

Effects of Deposit-Refund Systems and Recycling Rates on the Mixed Municipal Waste Composition: A Comparative Panel Analysis of Four European Union Countries (2011–2021)

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KEYWORDS: *deposit refund system, municipal waste, circular economy, recycling, economic indicators*

ABSTRACT – This paper examines the influence of economic indicators – GDP, inflation, and recycling rate – on the composition of mixed municipal waste and the effectiveness of deposit refund systems (DRS) across EU member states. The comparative analysis and econometric modelling reveal that higher recycling rates significantly reduce the share of plastics, metals, and glass in mixed waste. Countries implementing DRS demonstrate a more effective waste separation and higher recycling performance. Regression results indicate that the recycling rate is the dominant determinant of the mixed waste reduction, while GDP and inflation show no statistically significant direct effects.

Izvorni znanstveni članek

UDK 338:502+628.4(4-6EU)

KLJUČNE BESEDE: *kavcijski sistem, mešani komunalni odpadki, krožno gospodarstvo, recikliranje, gospodarski kazalniki*

POVZETEK – Prispevek proučuje vpliv gospodarskih kazalnikov – BDP-ja, inflacije in stopnje recikliranja – na sestavo mešanih komunalnih odpadkov ter učinkovitost sistemov kavcij (KS) v državah članicah EU. Primerjalna analiza in ekonometrično modeliranje razkrivata, da višja stopnja recikliranja bistveno zmanjšuje delež plastike, kovin in stekla v mešanih odpadkih. Države, ki izvajajo KS, dosegajo učinkovitejše ločevanje odpadkov in višjo stopnjo recikliranja. Rezultati regresije kažejo, da je stopnja recikliranja glavni dejavnik zmanjševanja mešanih odpadkov, medtem ko BDP in inflacija nimata statistično pomembnih neposrednih učinkov.

1 Introduction

Although often perceived as worthless, waste possesses inherent economic value and can serve as a significant driver of economic activity when appropriately managed and controlled. In the European Union (EU), the average amount of municipal waste generated per capita is approximately 500 kilograms annually. Moreover, nearly 85 million tonnes of packaging waste are produced each year across the EU, with this figure steadily increasing. A substantial portion of this waste can be treated through incineration; however, large quantities continue to end up in landfills or unmanaged environments, from where they often enter river systems and eventually flow into seas and oceans. These data clearly reflect the scale of waste generated – both consciously

and unconsciously – by individuals, and underscore the urgent need for cities and communities to design efficient and sustainable waste management systems. The amount of municipal waste generated varies significantly depending on the status of waste infrastructure, socioeconomic factors, and prevailing consumption habits within a given country. Effective municipal waste management is essential for several reasons: it reduces the volume of waste destined for landfilling, mitigates environmental impact, and promotes higher rates of recycling, including improved separate collection, sorting, and environmentally responsible disposal.

Economic indicators, such as gross domestic product (GDP), inflation, and recycling rates, play a crucial role in understanding the dynamics of municipal waste management. While economic conditions shape infrastructure and consumer behaviour, recycling systems, such as deposit refund schemes, exert the most direct influence on waste composition and recycling efficiency. One of the primary indicators for monitoring progress toward the circular economy is the recycling rate of municipal and packaging waste. This metric reflects the extent to which end-users reintegrate waste materials into the economic cycle. While municipal waste constitutes approximately 10% of total waste generated in the EU, its heterogeneous composition presents significant challenges for effective management. The value of waste materials is directly influenced by their potential for recycling, reuse within the economy, and minimization of final disposal. According to EU targets for 2030, between 65% and 70% of packaging waste must be recycled.

An analysis of plastic packaging recycling rates across European countries from 2011 to 2021 reveals considerable variability. In 2021, recycling rates ranged from 17.1% in Malta to 60.2% in Slovakia. Although most countries exhibit a positive trend in recycling performance, the increase is neither universal nor linear. Countries such as Slovenia, Belgium, Germany, and the Netherlands consistently report high recycling rates, indicating the presence of efficient waste management systems and well-developed recycling infrastructure. For recycling to be effective, it must include processes such as collection, separation, washing, and shredding of waste materials. One of the most efficient systems supporting the separate collection of clean PET, Al/Fe, and glass fractions is the deposit refund system (DRS). Given that packaging waste comprises a significant share of municipal waste, this study also examines the impact of DRS as a highly efficient mechanism for reducing the presence of packaging waste in mixed municipal streams.

