience, problem-solving, decision-making, interpersonally, networking) [13].



**Figure 4.** Performance Measurement with KPIs for People, Source: modified from Robertson [13].

From previous mention, the teachers with higher professional status (associate/full professor, PhD) could make efforts to educate themselves, the leaders must strive to boost their business knowledge and to reach eleven specific managing skills (Figure 4).

#### 4. Enhancing Operational Excellence in Teamwork Environment

Teamwork effectiveness requires six key qualities: (1) motivating atmosphere in work environment, (2) good communication skills team members inside of work environment where everyone understands their rules, responsibilities and terms' overall goals, (3) inclusive supportive work environment for each team's member, (4) striving to higher quality work and sharing accomplishment sense, (5) willingness to help others member inside team/departments in promoting collective strengthens and success, (6) teams strive to efficiency and creative changes, challenges for

continuing progress and development (Figure 5) [14].

The composed teams in work environment [15], where each member depend on each other, work towards interchangeable achievements and to share common attainments. Trust means that members rely on someone else to do the right thing in work environment and community as well. Stakeholders believe in person integrity and strength which provide a sense of safety. Trusts one another lead to better collaboration as well as mutual respect. Finally, the voice member opinions, without fear of criticism or judgment, are valued and respected [16].



Figure 5. Teamwork effectiveness features, Source: modified from agrassoblog.org [14]

##### 4.1. Implementing RACI Matrix to Align Employee Roles on HEIs

Balanced-organized work environment should strive to organise responsibilities in the team or delegate tasks among employees and stakeholders as well. This approach encourage employee to acknowledge what they are doing it the team and complete their tasks according to defined process mappings and schedules. Moreover, the involved members precisely learn about their duties and final work, they

read action step sequences of different mapped processes. Overall, team members are more efficient, they improve communication, constantly communicate their concerns/progress regarding the delegated tasks to boost the detailed activities from process maps. In the moment when employees and stakeholders understand their roles and responsibilities starting the logistical framework implementation. It is the effective communication protocols in which employees actively participate.

**Table 1.** Defined employee roles in the RACI Matrix.

No.	The key performance indicators (KPIs)	Management	QA Committee	Committee 1	Committee 2	Committee 3	Committee 4	Committee 5	Committee 6	Committee 7	Committee 8	Administrative staff
ESG 2015_1.1. Standards												
1.	Indicator 1	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
2.	Indicator 2	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
3.	Indicator 3	A, R	R, C, I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
4.	Indicator 4	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
5.	Indicator 5	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
6.	Indicator 6	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
ESG 2015_1.2. Standards												
7.	Indicator 1	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
8.	Indicator 2	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
9.	Indicator 3	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
10.	Indicator 4	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
11.	Indicator 5	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
12.	Indicator 6	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
13.	Indicator 7	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
14.	Indicator 8	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
ESG 2015_1.3. Standards												
15.	Indicator 1	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
16.	Indicator 2	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
17.	Indicator 3	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
18.	Indicator 4	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
19.	Indicator 5	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
20.	Indicator 6	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
21.	Indicator 7	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
ESG 2015_1.4. Standards												
22.	Indicator 1	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
23.	Indicator 2	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
24.	Indicator 3	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
25.	Indicator 4	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
26.	Indicator 5	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
27.	Indicator 6	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
ESG 2015_1.5. Standards												
28.	Indicator 1	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
29.	Indicator 2	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
30.	Indicator 3	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
31.	Indicator 4	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
32.	Indicator 5	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
ESG 2015_1.6. Standards												
33.	Indicator 1	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
34.	Indicator 2	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
35.	Indicator 3	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
36.	Indicator 4	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
37.	Indicator 5	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
38.	Indicator 6	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
39.	Indicator 7	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
40.	Indicator 8	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
ESG 2015_1.7. Standards												
41.	Indicator 1	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
42.	Indicator 2	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
43.	Indicator 3	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
44.	Indicator 4	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
ESG 2015_1.8. Standards												
45.	Indicator 1	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
46.	Indicator 2	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
47.	Indicator 3	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
48.	Indicator 4	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
49.	Indicator 5	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
50.	Indicator 6	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
ESG 2015_1.9. Standards												
51.	Indicator 1	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
52.	Indicator 2	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
53.	Indicator 3	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
54.	Indicator 4	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
ESG 2015_1.10. Standards												
55.	Indicator 1	A, R	R, C, I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
56.	Indicator 2	A, R	R, C, I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
57.	Indicator 3	A, R	R, C, I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
58.	Indicator 4	A, R	R, C, I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
59.	Indicator 5	A, R	R, C, I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
60.	Indicator 6	A, R	R, C, I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
ESG 2015_Standard 11												
61.	Indicator 1	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
62.	Indicator 2	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
63.	Indicator 3	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
64.	Indicator 4	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
65.	Indicator 5	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
66.	Indicator 6	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
67.	Indicator 7	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
68.	Indicator 8	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
69.	Indicator 9	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
70.	Indicator 10	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
71.	Indicator 11	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
72.	Indicator 12	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
ESG 2015_Standard 12												
73.	Indicator 1	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
74.	Indicator 2	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
75.	Indicator 3	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
76.	Indicator 4	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
77.	Indicator 5	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
78.	Indicator 6	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
79.	Indicator 7	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
ESG 2015_Standard 13												
80.	Indicator 1	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
81.	Indicator 2	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
82.	Indicator 3	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
83.	Indicator 4	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
84.	Indicator 5	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
85.	Indicator 6	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
86.	Indicator 7	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
87.	Indicator 8	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I
88.	Indicator 9	A, R	I	R, C	R, C	R, C	R, C	R, C	R, C	R, C	R, C	I

