



KONFERENCIAKÖTET

Conference Proceedings

**Nemzetközi tudományos konferencia
a Magyar Tudomány Ünnepe alkalmából**

International Scientific Conference
on the Occasion of the Hungarian Science Festival

Sopron, 2025. november 6.

6 November 2025, Sopron

**FEJLŐDÉSI PÁLYÁK ÉS ÚJ TÖRÉSVONALAK A
FENNTARTHATÓSÁGI ÁTMENET IDŐSZAKÁBAN**

DEVELOPMENT TRAJECTORIES AND NEW DIVIDES IN TIMES OF SUSTAINABILITY TRANSITIONS

Szerkesztők / Editors:

RESPERGER Richárd, SZÉLES Zsuzsanna, TÓTH Balázs István

Nemzetközi tudományos konferencia a Magyar Tudomány Ünnepe alkalmából
International Scientific Conference on the Occasion of the Hungarian Science Festival

Sopron, 2025. november 6. / 6 November 2025, Sopron

**FEJLŐDÉSI PÁLYÁK ÉS ÚJ TÖRÉSVONALAK A
FENNTARTHATÓSÁGI ÁTMENET IDŐSZAKÁBAN**
DEVELOPMENT TRAJECTORIES AND NEW DIVIDES
IN TIMES OF SUSTAINABILITY TRANSITIONS

KONFERENCIAKÖTET
CONFERENCE PROCEEDINGS

LEKTORÁLT TANULMÁNYOK / PEER-REVIEWED PAPERS

Szerkesztők / Editors:

RESPERGER Richárd – SZÉLES Zsuzsanna – TÓTH Balázs István



SOPRONI EGYETEM KIADÓ

UNIVERSITY OF SOPRON PRESS

SOPRON, 2026



JUBILEUMI
TUDOMÁNYÜNNEP
2025



SCIENCE
JUBILEE
2025

Mottó: „200 év a tudás és a társadalom szolgálatában”
/ Motto: „200 years to knowledge and service to society”



**MAGYAR
TUDOMÁNY
ÉVE 2025/2026**

Felelős kiadó / Executive Publisher: Prof. Dr. FÁBIÁN Attila
a Soproni Egyetem rektora / Rector of the University of Sopron

Szerkesztők / Editors:

Dr. RESPERGER Richárd, Prof. Dr. SZÉLES Zsuzsanna, Dr. habil. TÓTH Balázs István

Lektorok / Reviewers:

Dr. BARTÓK István, BAZSÓNÉ Dr. BERTALAN Laura, Dr. BEDNÁRIK Éva,
Dr. CZIRÁKI Gábor, Dr. DIÓSSI Katalin, Dr. habil. BARANYI Aranka,
Dr. habil. JANKÓ Ferenc, Dr. habil. JUHÁSZ Tímea, Dr. habil. PAÁR Dávid,
Dr. habil. PAPP-VÁRY Árpád, Dr. habil. SZABÓ Zoltán, Dr. habil. TÓTH Balázs István,
Dr. HOSCHEK Mónika, Dr. KARNER Cecília, Dr. KERESZTES Gábor,
Dr. habil. KOLOSZÁR László, Dr. KÓPHÁZI Andrea, Dr. MÉSZÁROS Katalin,
Dr. NÉMETH Nikoletta, Prof. Dr. OBÁDOVICS Csilla, Dr. PALANCSA Attila,
PAPPNÉ Dr. VANCSÓ Judit, Dr. RESPERGER Richárd, Prof. Dr. SZÉKELY Csaba,
Prof. Dr. SZÉLES Zsuzsanna, Dr. SZÓKA Károly, Dr. TAKÁTS Alexandra

Tördelőszerkesztő / Layout Editor: Dr. RESPERGER Richárd

ISBN 978-963-334-579-5 (pdf)

DOI: <https://doi.org/10.35511/978-963-334-579-5>

A kötetben közölt tanulmányok tartalmáért kizárólag a szerzők felelősek.
/ The authors are solely responsible for the content of the papers published in this volume.

Creative Commons license: CC BY-NC-SA 4.0 DEED



Nevezd meg! - Ne add el! - Így add tovább! 4.0 Nemzetközi
Attribution-NonCommercial-ShareAlike 4.0 International

SZERVEZŐK

Soproni Egyetem Lámfalussy Sándor Közgazdaságtudományi Kar (SOE LKK),
A Soproni Felsőoktatásért Alapítvány

A konferencia elnöke: Prof. Dr. SZÉLES Zsuzsanna PhD egyetemi tanár, dékán (SOE LKK)

A konferencia Tudományos Bizottsága:

- Prof. Dr. FÁBIÁN Attila PhD egyetemi tanár (SOE LKK); a Soproni Egyetem rektora;
- Prof. Dr. KULCSÁR László CSc professzor emeritus (SOE LKK);
- Prof. Dr. OBÁDOVICS Csilla PhD egyetemi tanár, Doktori Iskola-vezető (SOE LKK);
- Prof. Dr. SZALAY László DSc egyetemi tanár (SOE LKK);
- Prof. Dr. SZÉKELY Csaba DSc professzor emeritus (SOE LKK);
- Prof. Dr. SZÉLES Zsuzsanna PhD egyetemi tanár (SOE LKK);
- Prof. Dr. Clemens JÄGER PhD egyetemi tanár, dékán (FOM Közgazdaságtudományi és Menedzsment Egyetem, Essen, Németország), c. egyetemi tanár (SOE);
- Prof. Dr. Alfreda ŠAPKAUSKIENĖ PhD egyetemi tanár (Vilniusi Egyetem, Közgazdaságtudományi Kar, Litvánia);
- Dr. habil. BARANYI Aranka PhD egyetemi docens (SOE LKK);
- Dr. habil. KOLOSZÁR László PhD egyetemi docens (SOE LKK);
- Dr. habil. PAPP-VÁRY Árpád Ferenc tudományos főmunkatárs (SOE LKK);
- Dr. habil. POGÁTSA Zoltán PhD egyetemi docens (SOE LKK);
- Dr. habil. SZABÓ Zoltán PhD egyetemi docens (SOE LKK);
- Dr. habil. TÓTH Balázs István PhD egyetemi docens, a Lámfalussy Kutatóközpont igazgatója (SOE LKK);
- Dr. habil. Eva JANČÍKOVÁ PhD egyetemi docens (Pozsonyi Közgazdaságtudományi Egyetem, Nemzetközi Kapcsolatok Kar, Szlovákia);
- Dr. Rudolf KUCHARČÍK PhD egyetemi docens, dékán (Pozsonyi Közgazdaságtudományi Egyetem, Nemzetközi Kapcsolatok Kar, Szlovákia).