DRS directly contributes to increasing recycling rates, decreasing overall waste volume, and enabling the separate collection of materials suitable for secondary raw material markets. This, in turn, exemplifies the core principles of the circular economy – a model to which modern waste management systems should aspire. Accordingly, the main objective of this research is to analyse how economic indicators, specifically, GDP per capita, inflation, and recycling rate, influence the structure of mixed municipal waste and the efficiency of recycling systems in selected EU countries. Special emphasis is placed on the role of the deposit refund system as a policy instrument within the circular economy framework. The study aims to identify

whether countries with DRS perform better in terms of recycling outcomes and waste composition. Furthermore, it seeks to determine whether inflation, often overlooked in environmental studies, indirectly affects waste generation and separation through its influence on infrastructure costs, consumer behaviour, and investment capacity.

By comparing EU countries with and without DRS over the 2011–2021 period, this research contributes to a better understanding of the economic determinants of waste management performance and offers evidence-based recommendations for sustainable policy design.

2 Theoretical Framework

One of the main determinants and indicators of the quality of life in some country is GDP per capita, i.e. long-term economic growth. Seen in the context of evidence-based economic scientific research, the basic laws that can explain economic growth are clear (Mervar, 1999). As defined by the United Nations, sustainable growth and development include balanced economic growth, social equality and environmental protection (Bobek et al., 2024). GDP per capita between countries can be explained by the amount of physical and human capital that countries have and the efficiency of using these factors (Mankiw et al., 1992). Add to that the equipment, machines, infrastructure, buildings and knowledge that explain most of the differences between countries. In other words, if the GDP is growing, it means that production has increased, and this indicates the employment increase, the income increases and, ultimately, the better living standard. Since GDP represents the total value of all goods and services produced in a country over a given period of time, the economic growth is used as a measure of economic progress. However, it is not the only factor that affects economic well-being. GDP growth is directly related to the total amount of municipal waste increase; in phases of economic growth, production and consumption both increase, which in turn generates more waste (Pupavac, 2023).

Greco and colleagues emphasize that waste management costs are key to choosing the most beneficial system – higher GDP allows a greater investment in waste separation and recycling systems (Greco et al., 2015). Inflation, although it doesn't necessarily have a linear effect on waste levels, has an indirect effect through the operational costs of waste management (Greco et al., 2015; Pupavac, 2023). Rubil et al. (2024) find that inflation causes inequality in terms of the access to environmental services, and can slow down the implementation of waste management strategies and deposit refund system goals. Inflation may indirectly influence waste management through operational costs, but its direct statistical impact on waste composition remains unproven. Since packaging represents everything that has a protective, transport, use, informational and ecological function in relation to the product, which must be disposed of or discarded before or during consumption of the product (contents), at that point the packaging becomes waste (Environmental Protection and Energy Efficiency Fund, 2023). Historically, the driving force and powerful tool in achieving the set goals has

been monetary value or money. In the deposit refund system, beverage bottles that represent packaging waste are marked with a monetized refund fee, a monetary value that the person bringing the packaging waste receives in return. Therefore, in this case, monetary value has proven to be a strong lever in establishing a solution to the packaging waste problem. The deposit refund system and similar strategies emerge from the theoretical framework of circular management, according to which waste is a resource, and social sustainability requires a high percentage of recycling and the creation of secondary raw materials market (Šundov, 2025). This directly affects the reduction of packaging waste in mixed municipal waste, provides the solution for the separate collection of packaging waste and its disposal, i.e. recycling it into a raw material that will become a new product. With the incentive measure of the cash deposit, the user (consumer) is encouraged to separate the marked packaging already at the “doorstep” and hand it over to the authorized locations, which will pay him in money in return.