The RACI matrix is the standardized tool which helps to define the official procedure at HEI. The RACI (Responsible, Accountable, Consulted, and Informed) matrix methodology is presented through the layout of process steps, it emphasis on the balanced-defined KPIs (indicators) in which are shown roles each member inside “collaborative teamwork” environment at HEI. This powerful tool is cross-functional and cross-departmental/functions initiative process that shows default activities. There are 4 (four) significant features in this methodology: (1) role and assignment type clarification, (2) consistent approach for role assignment, (3) collaborative team environment, (4) efficiently and effective communicating role assignments. Moreover, the RACI matrix significantly develops entrepreneurial management culture values [17]. It shows the balance-defined key performance indicators (KPIs) as rows and participating parties (management, committees, staff) as columns. For each participating party in RACI matrix, members indicate whether they're responsible, accountable, consulted, or informed, which are his/her roles:

(R) Responsible role of members perform work to complete a particular task or deliverable. They are coordinate other team members who involve on the tasks. They coordinate draft reviews, meetings, and drive tasks to completion. Moreover, they are responsible for communicating and reporting on task progress and have a good fit for knowing the task scope and how it is going to get it completed.

(A) Accountable role of members performs task and considering it complete to the highest quality, needs to explain what happened in deliverable already reviewed materials. Their knowledge of the deliverable and goals scope to

know if something meets content quality expectations to the defined standards.

(C) Consulted role of members considers the subject matter expert for a particular task or knowledge area. Members are engaged by Responsible team members to provide inputs and review deliverables for accuracy. Moreover, they are included before a task be considered complete. Time estimates and schedules are very important for this role.

(I) Informed role of members is provided status updates on a particular task or deliverable. They are just a user, are informed that a decision or action has been taken. One-way communication only exists.

In Table 1 are listed the defined key performance indicators (KPIs) according to ESG 2015 standards [1]. The employee roles in advanced teamwork environment are assigned and presented in columns (management, QA Committee, committee 1 to 8, administrative staff). The employee roles/responsibilities are clearly explained for effective collaborative procedures which boost entrepreneurial management culture at HEI. Moreover, the employees are more engaged in their roles, they feel less stressed, each team member stives the right kind of training and retaining inside the specific categories. Continuous learning process gives add value to institution and decrease frustration because of the under capacitated leaders' competencies. By assigning RACI roles, member knows precisely who to speak with about a potential process change in appropriate time. Above all, the RACI model is always aligning with strategy goals, each member is focused on same direction and together contribute to institutional reputation in community [18].

