

The Strategic ESG Conduct of Universities as the Collaborative Educational Model for Complexity of the ESG Education

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Abstract

The paper explores the critical role of sustainable management practices in universities for fostering the leadership necessary to address Grand Challenges, particularly in the context of ESG (Environmental, Social, and Governance) education. Universities are positioned as collaborative educational models that can navigate the complexity of ESG, preparing future leaders to tackle multifaceted global problems such as climate change, inequality, and sustainability. The research evaluates ESG performance across three levels—micro, meso, and macro—by examining seven ESG criteria in EU universities, members of the United Nations (UN) Global Compact. Using linear regression modeling, the study provides insights into how sustainable development practices in universities can be enhanced to prepare leaders capable of solving Grand Challenges. The findings not only contribute

to improving ESG education but also offer practical implications for higher education institutions to cultivate responsible leadership. This study aligns with the call for innovative management education approaches that develop complex problem-solving skills and adaptive leadership to address the United Nations Sustainable Development Goals (UN SDGs).

Keywords: ESG, higher education, EU universities, Grand Challenges

JEL: M14, I23, O15

Introduction

„Quality education an ‘essential pillar’ of a better future.“

António Guterres, UN Secretary-General

At present, this expression of António Guterres, UN Secretary-General is an intensive challenge, firstly in the area of ESG education and on the basis of integrated system of education at universities. This study sheds a light on the gap of innovative education for new experts education, requested with new demands of services, industry and

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other society branches for sustainability improvements in very short time. The paper focuses on conducting the analysis, which reveals how important it is for quality higher education in the field of ESG (Environmental

- Social - Governance) in order to manage sustainable conduct of universities as a collaborative educational model for the sake of complexity of the ESG education.

Literature Review

Sustainable development is an interdisciplinary challenge that connects business with the sciences, social sciences, and humanities. At present, the integrated education of sustainable development with bases of the ESG goes beyond traditional business school pedagogies and are explicit in supporting the holistic nature of the SDGs.

The theoretical background of business ethics comprises the education of sustainable education. Representative experts of their theoretical schools elaborated systems of principles and application to educate, to disseminate for improvements ethical management in the practice and its evaluation for a higher level of quality of ethical conduct of economic entities (Ferrell, Fraedrich, Ferrell, 2021; Treviño & Nelson, 2021; Lašáková, Remišová, Bohinská, 2020; Seknička & Putnová, 2016; and other renowned authors). In many credible journals there is a huge potential of detailed topics, ethical dilemmas, practical case studies which focus on the education and the dissemination of efficient institutionalization, incl. evaluation systems (Jaganjac, Abrahamsen, Olsen, Hunnes, 2024; Picard & Courtois 2023; Ohreen, Sundararajan, Trifts, Comber, 2021; and other renowned authors).

In response to the EU policy on CSR focused on business entities, many authors

devoted their theories and publications to very efficiently prepare experts for enterprise CSR management and CSR institutionalization, incl. CSR managerial accounting (Dathe, Dathe, Dathe, Helmond, 2023; Kacanski, Kabderian, Sund, 2023; Maheshwari, Gupta, Gaur, Tiwari, Goyal 2024). Many scholars meticulously align systematized education on corporate social responsibility (CSR) theory—with its detailed topics—with practical training tailored to contemporary economic challenges, dilemmas, and issues. At universities focused on economics and business there are more frequently courses focused on topics of the CSR than business ethics (Tormo-Carbó, Oltra, Seguí-Mas, Klimkiewicz, 2016; Arevalo, 2020; Audebrand, 2022; Dai, Guo, 2024). Our co-author team evaluates the quality system of responsible management education of CSR according to the ethics values and parallel development of creativity on the basis of a large potential of interdisciplinary integration and institutionalization engagement, very positively (Saunders, Marcolin, Cherneski, 2022; Pires Eustachio, Filho, Salvia, Lourenção, Guimarães, Trevisan, Barbir, Ferreira Caldana, 2024; Martins, Cezarino, Liboni, Hunter, Batalhao, Catussi Paschoalotto 2024).

For the practice organisational ethical behaviour in the area of ESG and the sustainability and related motivating education according to attractive forms, instruments and methods, we can recommend the adequate and first of all the most updated comprehensive literature with relevant topics of ESG and sustainability. The literature presents the content for enterprise ethical management with goals to educate and to motivate for the institutionalisation and the stabilisation of ESG and the sustainability in organisation systems (Castelli, Shmatov, 2022; Gaganis, Pasiouras,

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Tasiou, Zopounidis, 2023; Buckley, 2023; Sekol, 2024; Noeth K. 2024). Recent journals offer high-quality responses and distill the most vital information for shaping educational content on organizational sustainability practices through ESG parameters, extending beyond mere official European Commission documents. (Martiny, Tagliatalata, Testa, Iraldo, 2024; Rae, 2024; Kopnina, Zhang, Anthony, Hassan, Maroun, 2024; Handoyo S., Anas S. 2024).

The most widely adopted method for evaluating and managing sustainable practices according to the ESG framework, and its associated educational systems within responsible organizations (including universities), is the measurable and reportable system of the 17 SDGs (van der Waal, Thijssens, Maas, 2021; Khaled, Ali, Mohamed, 2021; Radu, Voicu, Ionescu-Feleagă, 2023;

Hieu, Hai, 2023; Bose, Habib, Sukanta, 2024). This system provides a comprehensive

mechanism for integrating ethics management into ESG-focused institutions.

In the context of education management, the formalization of graphical systematics has proven to be highly effective. A commonly employed and accessible approach involves the visualization of the relationships between the three ESG pillars and the individual 17 SDGs. This visualization method facilitates a clear and frequently applied understanding of how ESG principles align with the broader sustainability goals, as illustrated in the Figure 1.

Given the significance of integrating ESG ethics management within educational institutions, organizations, and universities, as well as aligning it with the learning objectives of students and participants engaged in ESG-related fields of study, this article adopts a dual-focus approach. Specifically, it was aimed to explore the parallel processes of implementing and institutionalizing ESG ethics management within organizations, while



Figure 1. Applied Visualisation of Related Relations of the 3 ESG Pillars and Individual 17 SDGs. (Khaled, Ali, Mohamed, 2021).

simultaneously fostering the development of ESG competencies among students.

To address this, we sought to identify and analyze the current status of ESG ethics management implementation and institutionalization in the most credible academic sources. The European Commission, through its collaboration with the European Financial Reporting Advisory Group (EFRAG), represents the leading authority in the successful implementation and reporting of ESG ethics management. The Commission is set to introduce and manage ESG indicators according to a structured timeline, commencing between 2024 and 2028 (Paridhi, 2023; Hasnan et al., 2023; Hummel & Jobst, 2024; Gafni et al., 2024; Wagenhofer, 2024). This initiative underscores the importance of standardizing ESG practices and reporting, thereby enhancing transparency and accountability in organizations and educational institutions alike.

The related resources from credible journals databases are a small number and topics are focused on the general principles,

standards and guidance. Minimum information was found in the area of standardisation according to the European Sustainability Reporting Standards (ESRS) for economics sector specification, too. First of all, on this fundament, the research was performed as an integrated system of ESG analyses and management of ESG education at UN Global Compact members of the EU universities, with a primary emphasis on the ethics of education, how universities (including members of the UN Global Compact in EU countries) apply various ESG/CSR/sustainability concepts, but the basic goal of their ethical management and management of ESG education is sustainability as ethics applied to all stakeholders internally and externally. These applied various ESG/CSR/sustainability concepts were frequently identified in the most credible journal databases Nafisa, Ashraful, Qian A., 2023; Cumming, Saurabh, Rani, Upadhyay 2024; Menga, Vanolo, 2024; Dahlmann, 2024; Parfitt, 2024; Ooi, See, 2024). The visualisation of ethical conduct and education of institution/university on the basis of 3 alternatives of sustainable behaviour can be seen in Figure 3.