According to the data presented in the Journal of Sustainable Development of Energy, Water and Environment System, authors Schneider, Tomić and Raal claim that the share of beverage packaging collected through the deposit system in 2017 amounted to about 34.7% (by weight) of the total amount of the collected packaging waste (including all collection systems), which, according to the authors, is a significant result because it is a high-quality and clean fraction of the material. They further claim that in relation to the amount of beverage packaging in the deposit system placed on the market of the Republic of Croatia, about 85% of the amount was collected through the deposit system during 2017, which is much more than through other methods of collecting packaging waste (Schneider et al., 2021).

Although limited to beverage packaging, the deposit refund systems demonstrate a unique ability to ensure very high levels of collection (returns regularly exceeding 90% and sometimes even 95%), but more importantly, they enable a sufficient supply of high-quality raw material for the recyclers, leading to high levels of recycling, especially in closed-loop recycling, such as bottle-to-bottle (Schneider et al., 2021).

The overall impact of the system varies from country to country and depends on the frequency of waste, as well as the share of the beverage packaging in waste (Drab & Slučiakova, 2018). The emphasis on the entire life cycle of a product, focusing on its design, promoting sustainability, the circular economy process, while increasing recycling and reuse, promotes sustainable economic growth, and numerous authors contribute to the positive effects on the environment and society through various projects, such as the KISS (Keep It Sustainable and Smart) project, which explores the development and design of small vessels characterized by high sustainability in terms of energy and low environmental impact (Begović et al., 2021).

Also, the education sector plays an essential role in raising awareness and encouraging young people to educate themselves about the importance of the social and ecological dimension, which begins in the kindergarten, where children learn to save water and separate/recycle waste (Konda et al., 2015).

3 Methodology

3.1 Research problem and objectives

Municipal waste management is becoming an increasingly relevant issue for EU countries, particularly due to the growth of packaging waste and uneven recycling performance. While significant progress has been made in waste separation and processing, large quantities of recyclable materials still end up in mixed waste streams, undermining the principles of the circular economy.

This research aims to:

- Examine the impact of economic indicators (GDP per capita, inflation) on the structure of mixed municipal waste;
- Assess the effectiveness of the deposit refund system (DRS) in increasing recycling rates and reducing packaging fractions in mixed waste;
- Investigate the role of inflation and recycling infrastructure in shaping waste separation outcomes.

3.2 Research questions

Based on the identified research problem, the following research questions have been formulated:

- RQ1: Do countries that have implemented a deposit refund system (DRS) achieve higher recycling rates and a lower proportion of recyclable materials (plastic, glass, and metal) in mixed municipal waste compared to countries without a DRS?
- RQ2: Is an increase in the overall recycling rate associated with a statistically significant reduction in the share of recyclable materials within mixed municipal waste?
- RQ3: To what extent do GDP per capita and inflation influence the structure of mixed municipal waste once the effect of recycling rate is controlled for?

3.3 Hypotheses

- H1: The countries that have implemented a deposit refund system (DRS) achieve higher recycling rates and a lower share of recyclable fractions (plastic, glass, and metal) in mixed municipal waste compared to the countries without such a system.
- H2: An increase in the recycling rate is associated with a significant decrease in the share of recyclable materials within the mixed municipal waste.
- H3: GDP per capita and inflation do not have a statistically significant direct effect on the structure of the mixed municipal waste once the recycling rate is accounted for.

3.4 Data and Sample

The research is based on secondary data collected from Eurostat databases, including municipal and packaging waste statistics (*env_wasmun*, *env_waspac*, *env_wasgen*), macroeconomic indicators from Macrotrends (GDP per capita and inflati-

on rate), and national environmental agencies (FZOEU for Croatia). The period of analysis covers the years from 2011 to 2021.

The sample consists of four EU member states:

- Austria and Hungary – countries without a deposit refund system during the observed period,
- Germany and Croatia – countries that implemented a deposit refund system.

