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Institutional and Entrepreneurial Drivers of Small and Medium-Sized Enterprises' Circular Economy Practices in Central and Eastern Europe and the Western Balkans

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Abstract

This paper examines the influence of institutional quality, stakeholder networks, entrepreneurial ecosystems, and policies on the adoption of circular economy practices by SMEs in twelve Central–Eastern European and Western Balkan countries. Using the Flash Eurobarometer 549 data, we first cluster countries by the level of circular economy adoption and find that they are highly interdependent. We apply cross-validated LASSO regression to identify two circular economy practices with the highest leverage (minimizing waste and saving materials). We also show that EU membership benefits appear when national administrations can effectively absorb and deploy EU incentives, helping firms transition from basic resource efficiency towards more advanced circular strategies. A two-pillar policy agenda is recommended: building targeted capability bundles inside firms (green-skills training and support for eco-design and production) and strengthening institutions and entrepreneurial ecosystems.

Keywords: circular economy; green transition; small and medium-sized enterprises (SMEs); Central and Eastern Europe; Balkans; resource efficiency; sustainability

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1. Introduction

The circular economy (CE) has moved to the center of sustainability debates in both business and public policy as linear models of mass production and consumption have given way to approaches that conserve resources, extend product life, reuse and recycle materials, and avoid disposal wherever possible [1,2].

A key role in the transition toward a CE belongs to small and medium-sized enterprises (SMEs), due to their significant share in European economies and their cumulative use of natural resources [3,4]. However, SMEs often lack sufficient knowledge or support to implement CE practices, especially in post-transitional economies, such as those in Central and Eastern Europe (CEE) and the Western Balkans [5]. The socio-economic environments in these regions also lack financial support for the green transition, as well as inconsistent legal and regulatory frameworks.

Unfortunately, the existing literature still does not fully explain which CE practices are most important, nor does it clarify the role of domestic institutions and stakeholders in motivating SMEs to adopt CE practices. Therefore, (i) we address the literature gap concerning the lack of empirical evaluation of differences between EU and non-EU SMEs within the same region and (ii) use the lens of institutional economics to explain these

differences. We analyze twelve Central and Eastern European (CEE) and Western Balkan (WB) countries, integrating institutional and entrepreneurial lenses, and use a cross-validated LASSO approach to identify the strongest CE practice drivers under differing governance regimes.

We are especially interested if European initiatives, belonging to the EU's green transition framework, help the adoption of regional SMEs' green practices [6]. Generally, EU member countries have more developed public policies and more sophisticated entrepreneurial ecosystems, as well as more stringent environmental regulations, which help SMEs achieve eco-innovation [7]. However, since national entrepreneurship support policies still prevail over the EU policy recommendations, national and regional policies, networks, and entrepreneurial ecosystems continue to have a significant influence on achieving the green transition [8]. Therefore, we formulate two research questions (RQs):

RQ1: *Which circular economy practices are the strongest predictors of SME eco-performance in the CEE and WB regions?*

RQ2: *Is there a relationship between EU membership and the engagement of national SMEs in the circular economy?*

We believe that the paper contributes to circular economy theory by analyzing EU conditionality and the role of local institutions in improving the acceptance of CE practices in the SME sector.

The paper is structured as follows. The following section reviews the extant literature. Section 3 describes the data and statistical methods. Section 4 presents the empirical results. Section 5 discusses these findings through three themes. Section 6 concludes the paper, discussing the limitations of the current paper and future research tasks.