Figure 2. Timeline of the EU's Corporate Sustainability Reporting Regulations (<https://www.unpri.org/pri-blog/csrd-and-esrs-how-eu-corporate-sustainability-reporting-is-evolving/10539.article>, 27-09-2024)

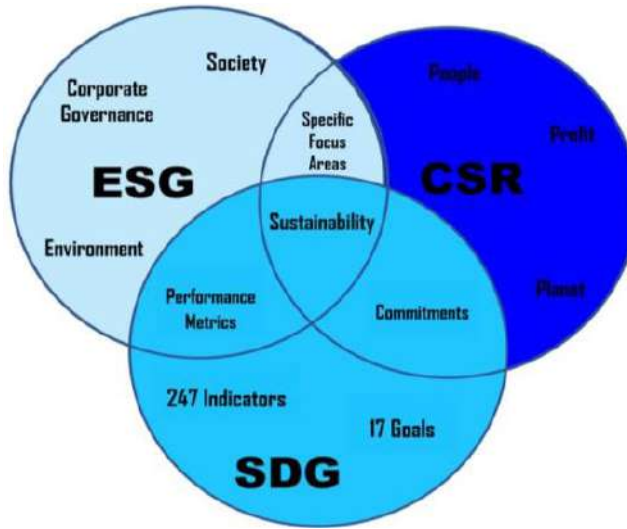


Figure 3. Alternatives of Ethical Conduct and Education of Institution/ University in Sustainability Form (<https://p2zero.com/blog/f/esg-vs-csr-vs-sdg>, 27-09-2024)

Our research addresses an information gap identified in leading journals, while primarily aiming to equip universities with strategic insights on ethical conduct and institutional education management in ESG concepts. Based on theoretical findings, in the paper it was assumed that responsible functioning ESG conduct in the community of active members of the UN Global Compact generate active university leaders with quality ESG conduct. Therefore, the following hypotheses were set:

Hypothesis 1: EU member countries with the highest numbers of active members of the UN Global Compact have biggest number of active universities with quality ESG conduct.

Hypothesis 2: Since the educational process at universities is primarily determined by the quality of the teaching staff, there is an assumption that leading universities with

the highest number of points (score) for ESG behaviour also achieve the highest ratings for the social area representing stakeholder care.

Hypothesis 3: Selected representative macro indicators for 17 sustainable development goals have an impact on the ESG behaviour of university members of the UN Global Compact.

Hypothesis 4: Selected representative macro-indicators for the 17 UN Sustainable Development Goals (SDGs) mutually influence one another in their impact on the education of university members within the UN Global Compact.

Hypothesis 5: The higher the rating of selected representative macro indicators for 17 sustainable development goals, the higher the point evaluation of individual university members of the UN Global Compact in the related country.

Methodology

In alignment with the research objective, this paper employed a comprehensive and time-intensive methodology across three levels: the micro-level (individual universities), the meso-level (associations), and the macro-level (national economies). Our analysis focused exclusively on universities within the European Union that are active members of the UN Global Compact, given that these institutions represent the highest standard in ESG (Environmental, Social, Governance) education.

European Union universities with active membership in the UN Global Compact were selected for several reasons:

1. These institutions consistently implement the Plan-Do-Check-Act (PDCA) cycles (Song & Fischer, 2020), utilizing all relevant ESG strategy tools aligned with the 10 principles of the UN Global Compact. As active members, they maintain a systematic approach to integrating ESG principles into their governance structures.
2. They have established transparent mechanisms for ESG strategy implementation, supported by robust ESG managerial accounting systems. These systems allow for continuous monitoring and evaluation of ESG performance.
3. EU universities are closely engaged with enterprises regulated by the Directive

on Corporate Sustainability Reporting (CSRD), which mandates compliance with the 12 European Sustainability Reporting Standards (ESRS). These universities not only educate future professionals for these regulated entities but also voluntarily incorporate the ESRS into their institutional frameworks, reinforcing their commitment to ESG institutionalization (European Commission, 2023).

4. These universities offer accredited courses with a specific focus on ESG content, ensuring that students are prepared to meet the demands of ESG-related careers.

Building on this foundation, there were developed a set of representative ESG criteria to conduct a detailed assessment of the current ESG practices at EU universities with active UN Global Compact membership. These criteria provide a comprehensive evaluation of their ESG performance, including their contributions to ESG education. The criteria include Corporate Governance, Responsible Financing, Environmental Behavior, Social Behavior, Sustainability of ESG Activities, Verification of the Institutionalized ESG Strategy and Continuity and Sustainability of ESG Initiatives. This approach allows for a rigorous assessment of ESG behavior in universities, providing valuable insights into their role as leaders in both ESG practice and education

Table 1. Representative ESG Criteria for Detailed Evaluation of Current ESG Conduct of the EU Universities

Criterion	Evaluation Interval with Characteristics
<p>Corporate Governance → the quality of instruments and standards for institutionalisation of ethical management</p>	<p>Strategy of ESG management, ethical committee/commission, ethical codex/code of conduct, rules of procedure for ethical committee/commission, operative ESG plan/ SDGs plan → 9p. – 10.p. one of the tools is missing → 7p. – 8.p. 2 of the tools are missing → 5p. – 6.p. 3 of the tools are missing → 3p. – 4.p. 4 of the tools are missing → 1p. – 2.p.</p>
<p>Responsible Financing → the declared accountability and transparency in all organization financial transformed from rules/guide into realization: transparent rules for organization financing, project financing, annual reports</p>	<p>A organisation whose financial and investment processes have met the given objectives/rules and its realisation has a long-term development character generating for further innovation development → 9p. – 10.p. An organisation whose financial and investment processes have fully met its objectives; the financing has a long-term development character at a comparable level → 7p. – 8.p. An organisation whose financial and investment processes have partially met its objectives, but the financing is long-term in nature → 5p. – 6.p. An organisation whose financial and investment processes have fully met the objectives, but the financing is of a short-term nature → 3p. – 4.p. An organisation whose financial and investment processes have only partially met the objectives and the financing is of a short-term nature → 1p. – 2.p.</p>
<p>Environmental Behaviour → the declared conduct accountability and transparency in all organisation environmental Transformed activities from rules/guide into realization</p>	<p>All standards of environmental management have been performed: positive impact to climate change and pollution, water saving, energy saving, positive impact to biodiversity and ecosystems conduct according to the circular economy → 9p. – 10.p. 1 part is missing → 7p. – 8.p. 2 parts are missing → 5p. – 6.p. 3 parts are missing → 3p. – 4.p. 4 parts are missing → 1p. – 2.p.</p>
<p>Social Behaviour → the declared conduct accountability and transparency in all organisation social transformed activities from rules/guide into realisation</p>	<p>All standards of human capital management have been performed among students of all age categories, pedagogical employees, non- teaching staff, researchers, other stakeholders → 9p. – 10.p. part is missing → 7p. – 8.p. parts are missing → 5p. – 6.p. parts are missing → 3p. – 4.p. parts are missing → 1p. – 2.p.</p>
<p>Quality of Sustainability Report → the declared conduct responsibility, quality and transparency in preparation and publishing the requested sustainability report</p>	<p>All standards of the requested published sustainability report have been performed: completed all parts of ESG conduct related to the 10 UN Global Compact principles, identity rate of period ESG plans and published report, deadline of publishing, language, report published on UN Global Compact website → 9p. – 10.p. part is missing → 7p. – 8.p. parts are missing → 5p. – 6.p. parts are missing → 3p. – 4.p. parts are missing → 1p. – 2.p.</p>

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Criterion	Evaluation Interval with Characteristics
Verification of the Institutionalised ESG Strategy → evaluation of quality implementation of ESG principles in the organisation	All standards of ethical management have been performed: corporate government, environmental part, social part, responsible financing, published report → 9p. – 10.p. part is missing → 7p. – 8.p. parts are missing → 5p. – 6.p. parts are missing → 3p. – 4.p. parts are missing → 1p. – 2.p.
Sustainability of ESG Activities → time interval of the organisation membership, with the declared sustainable conduct	2024 – 2019 → 1p. – 2.p. 2024 – 2015 → 3p. – 4.p. 2024 – 2011 → 5p. – 6.p. 2024 – 2007 → 7p. – 8.p. 2024 – 2003 → 9p. – 10.p.

Our very detailed evaluation of the current ESG conduct of the EU universities with active status of the membership in UN Global Compact was focused on the real evaluation of ESG behaviour, incl. ESG education – concretely, all published documents and texts:

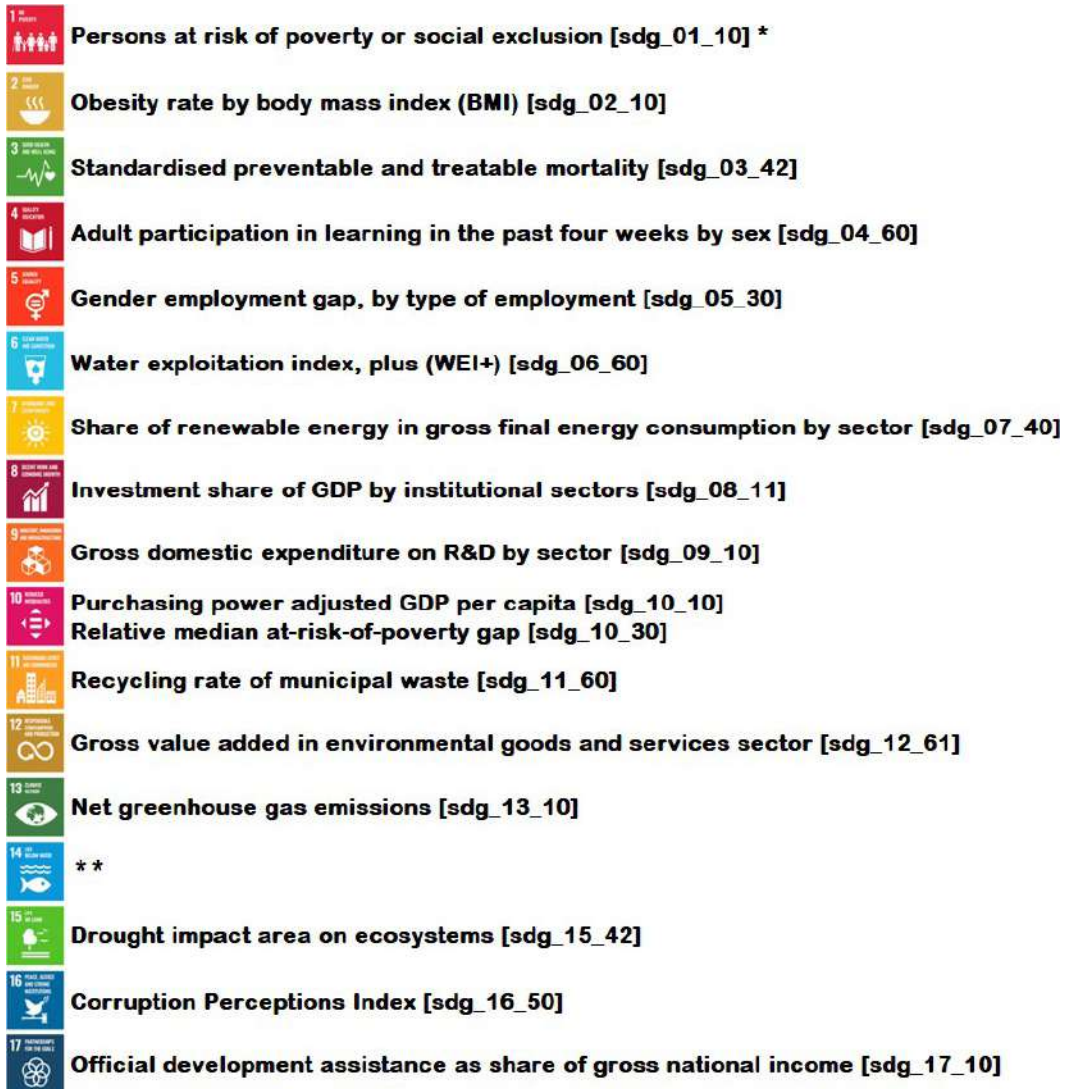
1. All relevant reports of these universities were checked (controlled and evaluated): annual reports, sustainability reports, integrated reports, annual reports about project activities, annual reports about financing and investment, evaluation reports of ethics and integrity behaviour.
2. Strategies, plans and schedules related to the ESG, CSR, SDGs, ethics and integrity
3. Websites of these universities, incl. social media.
4. Websites of cooperating/associating institutions with these universities, incl. social media, with relevant information about a related university.

These control and evaluation processes were very demanding on orientation in quite different systems of documentation, on languages, on identical control and evaluation approach timely. We found that

the EU universities with active status of the membership in UN Global Compact have had the highest quality level for PDCA cycles of ESG management, incl. monitoring and reporting system.

For the most objective and the most realistic evaluation of the quality management of ESG education at universities in EU countries, from all indicators of the 17 SDGs (<https://knowsdgs.jrc.ec.europa.eu/>) relevant for our analyse with following requirements were selected:

1. To be a representative indicator at the macro-level related to the ESG conduct, incl. accredited education at universities.
2. To have a stimulating nature of the selected indicator for the ESG conduct, incl. accredited education at universities.
3. To have identical reporting year for each selected SDG indicator in each EU country at Eurostat.
4. To create real basis for evaluation of integrated aggregated effect of selected SDG indicators to the ESG conduct, incl. accredited education at EU universities with active status of the membership in UN Global Compact.



* The detailed description of selected indicators – the databases <https://ec.europa.eu/eurostat/>

** Compensation aligned with SDG 10.3 supports higher objectives, particularly as the EU includes several landlocked countries.

Figure 4. Selected Representative SDG Indicators

On this basis, the matrix with selected 17 indicators of the 17 SDGs and 27 countries for common reported year was selected.

Our detailed system of the analytical methodology approach to research of the structured object can be visualised in next figure:

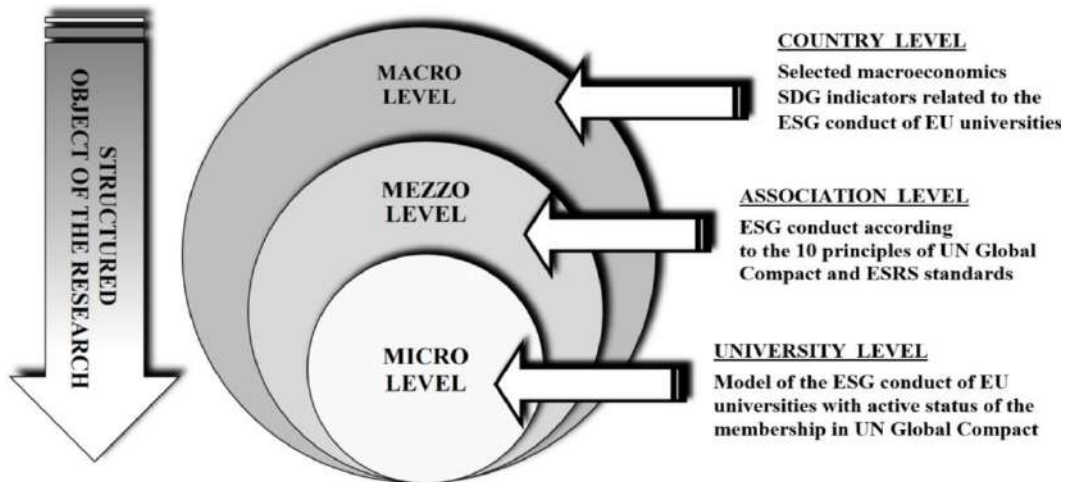


Figure 5. Structured Object of The Research

To rigorously evaluate universities' sustainable practices as collaborative models for ESG education, the research applied appropriate statistical methods. Linear regression was the primary tool, enabling analysis of relationships between a dependent variable (the university score—averaged per country) and multiple independent variables. Two models were developed: the first used 17 Environmental, Social, and Governance (ESG) indicators as independent variables, employing the stepwise method to select variables that notably improved explanatory power. The second model used a composite score, created by scaling each ESG indicator from 1 to 10 per country and summing these to generate an overall ESG rating.

Additionally, the study examined the pairwise relationships among the 17 ESG indicators using Pearson's correlation coefficient, a method quantifying the strength and direction of linear relationships between variables. As data availability for the ESG indicators varied, most were sourced from 2022, while missing values were estimated

using the random walk with drift method—a forecasting approach accounting for trends over time. This comprehensive statistical framework enabled a robust and objective assessment of universities' performance and the key ESG factors driving educational sustainability

Results and Discussion

All logical steps of our co-author team are focused on the achievement of the main aim - to analyse how important it is for quality higher education in the field of ESG to manage sustainable conduct of universities as a collaborative educational model for the complexity of the ESG education. In this case, the first hypothesis orientated on aggregated internal and external quality higher

education in the area of ESG in relation to other entities with functioned institutionalised ESG conduct in mother country was confirmed.

Hypothesis 1: EU member countries with the highest numbers of active members of the UN Global Compact have biggest number of active universities with quality ESG conduct.