3.5 Variables Included in the Analysis

- Dependent variable: Structure of mixed municipal waste (share of fractions: plastic, glass, metal).
- Independent variables: GDP per capita, Inflation rate, Recycling rate, Implementation of the deposit refund system (DRS), operationalized as a dummy variable (1 = DRS implemented; 0 = no DRS).
- Control variables: Market disposal rate (%), Waste collection and treatment infrastructure (where data are available).

3.6 Analytical methods

The study employs a combination of descriptive, graphical, and econometric methods to assess the relationships among variables:

- Descriptive statistics (arithmetic mean, standard deviation) – to summarize and describe the basic characteristics of the data;
- Graphical trend analysis – to visualize the temporal evolution of key indicators (GDP, inflation, recycling rate, waste structure);
- Linear regression analysis – to estimate the effect of economic indicators on the composition of mixed municipal waste;
- Panel regression analysis (fixed effects models) – to control for unobserved, time-invariant country-specific characteristics;
- Statistical significance tests (ANOVA, t-tests) – to assess the robustness and reliability of the estimated models.

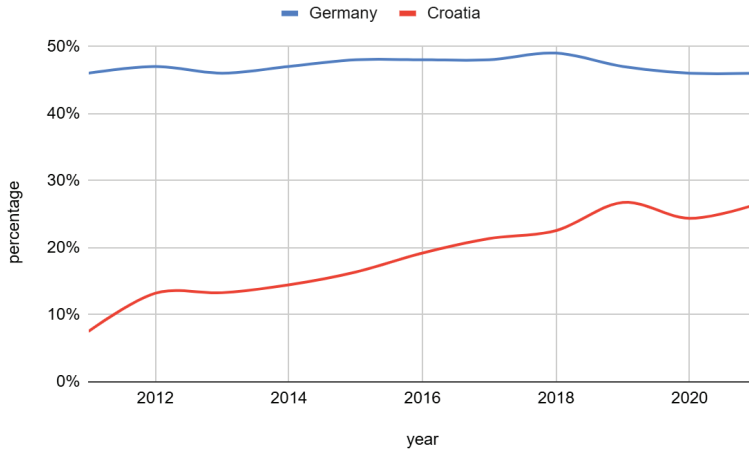
4 Results and Discussion

4.1 Comparative recycling performance and the role of the deposit refund system

The analysis of the recycling rates in the 2011–2021 period clearly shows that the countries implementing the deposit refund system (Germany and Croatia) achieved a higher recycling performance and lower shares of recyclable fractions in mixed waste compared to Austria and Hungary. The DRS provides measurable effects on waste separation efficiency, confirming hypothesis H1.

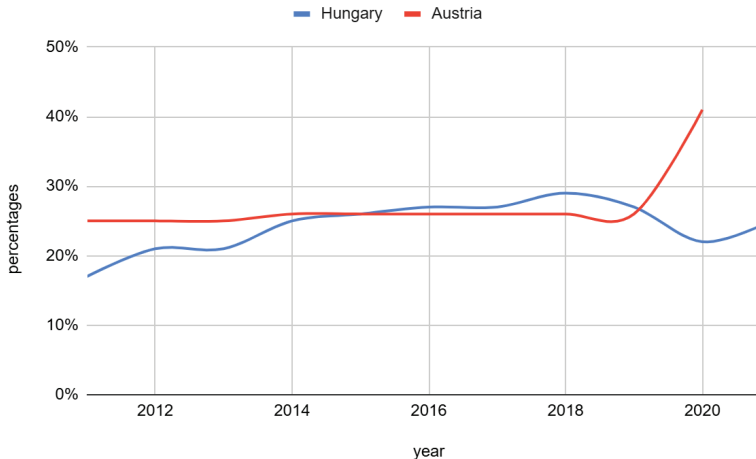
Graph 1

Percentage of waste recycling in the countries that use the deposit refund system (Germany, Croatia) in the period 2011–2021



Graph 2

Percentage of waste recycling in the countries that do not use the refund system (Austria, Hungary) in the period 2011–2021



4.2 Econometric results

Regression analyses were conducted separately for each country to identify the determinants of the mixed waste composition. The focus was placed on the impact of the recycling rate, GDP per capita, and inflation on the share of recyclable fractions in mixed municipal waste. The regression diagnostics and model coefficients provide a clear view of the relationships between these variables.