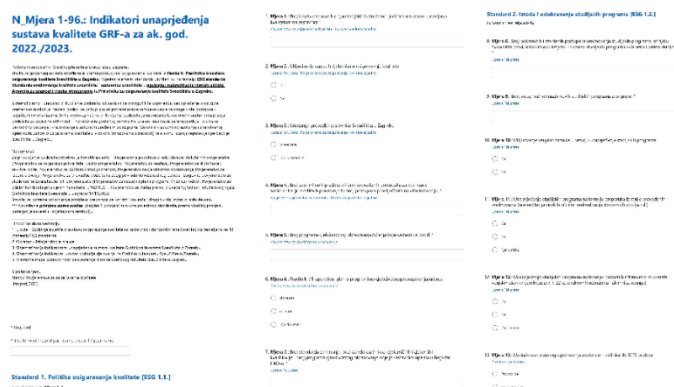


Figure 6. Unique Survey with defined key performance indicators.



## 5. Project Management Solution

After collecting quantitative and qualitative respondent surveys (Figure 6) which include defined key performance indicators of HEI organizational operating responsibility was examined.

Using the RACI matrix tool gives a systematized overview of the measured KPIs within periodic monitoring, which ensures HEI's quality process improvements (teaching, scientific/artistic, and social roles). This research method, including the RACI matrix tool, clearly defines

the responsibilities of each team. Moreover, the matrix tool tends to verify operational improvements for each stakeholder involved in institutional development. Survey members (stakeholders) come from scientific-teaching, students and general administrative affairs. In addition, in Table 2 are listed the indicator names (from the 1st to the 88th). Zagreb University Quality Management Committee has decided to use them to enhance academic competitiveness and recognition across global markets, especially the SME community [19].