Our analyses applied these findings:

Table 2. Universities in the EU with the Status "Active" in UN Global

Country	Name of the University with the Status "Active" in UN Global*	Σ Active Entities	Index UNGC Activity	Σ Points
Austria	act7/Σ9	199	0.035	
	Fachhochschule Burgenland GmbH			61.50
	Holzforschung Austria			49.50
	University of Applied Sciences Upper Austria			57.50
	University of Applied Sciences BFI Vienna			64.00
	Management Center Innsbruck			67.00
	IMC University of Applied Sciences Krems			68.00
	Ludwig Boltzmann Institute of Fundamental and Human Rights			56.50
Belgium	act0/Σ4	121	0.000	
Bulgaria	act3/Σ6	46	0.065	
	Sofia University St Kliment Ohridski			60.00
	University of National and World Economy			40.00
	University of Mining and Geology "St. Ivan Rilski"			38.00
Croatia	act3/Σ6	54	0.056	
	University of Zagreb, Faculty of Organization and Informatics			50.00
	VERN ¹ University			47.50
	RIT Croatia			50.00
Cyprus	act0/Σ2	9	0.000	
Czechia	act1/Σ2	17	0.059	
	Vysoka skola ekonomie a managementu, a.s. (University of Economics and Management)			39.00
Denmark	act2/Σ9	571	0.004	
	Copenhagen Business School			64.00
	KEA - Copenhagen School of Design and Technology			62.50
Estonia	act0/Σ0	7	0.000	
Finland	act1/Σ2	246	0.004	
	Lappeenranta-Lahden teknillinen yliopisto LUT			66.50
France	act13/Σ50	1498	0.009	

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Country	Name of the University with the Status "Active" in UN Global*	Σ Active Entities	Index UNGC Activity	Σ Points
	HEC Paris			61.00
	Université Paris-Dauphine			55.50
	Association Nouvelle Ecole des Cadres EDC			55.00
	IESEG School of Management			62.50
	iaelyon			58.50
	SKEMA Business School			55.00
	IMT Nord Europe			50.00
	Institut D'Administration Des Entreprises NICE			54.00
	OMNES Education			60.00
	Em-Lyon			61.00
	ICN Business School			62.50
	EPF Ecole d'Ingenieurs			51.50
	KEDGE Business School			58.00
Germany	act7/Σ30	995	0.007	
	Deutsches Zentrum für Luft- und Raumfahrt e.V.			63.50
	Bildungszentrum für Beruf und Wirtschaft e. V.			58.50
	Frankfurt School of Finance & Management gGmbH			60.50
	Fraunhofer-Gesellschaft			65.00
	ESMT European School of Management and Technology GmbH			56.00
	IU International University of Applied Sciences			63.00
	Hochschule Dusseldorf - University of Applied Sciences			59.00
Greece	act4/Σ9	118	0.034	
	The American College of Greece			58.00
	New York College			46.00
	Athens University of Economics and Business			55.50
	ALBA Graduate Business School			53.00
Hungary	act0/Σ2	9	0.000	
Ireland	act2/Σ5	48	0.042	
	Institute of Technology Tralee, UNESCO Chair			55.50
	Dublin City University Business School			64.00
Italy	act6/Σ20	581	0.010	

Country	Name of the University with the Status "Active" in UN Global*	Σ Active Entities	Index UNGC Activity	Σ Points
	Universita degli Studi della Tuscia			58.50
	Venice International University			56.00
	University of Rome Tor Vergata			65.50
	Ca' Foscari University of Venice			61.50
	Scuola Superiore Sant'Anna di Studi Universitari e di Perfezionamento			62.00
	ALTIS Postgraduate School Business and Society of the Catholic University of the Sacred Heart			56.00
Latvia	act1/Σ4	4	0.250	
	Riga Technical University			60.50
Lithuania	act4/Σ15	25	0.160	
	Kauno kolegija / University of Applied Sciences			46.00
	Siauliai State College			33.00
	Kaunas University of Technology			61.00
	Panevėžio kolegija / University of Applied Sciences			53.00
Luxembourg	act0/Σ0	45	0.000	
Malta	act0/Σ0	7	0.000	
Netherlands	act0/Σ2	307	0.000	
Poland	act6/Σ8	159	0.038	
	Jagiellonian University			62.00
	The SGH Warsaw School of Economics			61.50
	Cracow University of Economics			62.00
	Collegium Civitas			59.50
	CENTRUM EDUKACYJNE TECHNIK Sp. z o.o.			56.50
	Kozminski University			69.00
Portugal	act7/Σ8	144	0.049	
	Universidades Lusíada			53.00
	NOVA School of Law			61.00
	NOVA Information Management School			62.50
	Universidade Católica Portuguesa			62.00
	Universidade de Coimbra			64.00
	Nova School of Business and Economics			66.00
	Grande Colegio Universal Lda.			47.00
Romania	act1/Σ20	30	0.033	
	Institute of International Relations and Economic Cooperation			42.00

Articles

Country	Name of the University with the Status "Active" in UN Global*	Σ Active Entities	Index UNGC Activity	Σ Points
Slovakia	act1/Σ1	8	0.125	
	University of Economics in Bratislava			66.50
Slovenia	act2/Σ3	5	0.400	
	National Institute of Chemistry			66.00
	IEDC - Poslovna sola Bled d.o.o.			64.50
Spain	act25/Σ137	1574	0.016	
	TECNO INTE INFORMÁTICA SLU			56.50
	COLEGIO OFICIAL DE AGENTES COMERCIALES DE LA COMUNIDAD DE MADRID (COACCM)			55.00
	UNIVERSIDAD POLITECNICA DE CARTAGENA			58.50
	Fundacion Canonica El Buen Pastor			56.50
	INSTITUCION HISPANO-BRITANICA DE ENSEÑANZA-COLEGIO JUAN DE LANUZA			55.50
	Colegio Británico de Aragón			55.00
	Universidad de Cádiz			65.50
	ESCI-UPF International Business			64.50
	Colegio Ramón y Cajal, S.L.			55.00
	CEUPE - Centro Europeo de Postgrado			55.00
	Instituto Seneca			55.50
	ESIC Business & Marketing School			54.00
	Universidad Internacional de Andalucía			68.00
	EADA			65.00
	Universidad de Jaén			69.00
	EAE Business School			60.00
	Fundacion Universidad - Empresa			58.50
	Universidad de Malaga			65.00
	Grupo CIS IM/ CIS - The College for International Studies, International Management Business School, NGO Cruzada por los Niños			62.50
	Universidad Pontificia Comillas (ICAI-ICADE)			59.50
	Fundació ESADE			69.00

Country	Name of the University with the Status "Active" in UN Global*	Σ Active Entities	Index UNGC Activity	Σ Points
	Fundación EOI, F.S.P. - Escuela de Organización Industrial			57.50
	IESE, Universidad de Navarra			58.50
	Instituto de Empresa - IE Business School			69.00
	Universidad Nacional de Educacion a Distancia (UNED)			68.00
Sweden	act4/Σ11	504	0.008	
	Stockholm University- Stockholm Resilience Centre			58.50
	Kristianstad University			60.50
	School of Business, Economics and Law at University of Gothenburg			60.50
	Stockholm School of Economics			62.50
Total	act100/Σ7331	7331	0.014	

* Status Quo 08/08/2024 When in each EU country the total number of entities and universities with the status in UN Global was compared - 3 most numerous "active" memberships indicated for Spain 1574 active entities (with 25 active universities), France 1498 active entities (with 13 active universities), and Germany 995 active entities (with 7 active universities). When EU countries are compared by the Index UNGC Activity (Σ active universities / Σ active entities) - 3 highest values of indexes achieved Slovenia 0.40, Latvia 0.25 and Lithuania 0.16.

The following figure illustrates the ratio of top-performing universities—those achieving the highest aggregated internal and external quality in ESG-focused higher education— within the national community of all active EU members demonstrating institutionalized ESG practices.

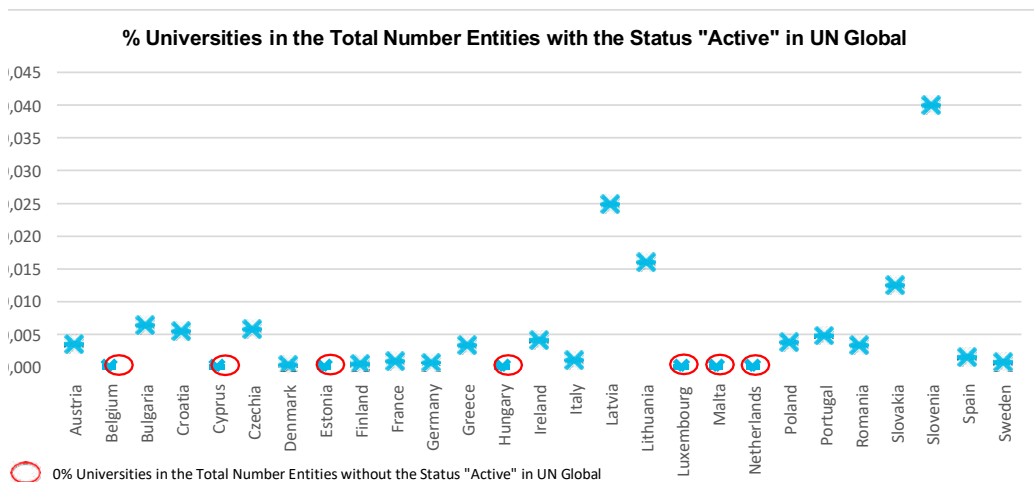


Figure 6. % Universities in the Total Number Entities with the Status "Active" in UN Global