In Austria, the model shows a very strong fit ($R^2 = 0.948$, adjusted $R^2 = 0.907$) and is statistically significant ($F = 22.959$, $p = 0.002$). The recycling rate has a negative and statistically significant coefficient ($\beta = -0.201$, $p = 0.001$), confirming H2 that higher recycling rates lead to a reduction in recyclable materials within mixed waste. GDP ($p = 0.470$) and inflation ($p = 0.552$) are not significant, confirming H3.

Table 1*Key model indicators – Austria*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.974b	0.948	0.907	0.28178	1.571

Table 2*Regression coefficients – Austria*

Model		N. B	SE	S. Beta		
Austria	(Constant)	14.365	1.868		7.691	0.001
	BDP	-2.979E-05	0.000	-0.086	-0.781	0.470
	Inflation	0.002	0.003	0.092	0.637	0.552
	% Recycling	-0.201	0.030	-1.057	-6.755	0.001
	% Disposition	-0.076	0.117	-0.090	-0.651	0.544

The ANOVA confirms that the overall regression model is statistically significant ($F = 22.959$; $p = 0.002$), indicating that the predictors jointly explain a substantial share of the variation in the mixed waste composition.

In Croatia, the model also fits well ($R^2 = 0.854$, adjusted $R^2 = 0.756$) and is statistically significant overall ($p = 0.011$). However, individual coefficients are not significant at the 5% level (recycling $\beta = +0.083$, $p = 0.096$; GDP $p = 0.782$; inflation $p = 0.473$). This means that while the overall model explains much of the variance, the direct effect of the recycling rate cannot be confirmed statistically.

Table 3*Key model indicators – Croatia*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
Croatia	.924b	0.854	0.756	0.31321	2.858

Table 4*Regression coefficients – Croatia*

<i>Model</i>		<i>N. B</i>	<i>SE</i>	<i>S. Beta</i>	<i>t-test</i>	<i>p-values</i>
Croatia	(Constant)	4.804	2.490		1.929	0.102
	BDP	6.279E-05	0.000	0.149	0.289	0.782
	Inflation	-0.002	0.003	-0.263	-0.765	0.473
	% Recycling	0.083	0.042	0.829	1.972	0.096
	% Disposition	0.013	0.073	0.109	0.183	0.861

According to the ANOVA, the model is significant ($p = 0.011$), showing that the included variables collectively explain a considerable portion of the dependent variable's variance.

For Hungary, the model fit is weak ($R^2 = 0.333$, adjusted $R^2 = -0.112$) and statistically not significant ($p = 0.593$). All coefficients, including recycling, GDP, and inflation, are non-significant ($p > 0.6$ in all cases). This result neither confirms nor rejects H2 but supports H3, as economic variables have no direct statistical impact.

Table 5*Key model indicators – Hungary*

<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the Estimate</i>	<i>Durbin-Watson</i>
Hungary	.577b	0.333	-0.112	1.74495	1.502

Table 6*Regression coefficients – Hungary*

<i>Model</i>		<i>N. B</i>	<i>SE</i>	<i>S. Beta</i>	<i>t-test</i>	<i>p-values</i>
Hungary	(Constant)	17.015	23.960		0.710	0.504
	BDP	-0.001	0.001	-0.903	-1.329	0.232
	Inflation	0.004	0.007	0.359	0.532	0.614
	% Recycling	0.040	0.376	0.087	0.107	0.918
	% Disposition	-0.053	0.218	-0.220	-0.243	0.816

The ANOVA results show that the model is not statistically significant ($p = 0.593$), suggesting that the predictors do not jointly explain the variation in the mixed waste composition. In Germany, the model fit is moderate ($R^2 = 0.655$, adjusted $R^2 = 0.426$) and not statistically significant ($p = 0.121$). Coefficients for recycling ($p = 0.498$), GDP ($p = 0.931$), and inflation ($p = 0.096$) are not significant. This means that while the recycling rate has the expected negative sign, its effect is not statistically proven at the 5% level.