A konferencia Szervező Bizottsága:

- Dr. MÉSZÁROS Katalin PhD egyetemi docens, dékánhelyettes (SOE LKK)
- PAPPNÉ Dr. VANCSÓ Judit PhD egyetemi docens, intézetigazgató, dékánhelyettes (SOE LKK);
- Dr. HOSCHEK Mónika PhD egyetemi docens, intézetigazgató (SOE LKK);
- Dr. NÉMETH Nikoletta PhD egyetemi docens, intézetigazgató (SOE LKK);
- Dr. BARTÓK István János PhD egyetemi docens (SOE LKK);
- Dr. SZÓKA Károly PhD egyetemi docens (SOE LKK);
- Dr. DIÓSSI Katalin PhD adjunktus (SOE LKK);
- Dr. RESPERGER Richárd PhD adjunktus (SOE LKK).

ORGANIZERS

University of Sopron, Alexandre Lamfalussy Faculty of Economics (SOE LKK),
For the Higher Education in Sopron Foundation

Conference Chairperson: Prof. Dr. Zsuzsanna SZÉLES PhD Professor, Dean (SOE LKK)

Scientific Committee:

- Prof. Dr. Attila FÁBIÁN PhD Professor (SOE LKK), Rector of the University of Sopron;
- Prof. Dr. László KULCSÁR CSc Professor Emeritus (SOE LKK);
- Prof. Dr. Csilla OBÁDOVICS PhD Professor, Head of Doctoral School (SOE LKK);
- Prof. Dr. László SZALAY DSc Professor (SOE LKK);
- Prof. Dr. Csaba SZÉKELY DSc Professor Emeritus (SOE LKK);
- Prof. Dr. Zsuzsanna SZÉLES PhD Professor, Dean (SOE LKK);
- Prof. Dr. Clemens JÄGER PhD Professor, Dean (FOM University of Applied Sciences for Economics and Management, Essen, Germany), Honorary Professor (SOE);
- Prof. Dr. Alfrida ŠAPKAUSKIENĖ PhD Professor (Vilnius University, Faculty of Economics and Business Administration, Lithuania);
- Dr. habil. Aranka BARANYI PhD Associate Professor (SOE LKK);
- Dr. habil. Árpád Ferenc PAPP-VÁRY PhD Senior Research Fellow (SOE LKK);
- Dr. habil. Zoltán POGÁTSA PhD Associate Professor (SOE LKK);
- Dr. habil. Zoltán SZABÓ PhD Associate Professor (SOE LKK);
- Dr. habil. Balázs István TÓTH PhD Associate Professor, Director of the Lamfalussy Research Centre (SOE LKK);
- Dr. habil. Eva JANČÍKOVÁ PhD Associate Professor (University of Economics in Bratislava, Faculty of International Relations, Slovakia);
- Dr. Rudolf KUCHARČÍK PhD Associate Professor, Dean (University of Economics in Bratislava, Faculty of International Relations, Slovakia).

Organizing Committee:

- Dr. Judit PAPPNÉ VANCSÓ PhD Associate Professor, Director of Institute, Vice Dean (SOE LKK);
- Dr. Tamás PIRGER PhD Assistant Professor, Vice Dean (SOE LKK);
- Dr. Mónika HOSCHEK PhD Associate Professor, Director of Institute (SOE LKK);
- Dr. Nikoletta NÉMETH PhD Associate Professor, Director of Institute (SOE LKK);
- Dr. István János BARTÓK PhD Associate Professor (SOE LKK);
- Dr. Gábor KERESZTES PhD Associate Professor, Vice Dean (SOE LKK);
- Dr. habil. László KOLOSZÁR PhD Associate Professor (SOE LKK);
- Dr. Károly SZÓKA PhD Associate Professor (SOE LKK);
- Dr. Katalin DIÓSSI PhD Assistant Professor (SOE LKK);
- Dr. Richárd RESPERGER PhD Assistant Professor (SOE LKK).

TARTALOMJEGYZÉK / CONTENTS

1. szekció: Társadalmi kihívások és társadalmi innovációk

Session 1: Social Challenges and Social Innovations

Társadalmi törésvonalak és reziliencia az egyszülős családok körében BUJDOSÓ-KURUCSÓ Alexandra	12
A 70 az új 60? Kit tartunk idősnek napjainkban? TRUNKOS Ildikó	20
Alternatives, Challenges, and Opportunities in the Automotive Industry of the 21st Century János Pál PÁTZAY – Máté NAGY	29
Informális gazdasági kapcsolatok a vidéki térségekben Magyarországon. Összehasonlító vizsgálat, 1998–2024 KULCSÁR László – David L. BROWN – OBÁDOVICS Csilla	38
A nagy nyelvi modellek kreativitásának kérdései a kreatív problémamegoldás tükrében - Koncepcionális kiindulópontok DROBNY-BURJÁN Andrea	47

2. szekció: Turizmus és marketing, fenntartható turizmus

Session 2: Tourism and Marketing, Sustainable Tourism

Petfluencer marketing: Kisállatok mint véleményvezérek a közösségimédia marketingben – Tika the Iggy kutya influencer és Marta Sierra humán influencer Instagram-aktivitásának összehasonlító tartalomelemzése DINGFELDER Patrícia – PAPP-VÁRY Árpád Ferenc	59
Kötelező láthatóságból stratégiai kommunikáció: a hazai fejlesztési programok kommunikációs csomagjainak összehasonlító elemzése HIDASAI Andrea	69
Az élményalapú fenntartható agroturizmus témában végzett bibliometriai áttekintés Az élményalapú fenntartható agroturizmus témában végzett bibliometriai áttekintés BOGNÁR Éva – HOSCHEK Mónika – DUNAY Anna	82
Sztárfutballisták márkaépítése a közösségi médiában – Kvalitatív vizsgálat a digitális jelenlét, a hitelesség és a piaci érték kapcsolatáról MOLNÁR Dominik – PAPP-VÁRY Árpád Ferenc	94
Egy magyar futballszár és személyes márkájának felemelkedése – Szoboszlai Dominik márkaépítésének elemzése a digitális és sportpiaci térben KORIM Dorina – PAPP-VÁRY Árpád Ferenc	111