2. Theoretical Background

2.1. Entrepreneurship and Circular Economy Practices in SMEs

The creative and innovative entrepreneurial spirit is expected to help SME founders and managers adapt to CE requirements and related EU green transition principles more easily than those of large corporations [3]. SMEs often start implementing CE practices by introducing 'practical', resource-saving initiatives, which include saving energy, recycling materials, and reusing used products. Resource efficiency is, tipically, followed by eco-design and new CE business models. Therefore, activities focused on resource efficiency need to be followed by a more systemic and comprehensive approach [4,5], which aims to design sustainable and reusable products with longer lifecycles. It may also focus on establishing new forms of supply chains, creating new business models (e.g., renting products instead of owning them), or partnerships centered on the sharing of natural resources. Since entrepreneurs tend to lower costs and recognize opportunities to create new value organically, these opportunities are often created without any specific government support [6–8]. Still, many SMEs have limited access to finance or advanced technology [7], especially in post-transitional regions, unlike those located in more developed countries [9,10].

There are multiple opportunities for eco-innovation within this comprehensive approach. For example, designing user products with longer lifecycles can simultaneously reduce company costs, lower carbon footprint, and create a differentiation-based sustainable advantage, which targets the growing market segments of environmentally conscious customers [2]. The eco-differentiation practices might include green sourcing of materials and managing the supply chain, green production, and managing the recycling of products at the end of their lifecycle [11,12]. Thus, European SMEs might not only contribute to environmental sustainability but also create innovative forms of competitive advantage in the era of scarce and expensive natural resources [1,13].

Entrepreneurial capabilities, which include risk-taking, recognition of market opportunities, and strategic flexibility, can significantly contribute to overcoming these barriers [14–16]. Provided that contemporary consumers recognize and reward eco-friendly products and services, the recognition and successful pursuit of green business ideas can lead to higher levels of profit and a sustainable competitive advantage based on eco-friendly differentiation. Mobilization of resources, needed to adopt the CE practices, is also based on the entrepreneurs' personality traits, and their usage of personal networks [3,5].

When conditions are uncertain, entrepreneurs work with the resources they already have. They combine close insight into customer needs with existing supplier relationships, technical expertise, and product design skills to seize new opportunities and adjust operations quickly [14,17]. This adaptive approach may be less systematic, but it is especially valuable in post-transitional economies, where formal support systems are often inappropriate and institutional stability is still developing.

Regardless of the characteristics of the business environment, entrepreneurs focused on green business ideas and models can use available resources, including micro-funding, as well as informal cooperation with local civil society organizations and institutions of higher education. These initial activities can be further developed to create circular products, business processes, and practices, ultimately leading to more comprehensive and systematic eco-friendly approaches [13,17].

Entrepreneurial ecosystems can help entrepreneurs identify green business ideas and models, find green market opportunities, exchange ideas concerning eco-innovation, and obtain support from funders and government [17,18]. Interactions among ecosystem actors and the support available through entrepreneurial infrastructure, including incubators and entrepreneurial university programs, can help start-up entrepreneurs develop the competencies required for eco-friendly product design, planning, and managing product lifecycles, among other skills [19].

Issues such as high levels of market uncertainty, technology costs, and the willingness of customers to respond to green market offers still represent significant challenges for SMEs' owners and managers looking to take the first step toward adopting the green transition and CE principles [14]. Support from EU policies and EU funding can help to address these challenges to CE development [1,5].

2.2. Formal Institutions, EU Conditionality, and Policy Transfer

EU membership shapes outcomes through more than just EU-level rules; it also determines how each country builds its laws and institutions. The EU-driven digital transition offers SMEs powerful tools, including real-time data, online platforms, and streamlined processes, that can improve SME efficiency and accelerate their acceptance of CE practices [2,20].

At the same time, the EU "Closing the Loop" Action Plan sets clear CE targets, timelines, and funding opportunities [12]. However, the EU initiatives deliver tangible results only when national administrations can translate them into projects and public services, which is already visible in the differing recycling rates across the EU [21]. However, this is not an easy task for countries with a post-socialist administrative legacy [22,23].

The extant theory suggests that SMEs need more than isolated incentives. They require robust institutions and funding mechanisms, as well as entrepreneurial infrastructure that supports both the digital and green transitions.