Table 7*Key model indicators – Germany*

<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the Estimate</i>	<i>Durbin-Watson</i>
Germany	.810b	0.655	0.426	2.12513	1.350

Table 8*Regression coefficients – Germany*

<i>Model</i>		<i>N. B</i>	<i>SE</i>	<i>S. Beta</i>		
Austria	(Constant)	-11.089	48,.139		-0.230	0.825
	BDP	-3.083E-05	0.000	-0.032	-0.091	0.931
	Inflation	-0.039	0.020	-0.716	-1.971	0.096
	% Recycling	0.595	0.825	0.222	0.721	0.498
	% Disposition	-0.002	0.135	-0.004	-0.012	0.990

The ANOVA indicates that the regression model is not statistically significant ($p = 121$), implying limited explanatory power of the predictors for Germany's mixed waste data.

Overall, the econometric results show that H2 is strongly confirmed in Austria and directionally supported in other countries, though not statistically significant at the 5% level. H3 is consistently supported: GDP and inflation show no significant direct effects on the mixed waste composition once recycling is controlled for.

4.3 Cross-country comparison and interpretation

Cross-country comparison reveals that the strongest statistical relationship between recycling and mixed waste reduction occurs in Austria, where recycling rate significantly reduces the proportion of recyclable fractions in mixed waste. Germany and Croatia display moderate model fits with non-significant coefficients, suggesting that while policy frameworks like the DRS support higher recycling levels, variations in implementation efficiency and data limitations affect model robustness. Hungary's model underperforms, indicating that omitted variables – such as collection coverage, contamination rates, and recycling infrastructure may be influencing outcomes.

4.4 Policy implications

The findings emphasize that institutional and policy mechanisms, such as the DRS, are more influential than macroeconomic conditions in determining recycling efficiency. Policymakers should therefore focus on strengthening the deposit refund systems, expanding material coverage, and improving collection logistics. Additionally, efforts should target system efficiency through better infrastructure, consumer incentives, and contamination control rather than relying on economic growth or market fluctuations to drive waste management outcomes.

5 Conclusion

The research confirms that the recycling rate is the key determinant in reducing the share of recyclable materials within the mixed municipal waste. The countries implementing the deposit refund system (DRS), such as Croatia and Germany, exhibit a significantly higher recycling performance and more effective waste separation than those without such systems, confirming the validity of H1 and H2. Regression results demonstrate that GDP per capita and inflation do not have a statistically significant direct influence on the mixed waste composition, thereby supporting H3. The comparative analysis further emphasizes that DRS implementation enhances the efficiency of separate collection, reduces recyclable fractions in mixed waste, and strengthens the circular economy outcomes.

Although the economic growth facilitates infrastructure development, institutional measures, such as DRS, play a more decisive role in promoting sustainable waste management. These findings provide a strong empirical support for the expansion of the deposit refund systems in the EU countries that have not yet adopted them. Policymakers should focus on integrating DRS within the broader circular economy strategies and aligning them with consumer incentive mechanisms. However, the study is limited by the availability of harmonized waste data across EU countries and does not capture behavioural or institutional factors that may influence recycling performance. Future research should expand the analytical model to include these aspects, providing a more comprehensive understanding of waste management efficiency.

Overall, the results contribute to the broader circular economy discourse by demonstrating that the effectiveness of waste policy instruments depends more on system design and governance than on macroeconomic conditions.