**Table 2.** Listed balance-defined key performance indicators (KPIs) in the RACI Matrix.

No	Number of KPIs inside of ESG 2015 Standards	Defined name of key performance indicators (KPIs)
<b>ESG 2015 - 4.1. Standard</b>		
1. Indicator 1	1	Uspješnost organiziranja i provedbe projekata i projekata
2. Indicator 2	2	Uspješnost organiziranja i provedbe projekata i projekata
3. Indicator 3	3	Uspješnost organiziranja i provedbe projekata i projekata
4. Indicator 4	4	Uspješnost organiziranja i provedbe projekata i projekata
5. Indicator 5	5	Uspješnost organiziranja i provedbe projekata i projekata
6. Indicator 6	6	Uspješnost organiziranja i provedbe projekata i projekata
<b>ESG 2015 - 4.2. Standard</b>		
7. Indicator 1	7	Uspješnost organiziranja i provedbe projekata i projekata
8. Indicator 2	8	Uspješnost organiziranja i provedbe projekata i projekata
9. Indicator 3	9	Uspješnost organiziranja i provedbe projekata i projekata
10. Indicator 4	10	Uspješnost organiziranja i provedbe projekata i projekata
11. Indicator 5	11	Uspješnost organiziranja i provedbe projekata i projekata
12. Indicator 6	12	Uspješnost organiziranja i provedbe projekata i projekata
13. Indicator 7	13	Uspješnost organiziranja i provedbe projekata i projekata
14. Indicator 8	14	Uspješnost organiziranja i provedbe projekata i projekata
<b>ESG 2015 - 4.3. Standard</b>		
15. Indicator 1	15	Uspješnost organiziranja i provedbe projekata i projekata
16. Indicator 2	16	Uspješnost organiziranja i provedbe projekata i projekata
17. Indicator 3	17	Uspješnost organiziranja i provedbe projekata i projekata
18. Indicator 4	18	Uspješnost organiziranja i provedbe projekata i projekata
19. Indicator 5	19	Uspješnost organiziranja i provedbe projekata i projekata
20. Indicator 6	20	Uspješnost organiziranja i provedbe projekata i projekata
21. Indicator 7	21	Uspješnost organiziranja i provedbe projekata i projekata
<b>ESG 2015 - 4.4. Standard</b>		
22. Indicator 1	22	Uspješnost organiziranja i provedbe projekata i projekata
23. Indicator 2	23	Uspješnost organiziranja i provedbe projekata i projekata
24. Indicator 3	24	Uspješnost organiziranja i provedbe projekata i projekata
25. Indicator 4	25	Uspješnost organiziranja i provedbe projekata i projekata
26. Indicator 5	26	Uspješnost organiziranja i provedbe projekata i projekata
27. Indicator 6	27	Uspješnost organiziranja i provedbe projekata i projekata
<b>ESG 2015 - 4.5. Standard</b>		
28. Indicator 1	28	Uspješnost organiziranja i provedbe projekata i projekata
29. Indicator 2	29	Uspješnost organiziranja i provedbe projekata i projekata
30. Indicator 3	30	Uspješnost organiziranja i provedbe projekata i projekata
31. Indicator 4	31	Uspješnost organiziranja i provedbe projekata i projekata
32. Indicator 5	32	Uspješnost organiziranja i provedbe projekata i projekata
<b>ESG 2015 - 4.6. Standard</b>		
33. Indicator 1	33	Uspješnost organiziranja i provedbe projekata i projekata
34. Indicator 2	34	Uspješnost organiziranja i provedbe projekata i projekata
35. Indicator 3	35	Uspješnost organiziranja i provedbe projekata i projekata
36. Indicator 4	36	Uspješnost organiziranja i provedbe projekata i projekata
37. Indicator 5	37	Uspješnost organiziranja i provedbe projekata i projekata
38. Indicator 6	38	Uspješnost organiziranja i provedbe projekata i projekata
39. Indicator 7	39	Uspješnost organiziranja i provedbe projekata i projekata
40. Indicator 8	40	Uspješnost organiziranja i provedbe projekata i projekata
<b>ESG 2015 - 4.7. Standard</b>		
41. Indicator 1	41	Uspješnost organiziranja i provedbe projekata i projekata
42. Indicator 2	42	Uspješnost organiziranja i provedbe projekata i projekata
43. Indicator 3	43	Uspješnost organiziranja i provedbe projekata i projekata
44. Indicator 4	44	Uspješnost organiziranja i provedbe projekata i projekata
<b>ESG 2015 - 4.8. Standard</b>		
45. Indicator 1	45	Uspješnost organiziranja i provedbe projekata i projekata
46. Indicator 2	46	Uspješnost organiziranja i provedbe projekata i projekata
47. Indicator 3	47	Uspješnost organiziranja i provedbe projekata i projekata
48. Indicator 4	48	Uspješnost organiziranja i provedbe projekata i projekata
49. Indicator 5	49	Uspješnost organiziranja i provedbe projekata i projekata
50. Indicator 6	50	Uspješnost organiziranja i provedbe projekata i projekata
<b>ESG 2015 - 4.9. Standard</b>		
51. Indicator 1	51	Uspješnost organiziranja i provedbe projekata i projekata
52. Indicator 2	52	Uspješnost organiziranja i provedbe projekata i projekata
53. Indicator 3	53	Uspješnost organiziranja i provedbe projekata i projekata
54. Indicator 4	54	Uspješnost organiziranja i provedbe projekata i projekata
55. Indicator 5	55	Uspješnost organiziranja i provedbe projekata i projekata
56. Indicator 6	56	Uspješnost organiziranja i provedbe projekata i projekata
57. Indicator 7	57	Uspješnost organiziranja i provedbe projekata i projekata
58. Indicator 8	58	Uspješnost organiziranja i provedbe projekata i projekata
59. Indicator 9	59	Uspješnost organiziranja i provedbe projekata i projekata
60. Indicator 10	60	Uspješnost organiziranja i provedbe projekata i projekata
61. Indicator 11	61	Uspješnost organiziranja i provedbe projekata i projekata
62. Indicator 12	62	Uspješnost organiziranja i provedbe projekata i projekata
63. Indicator 13	63	Uspješnost organiziranja i provedbe projekata i projekata
64. Indicator 14	64	Uspješnost organiziranja i provedbe projekata i projekata
65. Indicator 15	65	Uspješnost organiziranja i provedbe projekata i projekata
66. Indicator 16	66	Uspješnost organiziranja i provedbe projekata i projekata
67. Indicator 17	67	Uspješnost organiziranja i provedbe projekata i projekata
68. Indicator 18	68	Uspješnost organiziranja i provedbe projekata i projekata
69. Indicator 19	69	Uspješnost organiziranja i provedbe projekata i projekata
70. Indicator 20	70	Uspješnost organiziranja i provedbe projekata i projekata
71. Indicator 21	71	Uspješnost organiziranja i provedbe projekata i projekata
72. Indicator 22	72	Uspješnost organiziranja i provedbe projekata i projekata
73. Indicator 23	73	Uspješnost organiziranja i provedbe projekata i projekata
74. Indicator 24	74	Uspješnost organiziranja i provedbe projekata i projekata
75. Indicator 25	75	Uspješnost organiziranja i provedbe projekata i projekata
76. Indicator 26	76	Uspješnost organiziranja i provedbe projekata i projekata
77. Indicator 27	77	Uspješnost organiziranja i provedbe projekata i projekata
78. Indicator 28	78	Uspješnost organiziranja i provedbe projekata i projekata
79. Indicator 29	79	Uspješnost organiziranja i provedbe projekata i projekata
80. Indicator 30	80	Uspješnost organiziranja i provedbe projekata i projekata
81. Indicator 31	81	Uspješnost organiziranja i provedbe projekata i projekata
82. Indicator 32	82	Uspješnost organiziranja i provedbe projekata i projekata
83. Indicator 33	83	Uspješnost organiziranja i provedbe projekata i projekata
84. Indicator 34	84	Uspješnost organiziranja i provedbe projekata i projekata
85. Indicator 35	85	Uspješnost organiziranja i provedbe projekata i projekata
86. Indicator 36	86	Uspješnost organiziranja i provedbe projekata i projekata
87. Indicator 37	87	Uspješnost organiziranja i provedbe projekata i projekata
88. Indicator 38	88	Uspješnost organiziranja i provedbe projekata i projekata