2.3. Informal Institutions, Trust, and Stakeholder Collaboration

According to institutional theory, company behavior is influenced by both institutional arrangements and cultural patterns [10,21]. Beyond formal regulations and institutions,

trust and cooperation shape the nature of EU conditionality in individual member states. In low-trust environments, there is a lack of substantial behavioral changes, and compliance is more formal and symbolic [10]. Therefore, in this section, we examine the role of behavioral and social CE drivers.

From a sustainability perspective, national EU membership offers higher environmental standards and more effective oversight implementation. Therefore, SME owners and managers are highly motivated to invest in green product design and production processes, which are supported by EU funding, national tax breaks, and other policy tools and approaches [13,19,20]. SMEs may find this form of support especially valuable, as it helps with the initial lack of capital, human resources, and competencies, as well as other factors, required for beginning a journey toward the circular economy.

On the other hand, systematic enforcement of environmental standards and high penalties make eco-innovation an attractive option for companies and investors, who can use support from the public sector to start new, eco-friendly entrepreneurial ventures or transform their companies and invest in green technologies, products, employee training, and other relevant resources [10,11]. These incentives often do not exist in non-EU countries, where contributions to the local and national economy are often considered more important than environmentally unfriendly business practices.

Therefore, companies are more likely to postpone major sustainability projects and focus on short-term profits instead [3,11]. In this context, the role of the EU is focused on providing "carrots and sticks" to encourage entrepreneurs and managers to adopt green business practices and those of the circular economy.

However, the quality of local institutions still counts, as EU institutions can only provide a general framework for adopting the CE and the green transition concept. Individual member states have considerable flexibility in implementing EU directives, planning the use of EU funds, and creating their legislation, entrepreneurship support policies, and infrastructure, as well as designing entrepreneurial ecosystems [7]. Countries with fewer administrative bottlenecks and better infrastructures for resource conservation and recycling may have a better starting point for leveraging the advantages of EU membership. However, the ultimate success of SME adoption of environmental policies is shaped by the stability, coherence, and long-term outlook of their public policies and infrastructures, which lead to different outcomes in CE performance [21,24].

Many drivers of the CE and green transition are "soft", based on public involvement, collaborative culture, and cooperation, and rely on the networking of SMEs with other social actors (stakeholders) through incubators, accelerators, universities, and other ecosystem stakeholders, as proposed by the models of entrepreneurial ecosystems [17].

The stakeholder viewpoint is highly relevant for the CE, since only cooperation among supply chain members enables contemporary businesses to create truly sustainable products and business processes in the highly interconnected global economy. Other partnerships, spanning the commercial sector and connecting companies to nonprofits and the public sector, make it possible to build trust and shared activities, aiming to improve the length of the product lifecycle, collect and recycle discarded materials and products, save energy, and perform other activities implied by the concepts of the CE and the EU green transition [3,15].

SMEs often begin adopting green practices in response to mounting stakeholder pressure. In addition to end customers, who might demand more sustainable products and practices, such initiatives in SMEs might be imposed by their corporations, implementing the sustainability requirements across their supply chains, or investors, who increasingly apply the ESG (Environmental, Social, and Governance) principles of socially and environmentally responsible investing. Once stakeholder pressure becomes consistent, the

adoption of green business practices is perceived as a competitive necessity [3,10] rather than a "nice-to-have" feature.

Collaboration with universities, nonprofits, and government bodies—from local authorities to EU institutions—helps SMEs secure financing and skills for designing, producing, and marketing greener products, as well as for pursuing eco-innovation [13,19,25]. In Western and Northern Europe, as well as in the United States, such collective action is well established: environmentally responsible practices generate system-wide benefits that spread along supply chains and across entrepreneurial ecosystems [10,11]. These synergies offer clear models to emulate, encouraging new entrepreneurs and managers to adopt circular economy practices and scale them up [15,24].

3. Materials and Methods

3.1. Data Source and Country Sample

We used the Flash Eurobarometer 549: "SMEs, Start-ups and the Circular Economy" (fieldwork: March–April 2022), which surveys firm-level circular economy actions across the EU-27 and neighboring states. From this dataset, we retained data for twelve countries in the CEE and WB regions, namely, Bulgaria, the Czech Republic, Croatia, Hungary, Poland, Romania, Slovakia, and Slovenia (EU member states), as well as Albania, Montenegro, North Macedonia, and Serbia (non-EU countries).