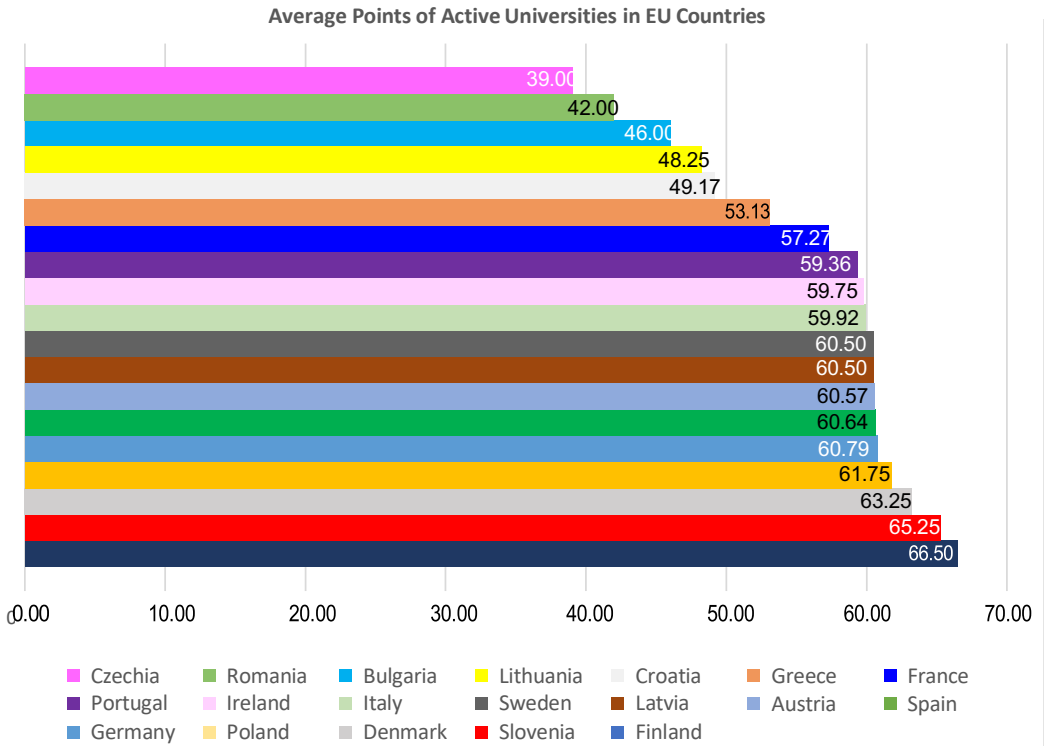


Figure 7. Average Points of Active Universities in EU Countries

Countries with higher UN Global Compact (UNGC) Index activity exhibit a stronger impact from university-led ESG education and dissemination into their national communities. Notably, the leaders in UNGC Index activity are universities from newer EU member states. When in each EU country average points of active universities according to the countries was compared –at the leader positions other countries than with the highest numbers of active members of the UN Global Compact

were identified – Slovakia 66.5 points, Finland 66.50 points and Slovenia 65.25.

Detailed analysis of this status quo of country average points, as a mirror ESG conduct of a university, contained statistics values calculated from all 100 EU universities: Median 58.75 points, Mean 57.19 points and Modus 55 points. That means - the standard model of ESG conduct for a university with the typical/ most frequented/ standard values had Σ 58.75 points in the structure:

Table 3. The Standard Model of ESG Conduct for a University (in points)

Corporate Governance	Responsible Financing	Environmental Behaviour	Social Behaviour	Quality of Sustainable Reporting	Verification of the ESG Institutionalisation	Sustainability of ESG	Σ Points
8.75	8.5	9.0	8.5	7.5	7.5	9.0	58.75

Articles

Table 3 illustrates universities in the EU with the Status "Active" in UN Global, which shows that the point 58.75 limit of the Standard Model of ESG Conduct achieved more frequently universities in different countries than countries with the highest numbers of active members of the UN Global Compact. The most visible is this situation with highest % of universities over the point 58.75 limit of the Standard Model of ESG Conduct in Slovenia, Denmark, Finland, Latvia, Slovakia and Poland. Countries with the highest numbers of active members of the UN Global Compact reported bigger numbers of Universities with less quality of ESG conduct (max 58.74 points).

The simple overview of factual situation in applying of Standard Model of ESG Conduct in EU countries presents the following structure of "active" EU Universities with the membership in UN Global Compact according

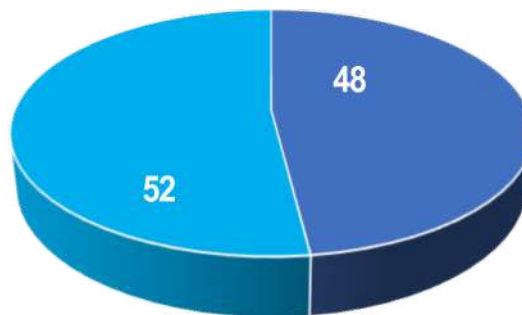
to the application of the Standard Model of ESG Conduct. It is appreciated that a higher share is achieved by the above-standard universities.

After the argument summary, Hypothesis 1: EU member countries with the highest numbers of active members of the UN Global Compact have the biggest number of active universities with quality ESG conduct was not confirmed.

Hypothesis 2: Since the educational process at universities is primarily determined by the quality of the teaching staff, there is an assumption that leading universities with the highest number of points (score) for ESG behaviour also achieve the highest ratings for the social area representing stakeholder care.

The analyses of quality levels in ESG management and education at universities were conducted through a detailed evaluation of the "Social Behaviour" criterion.

Structure of "Active" EU Universities with the Membership in UN Global Compact according to the Application of Standard Model of ESG Conduct (in %)



- Universities with less quality of ESG conduct (max 58.74 points)
- Universities with standard model of ESG conduct (58.75 points) or with more points

Figure 8. Structure of "Active" EU Universities (in % = number of units)

Articles

Table 4. Quality level for the management and education of ESG topics at universities via evaluation of criterion “Social Behaviour”

Country	Name of the University with the Status "Active" in UN Global	Social Behaviour	Σ Points
Austria			
	Fachhochschule Burgenland GmbH	9.00	61.50
	Holzforschung Austria	7.00	49.50
	University of Applied Sciences Upper Austria	7.50	57.50
	University of Applied Sciences BFI Vienna	9.00	64.00
	Management Center Innsbruck	10.00	67.00
	IMC University of Applied Sciences Krems	10.00	68.00
	Ludwig Boltzmann Institute of Fundamental and Human Rights	7.50	56.50
Bulgaria			
	Sofia University St Kliment Ohridski	8.50	60.00
	University of National and World Economy	6.00	40.00
	University of Mining and Geology "St. Ivan Rilski"	5.00	38.00
Croatia			
	University of Zagreb, Faculty of Organization and Informatics	7.00	50.00
	VERN' University	6.50	47.50
	RIT Croatia	7.00	50.00
Czechia			
	Vysoká škola ekonomie a managementu, a.s. (University of Economics and Management)	6.00	39.00
Denmark			
	Copenhagen Business School	9.00	64.00
	KEA - Copenhagen School of Design and Technology	8.50	62.50
Finland			
	Lappeenranta-Lahden teknillinen yliopisto LUT	10.00	66.50
France			

Articles

Country	Name of the University with the Status "Active" in UN Global	Social Behaviour	Σ Points
	HEC Paris	8.50	61.00
	Université Paris-Dauphine	7.50	55.50
	Association Nouvelle Ecole des Cadres EDC	8.00	55.00
	IESEG School of Management	9.00	62.50
	laelyon	8.50	58.50
	SKEMA Business School	8.00	55.00
	IMT Nord Europe	7.00	50.00
	Institut D'Administration Des Entreprises NICE	8.00	54.00
	OMNES Education	8.00	60.00
	Em-Lyon	8.50	61.00
	ICN Business School	9.00	62.50
	EPF Ecole d'Ingenieurs	7.00	51.50
	KEDGE Business School	8.00	58.00
Germany			
	Deutsches Zentrum für Luft- und Raumfahrt e.V.	8.50	63.50
	Bildungszentrum für Beruf und Wirtschaft e. V.	8.50	58.50
	Frankfurt School of Finance & Management gGmbH	8.50	60.50
	Fraunhofer-Gesellschaft	10.00	65.00
	ESMT European School of Management and Technology GmbH	8.50	56.00
	IU International University of Applied Sciences	9.00	63.00
	Hochschule Dusseldorf - University of Applied Sciences	8.50	59.00
Greece			
	The American College of Greece	8.50	58.00
	New York College	7.00	46.00
	Athens University of Economics and Business	8.00	55.50
	ALBA Graduate Business School	8.00	53.00
Ireland			
	Institute of Technology Tralee, UNESCO Chair	8.00	55.50
	Dublin City University Business School	9.00	64.00
Italy			