Sources: (1) Zagreb University - Annual report of quality assurance instructions, 2021-2022  
(2) Reports of Quality Assurance Zagreb University, 2020-2021, Quality management committee, 22 Sep 2022

## 6. Conclusions

The higher education quality is only measured by good academic performances (KPIs) which determine someone qualification beyond doubt. Moreover, the quality education is judged by the core clients who are recognized everywhere in community. Improved quality assurance (QA) practices (process mapping, RACI matrix) are effective instrument to achieve quality brand in global markets and community. Team building and changing the employees work culture to collaborative ones as well as continuous assessment QA contribute to performances and work satisfaction at HEI. Moreover, advanced QA practices should strive greater linkages with community (public and private partners) to improve greater employability of students and offer services through sharing and exchanging knowledge and experiences.

The global markets become increasingly complex and changeable. The shifts are necessary in academic community and the current status quo built on bureaucratic managing must be redesigned to more collaborative style in which the HEI leaders are going to boost their specific interpersonal skills as well as the business administrative knowledges. The importance of human-centered leadership must be accepted by leaders as soon as possible at HEIs. The new approaches internal quality assurance, by using well balanced key performance indicators (KPIs) give benefits for achieving the operational excellence in work environment which take on entrepreneurial features. It can be concluded that HEIs can achieve their strategic goals from action plan only if the leaders recognize benefits of using RACI matrix layout (Table 1). Multiple benefits are visible through (1) support to help stakeholder pursue new ideas, (2) HEIs and stakeholder together makes cross—functional teams for promoting creativity and innovation, (3) stakeholders start think outside of box and HEIs promote critical thinking, (5) HEIs provide resources for entrepreneurial ventures, (6) HEIs encourage stakeholders to learn from failures, (7) HEIs are able to create advanced environments based on entrepreneurial culture in which collaborate students and partners. Therefore, RACI matrix implementation

in collaborative work environment at HEI gives chance for producing intended results that minimizes the time, resources and effort required for task. Efficient member teams are able to optimize how they spend their time to accomplish a task in the best possible way, with least wasted resources. On the other hand, the HEI leaders strive to higher effectiveness where they are goal-oriented to improve teams work quality in the future as well as to ensure competitive HEI position on the markets.