3.2. Construction of Indicators

Nine items from the original dataset concerning the implementation of selected CE practices (saving water, saving energy, predominantly using renewables, saving materials, switching to greener suppliers, minimizing waste, selling residues to another company, recycling internally, and eco-design) express the weighted percentages of SME respondents. We used normalized means (z-means) of the nine original indicators to calculate the national SME "Green Score" representing SME eco-performance.

3.3. Statistical Methods

Following partly the methodological approach of Mazur-Wierzbicka [23], we first applied k-means clustering to group the twelve countries by the national SME eco-performance scores. We further conducted a Pearson correlation analysis to understand the relationships among the individual components of the composite eco-performance indicator. Strong correlations suggest high levels of interconnectedness among resource-efficiency activities.

The VIFs (variance inflation factors) all exceeded the conventional threshold of ten and thus called for an alternative to conventional OLS regression. We considered several options, including ElasticNet and pure LASSO techniques.

As we aimed to identify the CE practices with the highest relevance and not just retain a block of highly correlated indicators, we used a pure LASSO approach. LASSO penalization drove the "saving water" indicator to zero, which showed that it did not add additional explanatory power. Thus, we arrived at a simple, policy-friendly exploratory model which highlights the most influential CE actions across the analyzed regions.

4. Results

4.1. SME Eco-Performance Country Clustering

First, we standardized each green-practice indicator to z-scores to remove scale effects and place all variables on a standard metric (mean = 0, SD = 1). We then averaged these to form a national GreenScore and applied k-means clustering, which identified three country groups, following extant CE studies [23]. The grouping of countries into three clusters (see Table 1) follows the expectations based on the EU accession of the countries in the study.

Non-EU countries, and those included in the later waves of EU accession, as a rule, do not belong to the high-performing group, except for Romania.

Table 1. Composite "Green Scores" for country clusters.

Cluster	N	Min.	Max.	Mean	Std. Dev.
Cluster 1 (Low Performers)	2	−1.59	−1.45	−1.5196	0.09658
Cluster 2 (Moderate Performers)	6	−0.94	0.25	−0.1125	0.46802
Cluster 3 (High Performers)	4	0.58	1.51	0.9285	0.42204

Table 2 summarizes the standardized z-scores for all countries and each cluster across the observed circular economy practices.

Table 2. Standardized z-scores for circular economy practices in selected countries.

Indicator	Cluster 1	Cluster 2	Cluster 3
Weighted no. of SMEs	−2.06683	0.28456	0.60657
Saving water	−1.42234	−0.21114	1.02788
Saving energy	−1.64359	−0.08559	0.95018
Using predominantly renewable energy	−1.40135	0.05021	0.62536
Saving materials	−1.61708	−0.14377	1.02420
Switching to greener suppliers of materials	−1.35546	−0.26783	1.07948
Minimizing waste	−1.57726	−0.09190	0.92649
Selling residues/waste to another company	−1.68983	0.02658	0.80504
Recycling (reusing material/waste internally)	−1.51166	−0.21650	1.08057
Designing maintainable/reusable products	−1.30278	−0.19155	0.93871

The cluster results reveal a clear distinction between EU and non-EU countries, with EU members generally performing better. There are significant positive relationships among practices such as saving water, saving energy, and minimizing waste—progress in one tends to go hand in hand with gains in the others. By contrast, sustainable product design is more challenging to advance and typically requires specialized knowledge and support from the surrounding entrepreneurial infrastructure and ecosystems.