3. szekció: Fenntarthatósági átmenet és digitális innovációk

Session 3: Sustainability Transition and Digital Innovations

Adatvezérelt fenntarthatóság: ellátási lánc szimulációs labor a zöld döntés szolgálatában SALUSINSZKY András – BUDAI László	127
Sárvár városi erdeinek klímavédelmi szerepe a fenntarthatósági átmenet tükrében KIRÁLY Éva – BOROVIKCS Attila	138
Digitális fejlesztésekkel megoldható környezeti fenntarthatóságot érintő kihívások a hazai agrárinnovációs ökoszisztémával összefüggésben HOLÁN Balázs – SZÓKA Károly – RADÁCSI László	155
Digitalizációs attitűd vizsgálata egyetemi hallgatók körében KERESZTES Gábor – NÉMETH Nikoletta – MÉSZÁROS Katalin	172

4. szekció: Fenntartható pénzügyek – Fenntartható gazdálkodás

Session 4: Sustainable Finance – Sustainable Management

Az ESG múltja, jelene és jövője a magyarországi vállalatok életében SZABÓ Csaba	186
Zöld szemlélet a Soproni Egyetemen NÉMETH Nikoletta – MÉSZÁROS Katalin	201
A fenntartható közúti áruszállítás járművei: kihívások és lehetőségek EGERVÁRI István	213
A várostervezés új kihívásai OSZVALD Ferenc Nándor	227

5. szekció: Global and Regional Aspects of Sustainable Development

Session 5: Global and Regional Aspects of Sustainable Development

Sociocultural Influences on Green Transition: Community Resilience and the Solar Energy Shift in Lebanon Nadine AL AMINE	241
From Barriers to Action: Individual Responsibility and Solutions for Selective Waste Collection in Western Hungary Boglárka KONKA – Veronika LÁSZLÓ – Andrea Magda NAGY – Stefánia Matild TÖREKI – Zsuzsa DARIDA	254
Digital Twins in Sustainable Supply Chain Management: An Exploratory Cross-Case Analysis Magdalena WITTMANN	266
Bridging the Divide: A Systematic Literature Review of Sustainability Pathways for SMEs in Sub-Saharan Africa Amid Global Sustainability Transitions Eulalia ANG'EDU – Katalin DIÓSSI	278

Intermodal Transport, Sustainability, and Security Challenges in South Africa's Automotive Logistics

Anikó RICHTER – Csaba I. HENCZ 296

6. szekció: Sustainable Economy and Management (személyes)

Session 6: Sustainable Economy and Management (in-person)

Toward Zero Waste: Applying the 9R Framework in Sustainable Event Management

Katalin VIGH – Katalin DIÓSSI 308

Essential Steps in Sustainable Corporate Event Management

Katalin VIGH – Katalin DIÓSSI 318

Exploring the Impact of Mountain Tourism Facilities and Activities on Domestic Tourism Consumption and Sustainability of Local Community Livelihoods Community: A Literature Review

Deborah KANGAI – Árpád Ferenc PAPP-VÁRY – Viktória SZENTE 326

Sustainability by Design: User Experience Strategies in Green Tourism Marketing

Nawres DHOUB – Éva BEDNÁRIK 340

Integrált jelentések a magyarországi tőzsdei kibocsátók körében

BARTÓK István János 353

7. szekció: Sustainable Economic Decisions

Session 7: Sustainable Economic Decisions

Analyst Forecast Properties Around IFRS-Based Consolidation: Coverage, Dispersion, and Bias in Morocco

Saddek BAROUD – Anita TANGL 363

Behavioral Finance for Rational and Sustainable Decision-Making Capital Markets - An Analysis of Investor Behavior Using the Example of Wirecard AG

Mathilda STOCKHAUS – Christian BERNER 378

Designing ESG Reports with Nudges: Integrating Behavioural Insights into CFO-Led Sustainability Reporting

Safaâ HOUNA – Lena Lotta STICKEN – Károly SZÓKA 403

Integrating AI-driven Macroeconomic Forecasting with Exchange Rate Hedging: The Case of Japanese Yen

Avaz MAMMADOV – Kanan MAMMADLI – Károly SZÓKA – Balázs István TÓTH 421

Der Einfluss der deutschen § 6b EStG-Rücklagenbildung im internationalen Rechnungslegungsstandart nach IFRS für eine deutsche Personengesellschaft einer multinationalen Unternehmensgruppe

Linda MATTHES – Katalin DIÓSSI – Zsuzsanna SZÉLES 435

Reconceptualizing Organizational Commitment in the Age of Sustainability: A Reflexive Grounded Theory Perspective on Fragmentation and Complexity in the Public Sector Jessica KULCZYCKI – Katalin DIÓSSI	454
Eine kritische Analyse der Vereinbarkeit zwischen Nachhaltigkeit und KI in Unternehmen André HEISLER – Károly SZÓKA	468
8A. szekció: Fenntarthatósági kihívások és innovatív válaszok <i>Session 8A: Sustainability Challenges and Innovative Responses</i>	
Magyar divatipari designer márkák online- és offline megjelenésének elemzése VIZI Noémi	478
Bizalom és hitelesség az influencerszer-marketingben: digitális kommunikáció a kutyaeledel szektorban CSÓTYA Klára – LUKÁCS Rita – PAPP-VÁRY Árpád Ferenc	492
8B. szekció: Fenntarthatósági kihívások és innovatív válaszok <i>Session 8B: Sustainability Challenges and Innovative Responses</i>	
A mesterséges intelligencia lehetőségei a nyugdíjbiztonság területein SZABÓ Zsolt Mihály	511
Virtuális migráció? A távmunka, mint új dimenzió a fenntartható mobilitásban GAÁL Sándor András – OBÁDOVICS Csilla – RESPERGER Richárd	520
Az egészségműveltség fejlesztése a gyógyszertárakban a fenntarthatóság figyelembevételével PORZSOLT Péter – PAPP-VÁRY Árpád Ferenc	535
9. szekció: Sustainable Economy and Management (online) <i>Session 9: Sustainable Economy and Management (online)</i>	
Hidden Fault Lines in Sustainability Transitions: Silence, Commitment, Citizenship and Machiavellianism Andrea MÁTÉ	547
Investigation of Differences in Labour Productivity Between the Visegrád Group Countries (V4) Compared to Germany and the Impact on Their Workers' Wages Andreas HUTH	567
Sustainable Management in Inpatient Long-Term Care in Germany Through Competence-Based Staffing Rita ZÖLLNER – Silke MAGES	581
Overview of Employment Forms of University Students in the Mirror of Changes in Legislation, with Particular Respect to Dual Training in Hungary Tünde FIERS – Ágnes SIKLÓSI – Krisztina A. SISA	599