Articles

Country	Name of the University with the Status "Active" in UN Global	Social Behaviour	Σ Points
	Universita degli Studi della Tuscia	8.50	58.50
	Venice International University	8.00	56.00
	University of Rome Tor Vergata	9.50	65.50
	Ca' Foscari University of Venice	9.00	61.50
	Scuola Superiore Sant'Anna di Studi Universitari e di Perfezionamento	9.00	62.00
	ALTIS Postgraduate School Business and Society of the Catholic University of the Sacred Heart	8.00	56.00
Latvia			
	Riga Technical University	9.00	60.50
Lithuania			
	Kauno kolegija / University of Applied Sciences	7.00	46.00
	Siauliai State College	5.00	33.00
	Kaunas University of Technology	9.00	61.00
	Panevėžio kolegija / University of Applied Sciences	8.00	53.00
Poland			
	Jagiellonian University	9.00	62.00
	The SGH Warsaw School of Economics	9.50	61.50
	Cracow University of Economics	9.50	62.00
	Collegium Civitas	9.50	59.50
	CENTRUM EDUKACYJNE TECHNIK Sp. z o.o.	9.50	56.50
	Kozminski University	10.00	69.00
Portugal			
	Universidades Lusíada	8.00	53.00
	NOVA School of Law	9.00	61.00
	NOVA Information Management School	9.00	62.50
	Universidade Catolica Portuguesa	9.00	62.00
	Universidade de Coimbra	9.00	64.00
	Nova School of Business and Economics	9.50	66.00
	Grande Colegio Universal Lda.	7.00	47.00
Romania			
	Institute of International Relations and Economic Cooperation	6.00	42.00
Slovakia			
	University of Economics in Bratislava	9.50	66.50
Slovenia			
	National Institute of Chemistry	9.50	66.00
	IEDC - Poslovna sola Bled d.o.o.	9.50	64.50

Country	Name of the University with the Status "Active" in UN Global	Social Behaviour	Σ Points
Spain			
	TECNO INTE INFORMÁTICA SLU	9.50	56.50
	COLEGIO OFICIAL DE AGENTES COMERCIALES DE LA COMUNIDAD DE MADRID (COACCM)	8.50	55.00
	UNIVERSIDAD POLITECNICA DE CARTAGENA	9.50	58.50
	Fundacion Canonica El Buen Pastor	8.50	56.50
	INSTITUCION HISPANO-BRITANICA DE ENSEÑANZA- COLEGIO JUAN DE LANUZA	8.50	55.50
	Colegio Británico de Aragón	8.50	55.00
	Universidad de Cádiz	9.50	65.50
	ESCI-UPF International Business	9.50	64.50
	Colegio Ramón y Cajal, S.L.	8.50	55.00
	CEUPE - Centro Europeo de Postgrado	8.50	55.00
	Instituto Seneca	8.50	55.50
	ESIC Business & Marketing School	8.50	54.00
	Universidad Internacional de Andalucía	10.00	68.00
	EADA	10.00	65.00
	Universidad de Jaén	10.00	69.00
	EAE Business School	8.50	60.00
	Fundacion Universidad – Empresa	8.50	58.50
	Universidad de Malaga	9.50	65.00
	Grupo CIS IM/ CIS - The College for International Studies, International Management Business School, NGO Cruzada por los Niños	9.50	62.50
	Universidad Pontificia Comillas (ICAI-ICADE)	8.50	59.50
	Fundació ESADE	10.00	69.00
	Fundación EOI, F.S.P. - Escuela de Organización Industrial	8.50	57.50
	IESE, Universidad de Navarra	8.50	58.50
	Instituto de Empresa - IE Business School	10.00	69.00
	Universidad Nacional de Educacion a Distancia (UNED)	10.00	68.00
Sweden			
	Stockholm University- Stockholm Resilience Centre	8.50	58.50
	Kristianstad University	9.50	60.50
	School of Business, Economics and Law at University of Gothenburg	9.50	60.50
	Stockholm School of Economics	9.50	62.50

Quality of Social Behaviour to All Stakeholders at 12 Best Universities (in Points)

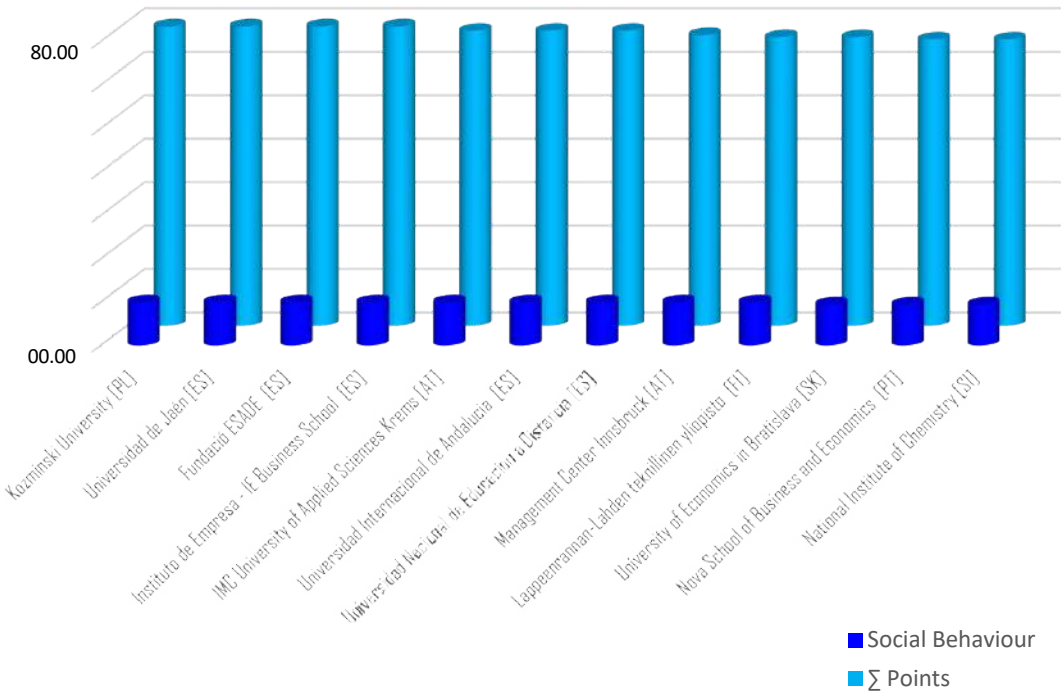


Figure 9. Social Behaviour to All Stakeholders at the 12 TOP Universities

The detailed analysis of the "Social Behavior" criterion provides a qualified assessment of ESG management and education, encompassing all responsible internal and external stakeholders—including research activities and collaborations with external entities for practical professional training—while embodying all attributes of ethical management. The most telling image about the current situation of quality management and education of ESG at the EU universities is shown in Figure 9.

The best 7 universities from our researched group of all 100 universities achieved the excellent social behaviour of all stakeholders (with maximum number of 10 points).

After the summary of the arguments, Hypothesis 2: Since the educational process

at universities is primarily determined by the quality of the teaching staff, we assume that leading universities with the highest number of points for ESG behaviour also achieve the highest ratings for the social area representing stakeholder care, was confirmed.

Hypothesis 3: Selected representative macro indicators for 17 sustainable development goals have an impact on the ESG behaviour of university members of the UN Global Compact.

Impact analyses of these selected macro indicators for 17 sustainable development goals (Figure 9). Selected representative SDG indicators for each EU country, reflecting the ESG behavior of university members of the UN Global Compact, were analyzed using a linear regression model.

Table 5. Linear regression model 1

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr>F
Model	2	486.70563	242.85281	8.04	0.0021
Error	24	752.38094	30.22421		
Corrected Total	26	1211.08657			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr>F
Intercept	44.38122	3.58034	4644.13317	153.66	<0.0001
sdg_13_10	0.09227	0.03714	186.54364	6.17	0.0204
sdg_04_60	0.43251	0.13105	329.18348	10.89	0.0030

Source: Own elaboration

Although statistical dependencies were analyzed between evaluation ratings of 100 universities and the SDG indicator matrix (17 macro indicators for 27 EU countries), only two indicators showed significant impact: Net greenhouse gas emissions [sdg_13_10] and Adult participation in learning in the past four weeks by sex [sdg_04_60]. In the model, these two indicators were statistically significant; the rest were not.

For Adult participation in learning [sdg_04_60], the positive coefficient (0.43) indicates a direct relationship—higher adult learning participation correlates with higher university scores, supporting the hypothesis that lifelong learning quality enhances ESG performance.

For Net greenhouse gas emissions [sdg_13_10], an expected inverse relationship (lower emissions, higher score) was not confirmed but the value is near zero, indicating minimal impact. Nevertheless, the indicator is statistically significant and

logically meaningful: a one- unit decrease in emissions increases the university score by 0.09227, reflecting ethical management through emission reductions improving ESG scores.

After the summary of the arguments, Hypothesis 3: Selected representative macro indicators for 17 sustainable development goals have an impact on the ESG behaviour of university members of the UN Global Compact, was confirmed.