4.2. Correlation Analysis

Pearson correlations (Table 3) are strong and positive across most indicators, with coefficients from 0.7 to 0.97. The tight links among the core resource-efficiency measures (water, energy, and materials) indicate that once SMEs start improving in one area, they often upgrade several practices together. Eco-design—designing products for maintenance, repair, or reuse—also correlates positively with other actions, but somewhat less strongly, consistent with its higher capability requirements. These results suggest that while basic resource-efficiency measures are highly interconnected, advancing to more sophisticated circular strategies, such as product eco-design, requires support from specialized knowledge, entrepreneurial support institutions, and ecosystems.

Table 3. Correlations among circular economy practices.

	Saving Water	Saving Energy	Using Predominantly Renewable Energy	Saving Materials	Switching to Greener Suppliers of Materials	Minimizing Waste	Selling Residues and Waste to Another Company	Recycling by Reusing Material or Waste Within the Company	Designing Products That Are Easier to Maintain, Repair, or Reuse
Saving water	1	0.974 **	0.719 **	0.973 **	0.910 **	0.948 **	0.791 **	0.888 **	0.763 **
Saving energy		1	0.813 **	0.983 **	0.895 **	0.959 **	0.852 **	0.902 **	0.781 **
Using predominantly renewable energy			1	0.758 **	0.724 **	0.805 **	0.692 *	0.752 **	0.709 **
Saving materials				1	0.923 **	0.973 **	0.887 **	0.946 **	0.835 **
Switching to greener suppliers of materials					1	0.929 **	0.830 **	0.926 **	0.923 **
Minimizing waste						1	0.882 **	0.946 **	0.890 **
Selling residues and waste to another company							1	0.839 **	0.878 **
Recycling by reusing material or waste within the company								1	0.902 **
Designing products that are easier to maintain, repair, or reuse									1

Note: **. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

4.3. LASSO Regression

We wanted to identify the most influential practices rather than retain correlated blocks. Therefore, we estimated a pure LASSO model ($\alpha = 1$) using the R glmnet package. Ten-fold cross-validation yielded an optimal penalty parameter of λ_{min}, which minimized the mean-squared error (Figure 1). At this value of λ, the model shrinks the water-saving indicator to exactly zero, effectively excluding it from the predictors. Such a result suggests that, likely due to the widespread implementation across the analyzed countries, the "saving water" indicator may not have sufficient predictive power.

Table 4 summarizes the LASSO-selected predictors and their standardized coefficients at the cross-validated minimum penalty (λ_{min}). After shrinking the water-saving indicator to zero, eight core circular economy practices with non-zero β-weights were retained in the model. The obtained indicators show the influence on the country's Green Score, measured in units of standard deviation. Minimizing waste ($\beta = 0.1998$) emerges as the strongest predictor of a firm's overall circular economy engagement, followed by saving materials ($\beta = 0.1548$) and switching to greener suppliers ($\beta = 0.1536$). Those indicators are followed by moderate effects, as shown by the practices of saving energy, using renewable energy, selling residues, and recycling through *reuse* ($\beta \approx 0.08$–0.13).