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## References

- [1] Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG), Brussels, Belgium, (2015) [Internet], Available from: [https://enqa.eu/wp-content/uploads/2015/11/ESG\\_2015.pdf](https://enqa.eu/wp-content/uploads/2015/11/ESG_2015.pdf). Accessed 10 Jun 2023.
- [2] Pasanec Preprotić, S., Bratić, D., Stanić Loknar, N., Tijan, L. Operational excellence in the function of enhancing the quality assurance system of Higher education. In: Bolanča Mirković, I, editor, Proceedings of the 26th Conference, Zagreb: Publisher; 2022. p. 191-201.
- [3] Pasanec Preprotić, S. Unaprjeđivanje postupaka za osiguravanje kvalitete u svrhu provedbe HKO projekta UP.03.1.1.03. "Osam (8) Ključnih Kompetencija Budućnosti" – brošura (dokument je izrađen u okviru projekta „Provedba HKO-a u područjima inženjerstva, multimedije i vizualne komunikacije, šifra projekta: UP.03.1.1.03“ koji je financirala Europska unija iz Europskog socijalnog fonda) [Internet] Available from: [https://www.researchgate.net/publication/364939648\\_Unaprjeđivanje\\_postupaka\\_za\\_osiguravanje\\_kvalitete\\_u\\_svrhu\\_provedbe\\_HKO\\_projekta\\_UP031103\\_Osam\\_8\\_Ključnih\\_Kompetencija\\_Buducnosti\\_-\\_brošura](https://www.researchgate.net/publication/364939648_Unaprjeđivanje_postupaka_za_osiguravanje_kvalitete_u_svrhu_provedbe_HKO_projekta_UP031103_Osam_8_Ključnih_Kompetencija_Buducnosti_-_brošura). Accessed 15 Jun 2022.

- [4] The Right Group, Employee Engagement Surveys, [Internet]. Available from: <https://therightgroup.com.au/employee-research/employee-engagement-surveys/>. Accessed 01 Dec 2022.
- [5] Vora, T. Leadership and Trust: 3 Elements [Internet]. Available from: <https://qaspire.com/2019/02/11/leadership-and-trust-3-elements/>. Accessed 7 Dec 2022.
- [6] 11 Top MBA Skills And Why They Matter to Employers [Internet]. Available from: <https://www.businessbe-cause.com/news/mba-degree/7739/mba-skills>. Accessed 25 Jun 2023
- [7] Omazić, M.A. Projektni menadžment, Zagreb: Sinergija Nakladništvo; 2005.
- [8] Pausits, A. Pregled suvremenih europskih i nacionalnih politika upravljanja ljudskim potencijalima na visokim učilištima u Europskom prostoru visokog obrazovanja. Zagreb: AZVO; 2017.
- [9] Barnett, R. The Philosophy of Higher Education, A Critical Introduction, New York: Routledge; 2022.
- [10] Agency for science and higher education 2021 Annual report, Zagreb: AZVO; 2022.
- [11] Petrušić, I. Osuguravanje kvalitete znanstvene djelatnosti u Hrvatskoj-analiza metodologija vrednovanja, Zagreb: AZVO; 2020.
- [12] Project Management, Leaders Who Deliver vs. Leaders Who Destroy Here are some helpful guidelines for leaders to assess how their leadership habits and styles can have a constructive or destructive effect [Internet]. (2022), Available from: [https://www.linkedin.com/feed/update/urn:li:activity:7092141940233674753/?utm\\_source=share&utm\\_medium=member\\_android](https://www.linkedin.com/feed/update/urn:li:activity:7092141940233674753/?utm_source=share&utm_medium=member_android). Accessed 12 July 2023
- [13] Robertson, R.S. KPIs: A New Approach [Internet]. Available from: <https://www.kobo.com/ww/en/ebook/kpis-a-new-approach>. Accessed 17 July 2023
- [14] 6 Key Traits for working in a team [Internet]. Available from: <https://www.linkedin.com/company/agrassoblog>. Accessed 17 July 2023
- [15] What Is a Work Environment? (With Definition and Elements) [Internet]. Available from: <https://au.indeed.com/career-advice/career-development/what-is-work-environment#:~:text=A%20work%20environment%20is%20the%20setting%2C%20social%20aspects,workplace%20relationships%2C%20performance%2C%20job%20satisfaction%20and%20employee%20health>. Accessed 28 July 2023
- [16] A team is a group of people who trust each other [Internet]. Available at: [https://www.linkedin.com/feed/update/urn:li:activity:7096307014770790400/?utm\\_source=share&utm\\_medium=member\\_android](https://www.linkedin.com/feed/update/urn:li:activity:7096307014770790400/?utm_source=share&utm_medium=member_android). Accessed 12 July 2023
- [17] Baxter, R., Operational Excellence Handbook, Florida: Value generation partners; 2015.
- [18] Clear point strategy [Internet]. Available from: <https://www.clearpointstrategy.com/blog/raci-matrix>. Accessed 30 July 2023
- [19] SME (the Society of Manufacturing Engineers) [Internet]. Available from: <https://www.sme.org/engage/communities/>. Accessed 31 July 2023