10. szekció: Sustainability Challenges and Innovations

Session 10: Sustainability Challenges and Innovations

The Concept of Vulnerable Households in European Energy Policy Ágnes VÁRADI	615
Co-Creation and Personalisation in Autonomous Mobility: A Qualitative Exploration of User Expectations Phillipp NOLL – Nils Andreas EIBER	626
How Do ESG Factors Influence Financial Performance in Leading Sustainable Companies? László Zoltán KUCSÉBER	646
Emotional Artificial Intelligence in Interpersonal Leadership: Technological Implementation and Social Impact Nils Andreas EIBER – Rüdiger GRIMM	655
Regulatory AI as Catalyst: Framework for Sustainable Financial Transformation Alexander Maximilian RÖSER – Cedric BARTELT – Ricky WEIß	678

11. szekció: Poszter szekció

Session 11: Poster Session

Organizational Theory in the Context of Climate Change and Potential Application for the Green Transition of the Iron and Steel Industry Beáta BURÓ	696
Quantitative Easing and Its Effects on Economies: A Systemic Literature Review With a European Focus Magnus RADEMACHER	716
Der Wert von Daten als nachhaltige Ressource: Chancen und Risiken im Kontext von Künstlicher Intelligenz Chantal LEISING	744
Csepreg, a boldog utazó desztinációja Vas vármegyében HORVÁTH Kornélia Zsanett	766
A holland körforgásos gazdaság hatása a holland országimázsra KALCSÚ Zoltán – BEDNÁRIK Éva	782
Dróntechnológia a vasúti infrastruktúra szolgálatában: nemzetközi trendek és a hazai tapasztalatok KOLOSZÁR László – IONESCU Astrid	796

How Do ESG Factors Influence Financial Performance in Leading Sustainable Companies?

Dr. László Zoltán KUCSÉBER PhD¹

Associate Professor

Budapest University of Business and Economics, Faculty of Finance and Accountancy

Abstract:

A key research question concerning the relationship between ESG (Environmental, Social Governance) factors and corporate performance is whether the implementation of environmentally conscious technologies and the transition to cleaner production processes represent merely a corporate response to social pressure, or rather a rational investment that generates measurable and positive effects on firms' financial performance. In this study, I examine the Top 100 companies included in the publicly available sustainability ranking, the Corporate Knights' Global 100, using statistical methods and drawing on approximately 35 financial and non-financial variables across the three ESG dimensions. The sources used in the compilation of the list include annual financial statements as well as sustainability and CSR reports. The purpose of this research is to provide a comprehensive overview of companies that operate at the highest level of sustainability. The empirical analysis of the international sustainability institute's TOP 100 list provides several reasons for optimism: traditionally polluting industries such as chemicals are represented in similar proportions to service sectors, geographical diversity is increasing with the rise of Chinese firms, and the significant number of new entrants reflects a growing corporate commitment to sustainability.

Keywords: ESG, sustainability, Corporate Social Responsibility

JEL Codes: Q010, Q56

1. Introduction

A robust ESG profile (Environment, Social, Governance) encompasses more than merely the utilisation of renewable resources by a company (Szeberényi et al., 2024). Furthermore, it has been demonstrated that this can enhance the company's resilience and its capacity to adapt to the contemporary business environment, which is frequently characterised by abrupt and substantial economic fluctuations (Töre, 2022). Research by Baranyi et al. (2023) also supports the growing recognition among companies of the benefits of sustainable operations, as 60% of surveyed firms consider environmental issues a top priority—not solely because of legal obligations. As demonstrated in the research by Kazak et al. (2024), sustainable companies have been shown to exhibit superior operational efficiency and reduced risk exposure, which can result in enhanced long-term profitability. If a favourable ESG rating is attractive enough to investors and financial markets, it could open doors to more capital for socially responsible companies, while banks might offer them better loan terms. Research on corporate behaviour in the context of sustainability is typically concerned with two overarching concepts: CSR (Corporate Social Responsibility) and ESG. While there are clear points of overlap between the two, this brief study does not attempt to fully distinguish between them. It has been suggested by certain research that the E, S, and G components can be regarded as the three "legs" of CSR. The present study focuses on corporate objectives that extend beyond conventional business goals, examining their significance. The present study specifically explores the impact of these non-traditional objectives on companies' financial performance.

¹ kucseber.laszlo@uni-bge.hu

2. Literature Review

In this section of the article, I reference studies that examine the relationship between companies' ESG performance categories and their financial data and metrics. In order to present a more objective picture, research has been gathered from the United States of America, Europe, and Asia. Friede et al. (2015) conducted a comprehensive review of prior studies on the topic, analysing findings from approximately 2,200 studies. The majority of these studies indicated a positive correlation between pursuing ESG goals and corporate financial performance, with this relationship showing stability over time. As Hamdi et al. (2022) also demonstrated, a positive correlation was identified between Environmental, Social and Governance (ESG) metrics and financial performance. This analysis was conducted using data from 504 US companies over the period from 2000 to 2020. Improved financial performance may encourage shareholders and management to invest more in sustainability efforts, which, in turn, could enhance the company's reputation.