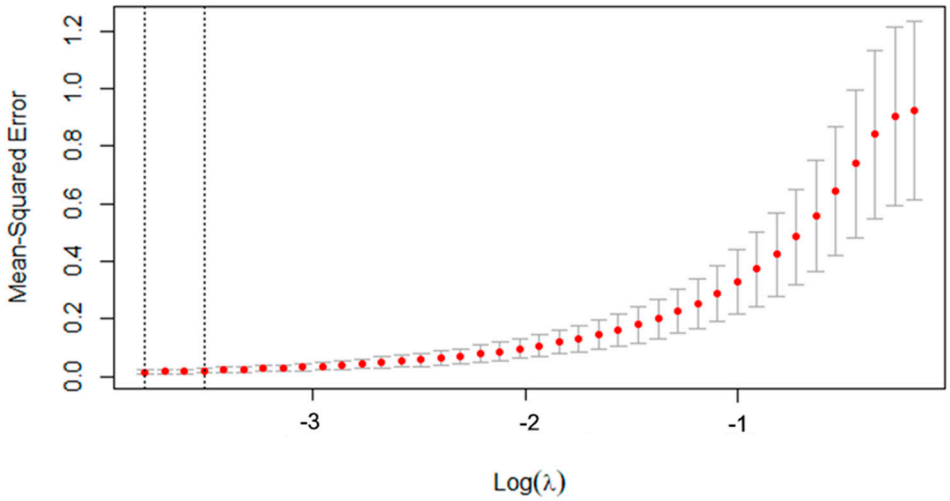


Figure 1. Cross-validated MSE plotted against λ. Note: The left dashed line marks λ_{min}; the right dashed line marks the 1-standard-error rule.

Table 4. LASSO coefficients at λ_{min}.

Predictor	Standardized β
(Intercept)	0.0000
Saving water	0.0000
Saving energy	0.1300
Using predominantly renewable energy	0.0844
Saving materials	0.1548
Switching to greener suppliers of materials	0.1536
Minimizing waste	0.1998
Selling residues and waste to another company	0.0852
Recycling by reusing materials or waste within the company	0.0861
Designing products that are easier to maintain, repair, or reuse	0.0662

Note: All coefficients are in units of standard-deviation change in the composite Green Score per one standard-deviation increase in the predictor.

The small sample size (N = 12 countries) limits the statistical power of the regression analysis. Since we cannot eliminate the sampling risk, the presented empirical results should be interpreted as indicative patterns that require confirmation with firm-level or longitudinal data.

5. Discussion

5.1. Institutional Absorption Capacity in EU and Non-EU Countries

Because our evidence is exploratory and country-level (N = 12), the following implications should be read as indicative patterns rather than firm-level prescriptions. Nevertheless, our analysis strongly supports the idea that institutional stability and development are primary drivers motivating SMEs to participate in the circular economy. EU frameworks enhance SME eco-performance only where domestic governance and administrative capacity can effectively absorb and translate EU rules and funds into action.

Although it acceded to the EU relatively late (in 2007), Romania's SMEs have a high level of eco-performance. Several policy examples explain Romania's success. For instance, the Ministry of Investments and European Projects launched the "Investments for Sustainable SME Growth" (Circular Economy) grant in 2025. They allocated EUR 30 million in the North Romanian region for SMEs' investments in circular processes, waste minimization

equipment, and eco-designed products [26]. In addition, the National Circular Economy Strategy and Action Plan (approved in 2023) explicitly requires companies, especially those receiving EU funding, to integrate eco-design criteria into new products and processes [27]. Together, these instruments address two significant CE activities identified by our LASSO results—waste reduction and material efficiency.

On the other hand, Bulgaria has acceded in the same EU enlargement wave, but has significantly lower SME eco-performance scores. This suggests that EU institutional and funding frameworks create incentives and disincentives that can increase the adoption of circular practices only where domestic governance and institutions have the relevant absorption capacity [21].

Slovenia, although possessing high CE ambitions, still falls in the moderate cluster, which shows that an early EU accession does not automatically translate to a high SME eco-performance. The official policy report, assessing the state of CE in Slovenia [28], finds multiple obstacles, including weak coordination among government departments, inconsistent economic policies, discrepancies in municipal infrastructure, and limited access to specialized finance for SMEs.

The contrast between Romania's success and Bulgaria's lag reveals that effective national public policy and institutional development are key drivers of SME efficiency in adopting and implementing the principles of the circular economy, regardless of broader regional trends and shared socio-economic circumstances [24].

5.2. Circular Economy Actions and Spillovers

The very high correlations show that SMEs tend to adopt efficiency actions in packages (bundles). The "saving water" practice was penalized to zero by pure LASSO, suggesting this is a nearly universal practice, without sufficient variance to improve the model fit.

These results suggest that once an SME starts engaging with green economy initiatives, it is relatively easy to achieve synergistic results, as improvements in one area often spill over into others. The spillovers also depend on knowledge-sharing platforms, not just regulation, as well as industrial symbiosis and stakeholder co-creation [25,29]. On the other hand, more complex and comprehensive eco-focused activities still require reinforcement through support for public sector institutions and entrepreneurial ecosystems in order to scale from resource-saving actions to more advanced CE strategies [21,24].