Hypothesis 4: Selected representative macro-indicators for the 17 UN Sustainable Development Goals mutually influence one another in their impact on the education of university members of the UN Global Compact.

In this paper, the analysis of mutual influences among indicators—particularly their impact on the education of university members of the UN Global Compact—begins with correlation estimates for 17 selected representative indicators across the 17 SDGs.

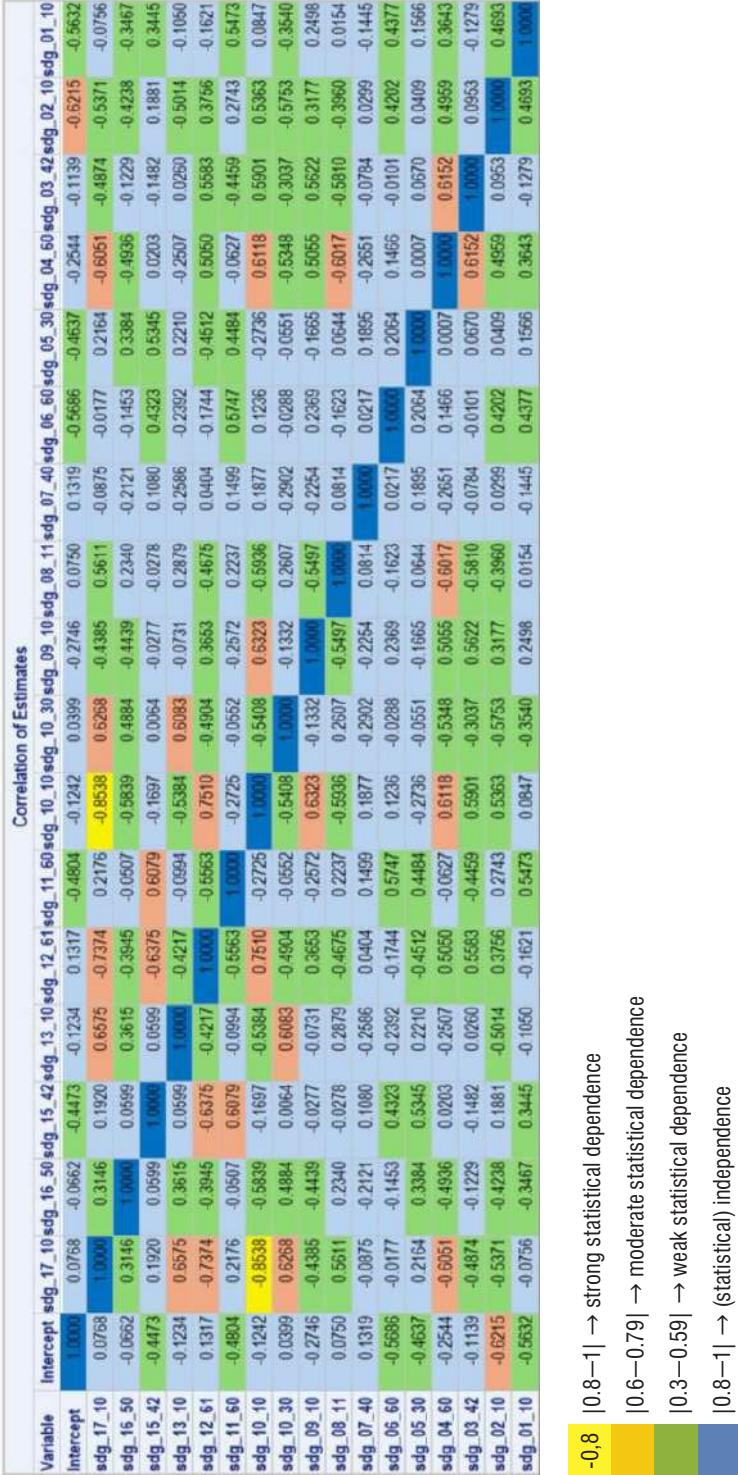


Figure 10. Correlation of Estimates for 17 Selected representative indicators of 17 SDGs

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In the matrix “Correlation of Estimates” above, are depicted the correlations of individual pairwise correlation coefficients between 17 selected SDG indicators. A positive value expresses a direct development relationship between 2 indicators, and a number with a negative sign means that the relationship is indirect, i.e. j. when one indicator increases, the other decreases and vice versa. Individual dependencies are marked in colour:

-0,8	0.8–1 → strong statistical dependence
	0.6–0.79 → moderate statistical dependence
	0.3–0.59 → weak statistical dependence
	0.8–1 → (statistical) independence

The most visible statistical dependence is indicated by indicators *sdg_17_10* Official development assistance as share of gross national income and *sdg_13_10* Net greenhouse gas emissions (0.6575), *sdg_12_61* Gross value added in environmental goods and services sector (-0.7374) and *sdg_10_10* Purchasing power adjusted GDP per capita (-0.8538).

Official development assistance (ODA) as a share of gross national income—rising across all country entities, including universities—logically impacts ESG education by pressuring capital reallocation. This leads to a decline in gross value added in the environmental goods and services sector and a more pronounced drop in purchasing power-adjusted GDP per capita values. Negative impact increasing volume of Official development assistance as share of gross national income on increasing volume Net greenhouse gas emissions as the reaction to donated/cheap money.

The direct moderate statistical dependence, related to the newest trends of ESG research and education at universities

– *sdg_12_61* Gross value added in environmental goods and services sector and *sdg_10_10* Purchasing power adjusted GDP per capita (0,7510) was emphasized and described. The dynamic development of cutting-edge technologies and environmental products continues to generate higher gross value added in the environmental goods and services sector, directly driving growth in purchasing power-adjusted GDP per capita.

These procedures of official development assistance must by very carefully managed by each responsible level of Corporate Governance, incl. universities.

In the paper the moderate statistical dependencies were accented and described, related to the newest trends of ESG researches and education at universities - *sdg_12_61* Gross value added in environmental goods and services sector and the direct dependencies with *sdg_10_10* Purchasing power adjusted GDP per capita (0,7510), and the indirect dependencies with *sdg_15_42* Drought impact area on ecosystems (-0,6375), too.

The dynamic development of cutting-edge technologies and environmental products continues to drive higher gross value added in the environmental goods and services sector—boosting purchasing power-adjusted GDP per capita—while simultaneously and very positively supporting reductions in drought-impacted ecosystem areas.

Following the summary, Hypothesis 4 was confirmed: Selected representative macro-indicators for the 17 UN Sustainable Development Goals mutually influence one another in their impact on the education of university members within the UN Global Compact.

Hypothesis 5: The higher the rating of selected representative macro indicators for 17 sustainable development goals, the higher

the point evaluation of individual university members of the UN Global Compact in the related country.

For confirmation or disproving of this hypothesis, data about an university

evaluation from Table 6 Universities in the EU with the Status "Active" in UN Global and aggregated data from appreciation of selected representative indicators of 17 SDGs for each country was applied:

Table 6. Evaluation of the Country ESG Behaviour according to the Selected Indicators for 17 SDGs

Country	Σ	Country	Σ	Country	Σ
Austria	219	France	204	Malta	196
Belgium	102	Germany	222	Netherlands	211
Bulgaria	184	Greece	196	Poland	197
Croatia	202	Hungary	204	Portugal	192
Cyprus	191	Ireland	221	Romania	181
Czechia	185	Italy	192	Slovakia	208
Denmark	221	Latvia	189	Slovenia	185
Estonia	210	Lithuania	199	Spain	177
Finland	212	Luxembourg	210	Sweden	231

From the process of the statistical modelling, the following findings were obtained:

1. During the performed detailed analysis we identified the important relevant fact

– in the first 9 EU countries with the best rating of 17 ESG indicators have been functioning 22 Universities with an above-standard rating (58.75 and more points) of ESG Conduct:

Structure of EU Universities with an Above-Standard Rating of ESG Conduct in the 1/3 of the EU Countries with the Best Rating

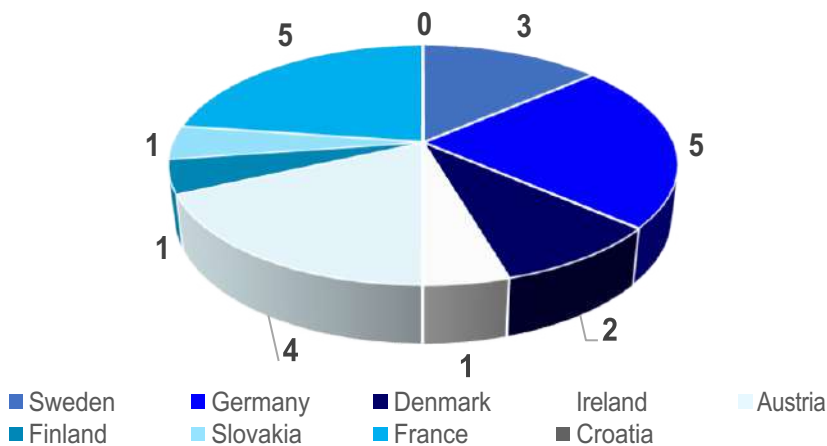


Figure 11. The 1/3 of the EU Countries with the Best Rating and EU Universities with an Above-Standard Rating

2. The Analysis of Linear Regression

Table 7. Parameter Estimates of the Linear Regression

Parameter Estimates					
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	23.24018	11.39515	2.04	0.0521
Sum	1	0.33624	0.11208	3.00	0.0060

The resulting model contains a dependent variable, which is the sum of points assigned to individual indicators in each country. Thus, there is a dependency between university scores and the aggregate indicator for all 17 indicators in 27 countries. The direct dependence was confirmed, which means that as the aggregate indicator increases, the scores of the universities also increase.