Fain's (2020) findings are consistent with this perspective: a sample of 1,099 companies from the Morgan Stanley Capital International All Country World Index (MSCI ACWI) demonstrated that a higher G-score significantly improved ROS (Return on Sales). Ahmad et al. (2021) explored the impact of ESG on the financial performance of United Kingdom based companies, using a sample of 351 firms from the Financial Times Stock Exchange (FTSE) index between 2002 and 2018. The findings of the study indicated that a superior ESG rating exerted a positive influence on financial performance, although the relationship between ESG performance and financial outcomes was moderated by company size. Nevertheless, an analysis of data from China by Kim and Li (2021) concluded that, while ESG factors have a positive impact on corporate profits, this effect is more pronounced for larger firms. Liu et al. (2022) reported that the E (environmental) factor had a significantly negative effect on the financial performance of 191 companies listed in the Yangtze River Delta between 2015 and 2020. Conversely, the G (governance) factor had a positive effect, whereas the S (social) factor had no significant effect. The researchers also established that ESG performance was associated with financial performance as measured by accounting metrics. However, no correlation was found between ESG performance and market-based financial metrics.

In their 2023 study, Cao and Wirjanto examined a range of methodologies for integrating Environmental, Social and Governance (ESG) factors into the portfolio optimisation process for companies listed on the Dow Jones Index. The authors concluded that thematic investing was the most effective approach, with ESG portfolios performing as well as or better than the overall market. Weston and Nadi (2023) examined the association between CSR and CFP (Corporate Financial Performance) from 2009 to 2019, utilising the iShares MSCI KLD 400 Social Index (developed by KLD Research & Analytics), the iShares Core S&P 500, and the stocks of companies adhering to the Principles for Responsible Investment (PRI). In their regression analysis, the dependent variable defined as returns, with the independent variables comprising the Price-Earnings (P/E) ratio, Return on Equity (ROE), market value and the Beta coefficient. The study's findings indicated that companies adhering to the PRI guidelines exhibited superior performance in comparison to those that did not adhere to these guidelines. Tóth et al. (2021) utilised panel regression methodologies to investigate the correlation between financial stability and ESG performance. Their analysis of 243 stock-listed credit institutions in the EU (European Union) and EFTA (European Free Trade Association) countries found that ESG performance significantly reduced the proportion of non-performing loans, and their model also confirmed the positive effect of regulatory capital.

In the following section, an analysis will be conducted on the role of sustainability lists, with a particular focus on the Corporate Knights list in the context of sustainability research. The Corporate Knights Global 100 is a sustainability ranking that has become a key reference point for evaluating corporate performance. Among neighbouring non-EU countries, it is

noteworthy that, since 2021, the Republic of Serbia has required large companies to produce sustainability reports (Šmitran et al., 2025). It is evident that even within individual economies, there is a discrepancy in the quality of these reports. This assertion is corroborated by Kulcsár (2023), whose research on the ESG reports of 20 companies listed on the Bucharest Stock Exchange lends further support to this hypothesis. The author identified a lack of consistency in ESG metrics and noted the absence of a comparable ESG reporting system, which makes evaluation and comparison difficult.

3. The Database

The database employed in the present research is Corporate Knights TOP 100 Sustainable Companies, a publication issued on an annual basis by the Toronto-based Corporate Knights. It is evident that Corporate Knights also publishes a magazine, entitled Corporate Knights, which is read by hundreds of thousands of business leaders and policymakers. The list has been published for almost twenty years. In the course of the investigation, the following indicators from the database were utilised:

Sustainable revenue derived from products and services that are categorized as “sustainable” according to the Corporate Knights open-source Sustainable Economy Taxonomy, which is informed by a synthesis of, among others, the following sources and best practices:

- Climate Bonds Taxonomy (Climate Bonds Initiative)
- EU Taxonomy for Sustainable Activities
- Sustainability Accounting Standards Board (SASB) reporting standards
- Environmental Goods and Services Sector (Eurostat)
- China Green Bond Endorsed Project Catalogue
- Green Bond Principles
- TCFD recommended climate opportunity metrics
- Other private sector rating agencies with green or sustainability taxonomy
- Industry expert consultation covering all relevant CKPG subsectors with solicited feedback on industry definition of sustainable from leading industry experts and government agencies

Sustainable investment: Percentage of a company’s total investment (Research and Development, Capital expenditures, Acquisitions & Other) directed towards projects/research/companies categorized as “sustainable” according to the Corporate Knights open-source Sustainable Economy Taxonomy.

It can be demonstrated that there is a positive correlation between the value of the next indicators and the environmental friendliness and sustainability of the company's operations. That is to say, the higher the value of the indicator, the more environmentally friendly and sustainable the company's operations are:

Water Productivity: Revenue (converted to USD using purchasing power parity exchange rate) / Water withdrawn.

Waste Productivity: Revenue (converted to USD using purchasing power parity exchange rate) / Total non-recycled waste generated

Energy Productivity: Revenue (converted to USD using purchasing power parity exchange rate) / (Energy use – renewable energy generated by the company)

For the financial analysis the balance sheet and income statement data were collected from the ORBIS Europe website.

4. Results

In the course of my research, I conducted a comprehensive analysis of the companies that were included in the 2023 TOP 100 list. This analysis encompassed both financial and non-financial data. The objective of this study is to provide a comprehensive overview of the most sustainable

companies. With regard to geographical distribution, European companies dominated the list, with Western European and Scandinavian firms leading the way. As shown in *Figure 1*, the second-largest group was North America, comprising the United States of America and Canada. The third-largest group was China. The list was predominantly comprised of financial, services, and trading companies, as these sectors are generally more conducive to sustainability.