Robert Nikolić

Vplivi kavcijskega sistema in stopenj recikliranja na sestavo mešanih komunalnih odpadkov: primerjalna panelna analiza štirih držav EU (2011–2021)

Članek raziskuje povezavo med gospodarskimi kazalniki in strukturo mešanih komunalnih odpadkov v državah članicah EU (Avstrija, Nemčija, Hrvaška, Madžarska) s posebnim poudarkom na učinkovitosti kavcijskega sistema kot instrumenta krožnega gospodarstva. Analiza podatkov za obdobje 2011–2021 za navedene štiri države s primerjalnim pristopom in ekonometričnimi metodami prikazuje, kako stopnja recikliranja, BDP na prebivalca in inflacija oblikujejo vzorce ločenega zbiranja odpadkov in strukturo mešanih odpadkov. Teoretični okvir izhaja iz razumevanja, da so odpadki vir v okviru krožnega gospodarstva ter poudarja pomen gospodarskega razvoja in makroekonomskih pogojev za delovanje sistema ravnanja z odpadki. Rast BDP-ja

dolgoročno povečuje potrošnjo in nastajanje odpadkov, hkrati pa omogoča vlaganja v infrastrukturo, ki omogoča ločevanje odpadkov na frakcije, s čimer se povečuje stopnja recikliranja in razvija trg sekundarnih surovin. Inflacija deluje posredno, saj z vplivom na rast stroškov storitev, logistike in investicij lahko zmanjša pripravljenost za recikliranje in oslabi operativno učinkovitost sistema ravnanja z odpadki. Kavcijski sistem je v tem kontekstu prepoznan kot učinkovito orodje in spodbuda, saj z vrednotenjem embalažnih odpadkov motivira potrošnike k ločenemu zbiranju in vračanju embalaže, kar krepi krožno gospodarstvo.

V empiričnem delu so bili uporabljeni sekundarni podatki, zbrani pri Eurostatu, FZOEU (izvirno: Fond za zaščito okolisa i energetske učinkovitosti) in Macrotrendsu, in sicer podatki o deležu frakcij (plastike, stekla in kovin v mešanih odpadkih), stopnji recikliranja, BDP p. c. in inflaciji. Uporabljene so bile deskriptivna statistika, analiza časovnih vrst in panelna regresijska analiza. Postavljena je bila glavna hipoteza, da implementacija kavcijskega sistema v analiziranih državah izrazito povečuje stopnjo recikliranja in zmanjšuje delež frakcij (plastike, stekla in kovin) v mešanih komunalnih odpadkih v primerjavi z državami, ki KS še niso uvedle, ob pomožnih hipotezah o omejenem samostojnem učinku BDP-ja in inflacije. Rezultati deskriptivnih in regresijskih analiz potrjujejo, da je stopnja recikliranja najmočnejši in statistično značilen napovednik zmanjšanja deleža frakcij v mešanih odpadkih v vseh analiziranih modelih. BDP in inflacija kažeta šibkejšo oziroma nedosledno statistično značilnost, vendar posredno vplivata na razvitost infrastrukture, potrošniških navad in tržnih mehanizmov.

Primerjalna analiza stopenj recikliranja prikazuje, da države z uvedenim kavcijskim sistemom (Nemčija, Hrvaška) dosegajo povprečno višjo stopnjo recikliranja (32,5 %) kot tiste brez KS (25,5 % Avstrija, Madžarska). Članek utemeljuje, da je stopnja recikliranja ključni vzvod za zmanjšanje mešanih odpadkov oziroma da kavcijski sistem predstavlja učinkovit instrument za povečanje ločeno zbranih frakcij (plastike, stekla in kovin), ki so primerne za sekundarni trg, hkrati pa zmanjšujejo količino mešanih odpadkov ter zagotavljajo zbiranje ločenih in čistih reciklabilnih odpadkov. Primerjalna analiza ponuja empirično podlago za uvedbo kavcijskega sistema v državah, ki ga še nimajo, ter poudarja potrebo po celostnem pristopu, ki združuje ekonomske spodbude, razvoj infrastrukture, spremembe potrošniških navad in inovacij v politikah. Sklenemo lahko, da članek prispeva k literaturi o krožnem gospodarstvu in trajnostnemu ravnanju z odpadki, in sicer z empiričnimi dokazi o učinkovitosti kavcijskega sistema ter o družbenogospodarskih determinantah strukture komunalnih odpadkov v EU.

Data Availability Statement

This article is based on research data obtained from existing and publicly available sources (textual sources, databases), which are listed in the References section.

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