Statistical interpretation: If the value of the summary indicator of the 17 SDG indicators increases by 1, the score of universities increases by 0.336.

After the summary, Hypothesis 5 was confirmed: The higher the rating of selected representative macro indicators for 17 sustainable development goals, the higher the point evaluation of individual university members of the UN Global Compact in the related country.

Through rigorous analysis at three levels—micro (individual universities), meso (institutional associations), and macro (national and international frameworks)—the study highlights the significance of these institutions' ESG ethics management and education. The study findings underscore the role of these universities as leaders in promoting ethical conduct and advancing the integration of ESG principles in higher education, with potential implications for other institutions across the EU. Key contributions from this research include a detailed assessment of the current state of ESG implementation, as well as an

identification of both ongoing challenges and emerging opportunities within the sector (Nguyen, Muangsanam, & Tuamsuk, 2025).

I. At the micro-level:

The standard model of ESG conduct for a university with the typical/ most frequented/ standard values had \sum 58.75 points (in the structure in points Corporate Governance 8.75, Responsible Financing 8.5, Environmental Behaviour 9.0, Social Behaviour 8.5, Quality of Sustainable Reporting 7.5, Verification of the ESG Institutionalisation 7.5, Sustainability of ESG 9.0). The most visible is this situation with the highest % of universities over the point 58.75 limit of the Standard Model of ESG Conduct in Slovenia, Denmark, Finland, Latvia, Slovakia and Poland. Countries with the highest numbers of active members of the UN Global Compact reported a bigger number of Universities with less quality of ESG conduct (max 58.74 points). We can appreciate that a higher share is achieved by above-standard universities – 52 from 100.

From the detailed analyses of the criterion "Social Behaviour" the assessment of management and education of ESG could be classified, which perform all responsible internal and external stakeholders, incl. research activities and arrangement cooperation with external entities for practical profession education, with all attributes ethical management. The best 7 universities from

Articles

our researched group of all 100 universities achieved the excellent social behaviour of all stakeholders (with a maximum number of 10 points), 27 universities have evaluation less than in standard model (8.5 points) and none of the universities had below 50% (5 points). These values present high quality of ethical professional behaviour in the form of sustainability (incl. education and research activities).

II. At the meso-level:

In the constructed model, two indicators proved statistically significant among the 17 analyzed: Net greenhouse gas emissions (SDG 13.10) and Adult participation in learning in the past four weeks by sex (SDG 04.60). The rest turned out to be statistically insignificant. For our analysis of quality system of education management of indicator Adult participation in learning in the past four weeks by sex [sdg_04_60] this is important information with following findings: The estimated value of this indicator was positive (0.43), which means that there is a direct dependence, i.e. j. the higher the indicator, the higher the score will be for the universities. This is the real situation and logical impact: If the value of adult participation in learning in the past four weeks is growing by 1, then the universities score increases by 0.43. - when we have developing quality education (in this case more important the lifelong learning) this is a basis for higher quality of ESG conduct of universities.

From the process of our statistical modelling, we obtained following findings:

- During performed detailed analysis we identified the important relevant fact – Among the first nine EU countries with the

top ratings across 17 ESG indicators, 22 universities operate with above-standard ESG Conduct ratings (58.75 points or higher).

- The direct dependence was confirmed, which means that as the aggregate indicator increases, the scores of the universities also increase. If the value of the summary indicator of the 17 SDG indicators increases by 1, the score of universities increases by 0.336. In this case, the higher the rating of selected representative macro indicators for 17 sustainable development goals, the higher the point evaluation of individual university members of the UN Global Compact in the related country.

III. At the macro-level:

From our statistical modelling, we obtained the following findings:

- The 17 SDG indicators within one country are interconnected, influence and synergistically influence each other.
- They influence not only themselves, but also entities at the meso level and micro levels. Due to their character, they have a positive motivational influence on the sustainable management of organizations and ESG properly (including ESG education).

Generally, we can evaluate EU universities - members of UN Global Compact very positively. All their activities focused on ESG conduct are facultative from the perspective of ethics. This unique combination reflects intensive efforts to institutionalize ESG concepts based on the rigorous principles of the UN Global Compact, alongside proactively (and voluntarily ahead of mandate) adopting the ESRS standards under CSRD.

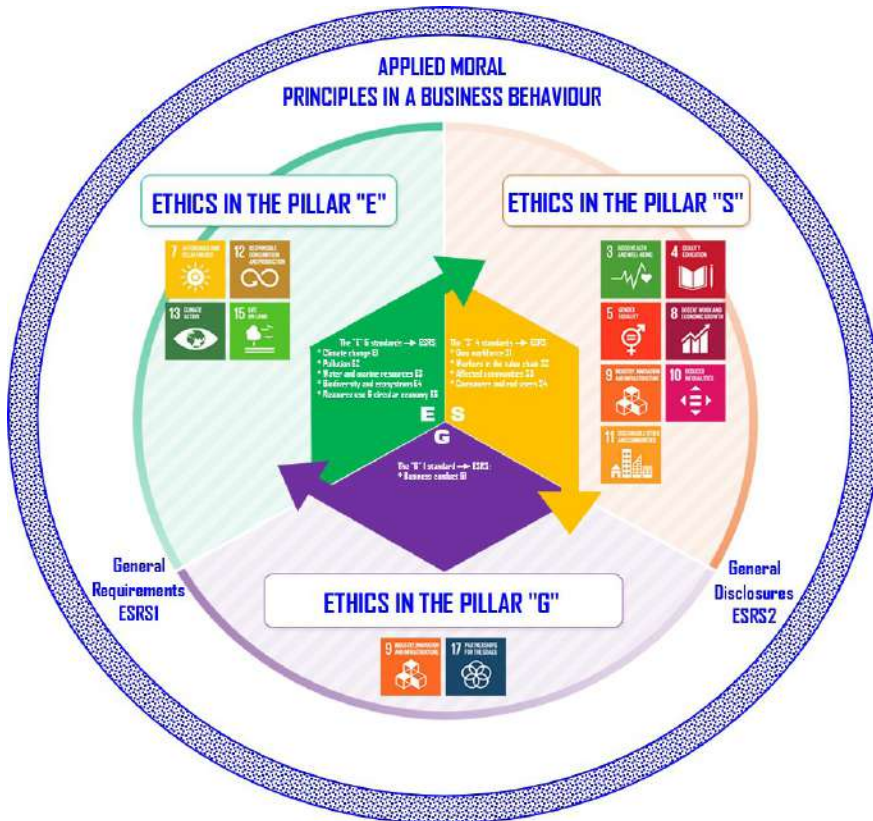


Figure 12. ESG conduct of EU universities at the ethics principles, self elaboration

This strategic conduct of each EU university - member of UN Global Compact is a very efficient time and effort investment to the most productive and successful form of education management: to educate student via accredited study fields focused on ESG management, but first via self-strategic conduct of the institutionalized functioning ESG management of the university.

Conclusion

The article is the creative contribution to the innovative development for new experts' education, requested with new demands of services, industry and other society branches

for sustainability improvements according to the measurable and quantifiable indicators of ESG conduct at the universities.

Future Agenda

After the application of three-dimensional analysis, a successful completion of the management research for a sustainable conduct of universities as a collaborative educational model for complexity of the ESG education could be stated. Furthermore, the paper results lead to recommendation for continuation in this research, focused on a new improved level of education management in the area of ESG standardization.

Managerial Contribution

This article provides a comprehensive analysis of the critical importance of managing sustainable practices within universities to enhance the quality of higher education in the field of Environmental, Social and Governance. By positioning universities as collaborative educational models, the study addresses the inherent complexity of ESG education. A in-depth evaluation of the current status was conducted, challenges and opportunities related to the ethical conduct and educational practices of European Union universities that are members of the UN Global Compact were identified, examining their broader influence on other EU universities.

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