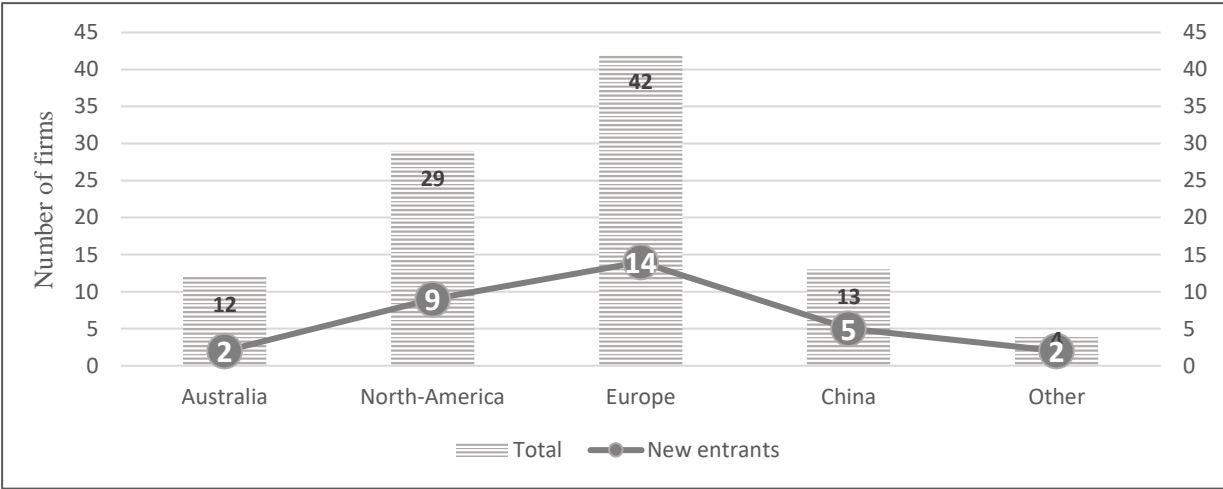


Figure 1: Regional distribution of companies
 Source: Own edited based on Corporate Knights

However, it is encouraging to note that industry and chemicals accounted for almost 20% of the total. The overall picture is marred by the absence of any companies engaged in agricultural activities. The methodology employed in compiling the list is complex, with nearly 90 parameters considered. Due to limitations in scope, the focus was directed towards the two indicators with the highest weights (25% each). The former was termed "sustainable turnover," while the latter was referred to as "sustainable investment". *Table 1* shows the companies with a Sustainable Investment Ratio of 100%. The next part of the analysis focuses on these companies with outstanding values.

Table 1: Sustainable Investment ratio in the TOP 100

2024 Rank	2023 Rank	Company	Sector	Region	Sustainable Revenue Ratio (%)	Sustainable Investment Ratio (%)	CEO to average worker pay ratio	Employee Turnover Ratio	Overall Score
43	-	Li Auto Inc	Consumer Discretionary	China	100.0	100.0	95:1	32.0%	B-
5	-	Nordex SE	Manufacturing	Europe	100.0	100.0	82:1	30.0%	A
24	-	United Utilities Group PLC	Public service	Europe	41.6	100.0	71:1	6.0%	B+
3	2	Vestas Wind Systems A/S	Manufacturing	Europe	100.0	100.0	70:1	15.2%	A
39	-	EDP Renováveis SA	Public service	Europe	100.0	100.0	7:1	13.0%	B
42	64	Yadea Group Holdings Ltd	Consumer Discretionary	China	100.0	100.0	7:1	6.1%	B
2	3	Brambles Ltd	Manufacturing	Australia and North-Asia	100.0	100.0	61:1	30.0%	A
56	-	Rivian Automotive, Inc	Consumer Discretionary	North-America	100.0	100.0	55:1		B-
1	14	Sims Ltd	Chemical industry	Australia and North-Asia	100.0	100.0	36:1	19.0%	A+

2024 Rank	2023 Rank	Company	Sector	Region	Sustainable Revenue Ratio (%)	Sustainable Investment Ratio (%)	CEO to average worker pay ratio	Employee Turnover Ratio	Overall Score
21	51	Giant Manufacturing Co Ltd	Consumer Discretionary	China	100.0	100.0	227:1		B+
28	54	ERG SpA	Public service	Europe	52.2	100.0	22:1	9.0%	B
63	12	Xinyi Solar Holdings Ltd	Information Technology	China	100.0	100.0	213:1	30.0%	C+
30	-	Risen Energy Co Ltd	Information Technology	China	100.0	100.0	21:1		B
10	-	SMA Solar Technology AG	Information Technology	Europe	100.0	100.0	15:1		A-
4	9	Taiwan High Speed Rail Corp	Manufacturing	Asia	100.0	100.0	11:1	4.0%	A
36	1	Radius Recycling	Chemical industry	North-America	95.0	100.0	103:1		B
13	-	Clean Harbors Inc	Manufacturing	North-America	100.0	100.0		32.0%	B+
14	-	Enphase Energy Inc	Information Technology	North-America	100.0	100.0			B+
16	35	SunPower Corp	Manufacturing	North-America	100.0	100.0			B+
25	-	XPeng Inc	Consumer Discretionary	China	100.0	100.0		28.0%	B
33	-	Zhuzhou CRRC Times Electric Co Ltd	Manufacturing	China	100.0	100.0		4.2%	B
40	32	Beijing Enterprises Water Group Ltd	Public service	China	93.8	100.0		13.1%	B
44	69	Maxeon Solar Technologies Ltd	Information Technology	Australia and North-Asia	100.0	100.0			B-
46	86	Tesla Inc	Consumer Discretionary	North-America	100.0	100.0			B-
50	79	NIO Inc	Consumer Discretionary	China	100.0	100.0			B-
34	46	First Solar Inc	Information Technology	North-America	100.0	100.0			B

Source: Own edited based on Corporate Knights

The majority of companies with a turnover deemed to be 90% sustainable were not based in Europe, but in North America and China. This suggests that high sustainable turnover is not a prerequisite for inclusion on the list, given that approximately 40% of the companies on the list had a sustainable turnover of less than 30%. However, it is important to note that the remaining 80 indicators also had to demonstrate satisfactory performance.

From a sectoral perspective, the industry sector demonstrated positive indications, given that attaining sustainability in this domain necessitates considerably greater investments in comparison to, for instance, a communications company. The positive trends observed in the European heavy industry, paper, and chemicals (i.e., energy-intensive) sectors have been corroborated by the research undertaken by Horváth et al. (2023). In addition, an examination was conducted into the proportion of sustainable investments. A total of 26 companies were identified as being in the top 100 for sustainable investment. A more detailed analysis of these companies revealed similar geographic and sectoral distributions to those with sustainable turnover ratios above 90%, as previously discussed.

It is noteworthy that all but four firms with 100% sustainable investment also had 100% sustainable revenue, and all but one were ranked in the top half of the list. Furthermore, the present study concentrated on new entrants to the list. With regard to the sectoral distribution of new entrants, it was noted that there was a high representation of industrial, real estate, and utilities sectors. These sectors are considered to be "inherently disadvantaged" with respect to

sustainability. However, their significant presence is a positive indication, demonstrating that even traditionally challenging sectors can successfully transition to "green" operations. Whilst the number of new companies is indeed impressive, with 11 companies in the top 30 in 2024, it is important to consider the quality criteria that these companies met.