5.3. Financial Support, Targeted Incentives, and Entrepreneurial Ecosystems

From an entrepreneurship perspective, it is not difficult to explain why some SMEs' owners and managers address the sustainability challenge. There are multiple "soft" factors, including regulatory frameworks and innovation systems, that inspire and support connections and interactions among stakeholders in entrepreneurial ecosystems. Even if systemic changes cannot be implemented, SME founders and managers may be able to utilize ad hoc approaches to identify opportunities created by institutional support and EU funding, which are available for the dual digital and green economic transition.

For the public policy community, the institutional environment and its development are important, as they create a larger framework that both directs and limits the engagement of entrepreneurs with circular economy and sustainability practices, aligning with previous research on eco-innovation [11]. The limitations of national policy and business environments determine the functioning of entrepreneurial ecosystems and their efficiency. Policymakers might wish to consider a two-step approach, starting with funding and support for developing the skills and competencies of SMEs, which aim to make the first step toward crossing the critical threshold(s) of CE practices. These thresholds need to be identified by future research. In the second step, SMEs engaged in CE actions should

provide comprehensive support packages to promote eco-innovation and other advanced CE practices. The effectiveness of this step is primarily defined by institutional quality and its alignment with EU policies and practices.

Along the lines of the two-step policy intervention(s), countries with the lowest SME eco-performance score should consider voucher schemes, supporting resource-efficiency audits. This intervention could help identify areas for further CE engagement and prepare small investment plans. Countries with moderate levels of SME eco-performance might consider public calls for SME resource-efficiency grants, followed by voucher schemes.

Advanced countries should scale their efforts from supporting single SMEs toward developing a regional entrepreneurial system infrastructure. The regional CE hubs, located at entrepreneurship development agencies or universities, might provide networking and support for regional CE stakeholders, provide financial support and administer regional grants, and serve as regional policy advisers.

6. Conclusions

The main theoretical contribution of this study lies in (a) isolating the most influential CE actions for regional SMEs and (b) empirically linking these actions to institutional absorptive capacity across EU and non-EU countries in the region.

The empirical results reveal a divide across regional lines regarding SMEs' capacity to engage in the EU-mandated green economic transition. We have shown the existence of two groups of factors: the adoption of green (circular economy) practice bundles and improving the national institutional environment, which proves to be highly conditional and dependent on the EU context. The following conclusions can be proposed:

- The case of Romania demonstrates that robust SME policies and institutions, combined with the capacity to absorb EU funds, lead to high levels of eco-performance and eco-innovation. Therefore, countries in the analyzed regions do not need to be restrained by their (post-)socialist legacies.
- CE actions, focused on resource efficiency, are important, especially minimizing waste and saving materials. However, they represent the first step toward the more advanced actions (designing green products and green production processes).
- While low-performing countries should focus their policies on the most impactful resource-efficiency actions and benchmarking against more efficient countries, moderate-performing countries need to address gaps in institutional development and the functioning of entrepreneurial infrastructure. High performers might wish to scale their successful experience in the SME sector and apply it to other sectors of the national economy, especially when there is an opportunity to merge the digital economy initiatives with CE practices [30].

This study is limited by the use of cross-sectional country-level data (N = 12). Future research should also include firm panels or use multi-year Eurobarometer data. In addition, heterogeneity within the analyzed countries should be captured by using enterprise-level indicators and applying more complex measures of advanced CE practices in SMEs. Future research in this area might also include additional methodological approaches, including longitudinal studies to track the evolution of circular practices over time, as well as qualitative case studies to provide a deeper analysis of the roles of institutional, stakeholder, and entrepreneurial factors. This will be especially significant for the analysis of non-EU countries to see if they use the opportunities provided by EU accession and neighborhood initiatives.

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