In the final part of my study, I focused on 38 European companies, because this was the largest group on the list. Firstly, I summarized the non-financial characteristics of these companies based on the published data of Corporate Knight's in *Table 2*.

Table 2: Non-financial characteristics of EU companies

Group	Energy Productivity, \$	Water Productivity, \$	Waste Productivity, \$	Sustainable Revenue Ratio, %	Sustainable Investment Ratio, %	CEO to average worker pay ratio, 1:1	Employee Turnover Ratio, %
Listed both year - Average	45 102	28 881	9 892 661	32.31	39.85	62	14
Listed both year - Median	23 469	11 827	2 656 907	26.82	10.04	55	14
New EU - Average	45 295	35 356	10 600 204	47.55	60.74	49	16
New EU - Median	15 043	7 601	1 312 103	39.78	77.53	31	13

Source: Own edited based on Corporate Knights

Based on the average and median values of the Listed both years and new EU company groups, the following key differences can be observed:

- **Energy Productivity:**The two groups have nearly identical average energy productivity (around 45 000 USD), but the median is significantly lower for the New EU group (15 043 USD). This indicates greater variability and the presence of several high outliers.
- **Water Productivity:** The New EU companies show a higher average water productivity (35 356 USD vs. 28 881 USD). However, their median is much lower (7 601 USD), suggesting that a few exceptionally high values drive the average upward.
- **Waste Productivity:**Both average and median waste productivity are higher in the Listed both year group, although both groups show very high average values (9.9M vs. 10.6M USD), again indicating strong outliers.
- **Sustainable Revenue Ratio:**The New EU companies perform clearly better: an average of 47.55% and a median of 39.78%, compared to 32.31% (average) and 26.82% (median) for the Listed both year groups. This suggests that New EU companies generate a larger share of revenue from sustainable sources.
- **Sustainable Investment Ratio:** The difference is even more pronounced here: the New EU companies invest far more heavily in sustainability, with an average of 60.74% and a remarkably high median of 77.53%. In contrast, the Listed both year group reaches only 39.85% on average and a 10.04% median.
- **Chief Executive Officer to Average Worker Pay Ratio:**The New EU companies exhibit a more favorable pay structure: lower CEO-to-worker pay ratios both in average (49 vs. 62) and median terms (31 vs. 55).
- **Employee Turnover Ratio:** Based on averages, turnover is slightly higher in the New EU group (16% vs. 14%), while the median suggests a slightly lower rate (13% vs. 14%).

My second aim was to analyse the financial performance from 2020 to 2023 and compare the results. For ease of analysis, the European companies were divided into two subgroups: those ranked in both 2023 and 2024, and those appearing for the first time in 2024. The results demonstrate that, in addition to favourable sustainability outcomes, traditional financial indicators also reflect the economic health of these companies. To assess profitability, I used ratios

such as ROE (Return on Equity), ROA (Return on Assets), EBIT (Earnings before Interest and Taxes) margin, and profit margin, while other ratios measured indebtedness and liquidity. In terms of sales, both groups showed potential for growth, but the average and median relative changes in the 2023-2024 group were more pronounced, with the exception of 2023. The average and median EBIT margins grew consistently between 2020 and 2022, but companies that were re-ranked experienced a slight 2-3 percentage point decline in EBIT margin, resulting in smaller values compared to the new entrants. This indicates that newly ranked firms showed superior operational efficiency.

Profit margins for both groups improved annually, with the gap between them narrowing relative to EBIT. Enhanced profitability in the "re-ranked" category is due to high debt levels in 2022 and 2023, caused by the pandemic. Liquidity levels stayed the same over the period, with no significant differences between the two groups. The ROE and ROA provide a comprehensive overview of the performance of these companies. The results can be viewed graphically in *Figure 2*, which shows the findings in a visual format. Recent studies show that the Return on Equity (ROE) and the Return on Assets (ROA) have increased for newly ranked firms recently. However, their average and median values are still much lower than those in the re-ranked group are. The findings show that re-ranked companies are financially viable and able to expand in the post-pandemic era. Nevertheless, these companies have a higher reliance on financial instruments like loans and debt, which may limit their growth in the future.

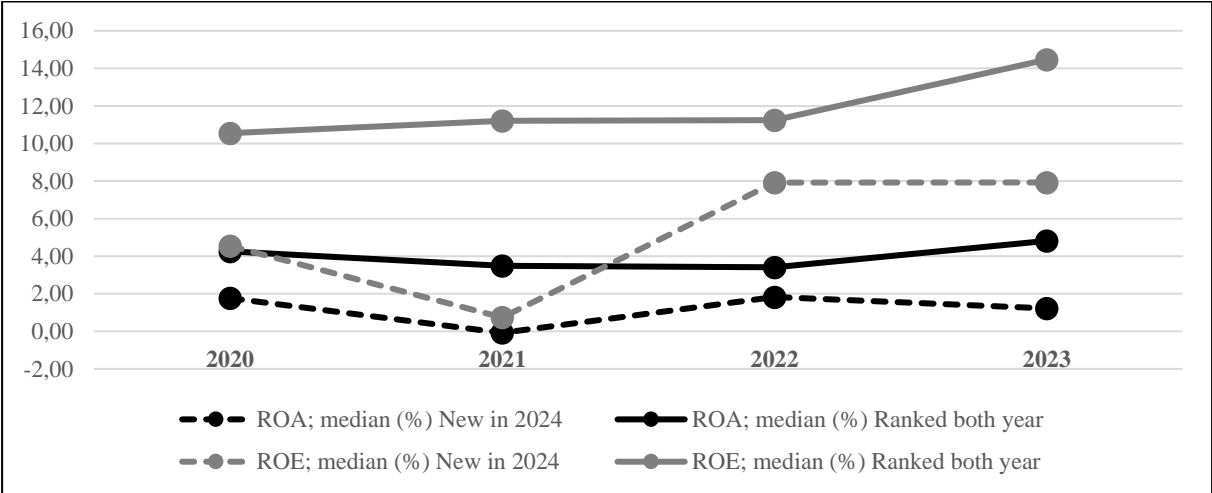


Figure 2: Financial results of investigated European companies
 Source: Own edited based on own calculation

5. Conclusions

The majority of empirical studies demonstrate a direct correlation between Environmental, Social and Governance (ESG) factors and accounting-based corporate financial performance indicators. Nevertheless, the relationship between ESG and market price-based indicators, as well as investor decisions, remains ambiguous in several studies. Whilst the present study is unable to refer to additional research, the findings previously cited are consistent with those of Whelan et al. (2021), who analysed over 1,000 studies conducted since 2015. There is a consensus among researchers that strong corporate ESG management generally improves financial performance. This is encouraging, as it suggests that a transition to clean technologies does not result in poorer financial outcomes.

Nevertheless, the sluggish rate of transition to green technologies remains a matter of concern, as results to date have been inadequate in halting environmental degradation. In the empirical part of my work, I examined the TOP 100 list from an international sustainability research institute. The results of the study offer several reasons for optimism. Firstly, the list includes traditionally polluting industries, such as chemicals in proportions comparable to those of the service sectors. Secondly, there is growing geographical diversity with the rise of Chinese firms. The substantial presence of new entrants also signifies a growing commitment to sustainability among companies, thereby expanding the pool of key players in the sustainable economy.

While financial indicators suggest that sustainability is not incompatible with profitability and efficiency, it may negatively affect indebtedness, an area that requires further research.

References

- Ahmad, N., Mobarek, A., & Roni, N. N. (2021). Revisiting the impact of ESG on the financial performance of FTSE350 UK firms: Static and dynamic panel data analysis. *Cogent Business & Management*, 8(1), 1900500. <https://doi.org/10.1080/23311975.2021.1900500>
- Baranyi, A., Bélyácz, I., Csernák, J., & Széles, Zs. (2023). A nagy- és középvállalatok energiastratégiájának változása piaci kényszerhelyzetben. *Statisztikai Szemle*, 101(12), 1101–1126. <https://doi.org/10.20311/stat2023.11.hu1101>
- Cao, H., & Wirjanto, T. S. (2023). ESG information integration into portfolio optimisation. *Journal of Risk Management in Financial Institutions*, 16(2), 158–179. <https://doi.org/10.69554/ZFJU5571>
- Fain, M. (2020). The short-term effects of corporate social performance on financial profitability. *Köz-gazdaság*, 15(2), 163–179. <https://doi.org/10.14267/RETP2020.02.20>
- Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: Aggregated evidence from more than 2,000 empirical studies. *Journal of Sustainable Finance & Investment*, 5(4), 210–233. <https://doi.org/10.1080/20430795.2015.1118917>
- Hamdi, K., Guenich, H., & Ben Saada, M. (2022). Does corporate financial performance promote ESG? Evidence from US firms. *Cogent Business & Management*, 9(1), 2154053. <https://doi.org/10.1080/23311975.2022.2154053>
- Horváth, Á., Takácsné Papp, A., Lipták, K., Musinszki, Z., & Szűcsné Markovics, K. (2023). Climate and energy issues of energy-intensive sectors. *Amfiteatru Economic*, 25(64), 813–829. <https://doi.org/10.24818/EA/2023/64/813>
- Kazak, H., Çiftçi, T. E., Akcan, A. T., & Özer, E. (2024). Is taxation a curse or a blessing? The case of Türkiye. *Humanities and Social Sciences Communications*, 11, 1432. <https://doi.org/10.1057/s41599-024-03942-1>

- Kim, S., & Li, Z. (2021). Understanding the impact of ESG practices in corporate finance. *Sustainability*, *13*, 3746. <https://doi.org/10.3390/su13073746>
- Kulcsár, E. (2023). A fenntarthatósági jelentéstétel gyakorlatának vizsgálata. *Economica*, *14*(3-4), 43–52. <https://doi.org/10.47282/economica/2023/14/3-4/13553>
- Liu, H., Wu, K., & Zhou, Q. (2022). Whether and how ESG impacts corporate financial performance in the Yangtze River Delta of China. *Sustainability*, *14*, 16584. <https://doi.org/10.3390/su142416584>
- Šmitran, B., Jovanović, Z., Čavlin, M., Dmitrović, V., & Vukmirović, J. (2025). An analysis of the influence of reputation on the financial sustainability and competitiveness of dental institutions. *Journal of Agronomy, Technology and Engineering Management*, *8*(3), 1573–1584. <https://doi.org/10.55817/QQOH9685>
- Szeberényi, A., Fűrész, Á., & Rokicki, T. (2024). Renewable energy in Hungary: Awareness, challenges, and opportunities. In J. Belak & Z. Nedelko (Eds.), *8th FEB International Scientific Conference: Challenges in the Turbulent Economic Environment and Organizations' Sustainable Development* (pp. 509–518). University of Maribor Press. <https://doi.org/10.18690/um.epf.5.2024.49>
- Töre, İ. (2022). Corporate governance for sustainability: The necessary reform of Turkish commercial law. *Yeditepe Üniversitesi Hukuk Fakültesi Dergisi*, *19*(2), 991–1022. <https://izlik.org/JA93YD35BC>
- Tóth, B., Lippai-Makra, E., Szládek, D., & Kiss, G. D. (2021). Az ESG-információk hozzájárulása az európai bankok pénzügyi stabilitásához. *Pénzügyi Szemle*, *66*(3), 440–461. https://doi.org/10.35551/PSZ_2021_3_7
- Weston, P., & Nnadi, M. (2023). Evaluation of strategic and financial variables of corporate sustainability and ESG policies on corporate financial performance. *Journal of Sustainable Finance & Investment*, *13*(2), 1058–1074. <https://doi.org/10.1080/20430795.2021.1883984>
- Whelan, T., Atz, U., Van Holt, T., & Clark, C. (2021). *ESG and financial performance: Uncovering the relationship by aggregating evidence from over 1,000 studies published between 2015 and 2020*. NYU Stern Center for Sustainable Business. https://www.stern.nyu.edu/sites/default/files/assets/documents/NYU-RAM_ESG-Paper_2021.pdf

Web resources were last accessed on 31 March 2026.