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Dissertation title: Evaluation of the effectiveness of fees for municipal waste management services

The dissertation 'Evaluation of the effectiveness of fees for municipal waste management services' analyses the functioning of the municipal waste management system as an integral ecosystem, combining economic, environmental, socio-economic and political aspects. An ecosystem composed of many links and pursuing the objectives set out by Community and national law and realising the "polluter pays" principle. The analysis includes theoretical aspects of the functioning of the municipal waste management system, a comparison of municipal waste management systems in selected countries and an empirical study of the achievement of objectives and the implementation of the "polluter pays" principle in three local government units in Poland.

The main objective of the study is an attempt to define and empirically verify the effectiveness of the basic fee for the municipal waste management services, introduced by the system reform since 2012, the essence of which was the transfer of responsibility for municipal waste from property owners to municipalities.

The main research hypothesis assumes that the effectiveness of municipal waste management fees as municipal income used to create and maintain integrated municipal waste management systems can be reduced to an assessment of the relationship between the amount of waste management fees and the degree of compliance with basic norms and standards of municipal waste management in municipalities or their associations.

The research carried out in the first chapter of the dissertation made it possible to establish the objectives that the municipal waste management system should achieve and the principles that the system should follow.

The second chapter of the thesis, on local and central charges for municipal waste management services, showed the functioning of the waste management together with the system of charges that the waste management charges internalise. The analysis carried out made it possible to develop an algorithm for setting municipal waste management fees and to define criteria for testing and evaluating the effectiveness of these fees.

The third chapter of the dissertation analysed municipal waste management systems in selected European Union countries, which made it possible to assess the degree to which waste management goals are achieved in these countries and to identify differences between the systems in Austria, the Czech Republic and Germany and the municipal waste management system in Poland. The most significant difference was found to be the lack of implementation in Poland of the principles of extended producer responsibility, which should oblige producers to take care of the entire product life cycle, including the phase when the product or its packaging becomes waste.

In the fourth chapter of the dissertation, the technological as well as organisational and legal solutions operating in three selected local government units in Poland were analysed: The Municipality of Krakow, the City of Łódź and the Intercommunal Union "Waste Management of the Poznań Agglomeration", the numerical characteristics describing waste management in these units and the structure of waste management in these units, taking into account the organisational and legal forms and technologies used. As a result of the research, it was found that the numerical characteristics of waste management in the selected local government units varied, which was manifested, inter alia, in different indicators of mass accumulation of municipal waste per inhabitant.

Chapter five examines the costs and revenues of municipal waste management systems in selected local government units, the degree to which costs are covered by revenues from collected

municipal waste management fees, and attempts to verify the effectiveness of waste management fees. Positive and statistically significant correlations were found between the level of municipal waste management fees and waste management objectives - achieving recycling levels, efficiency of separate collection and diversion from landfilling, which is the least environmentally friendly waste management method.

The stated aims of the study have been achieved. In the theoretical aspect, the effectiveness of the basic fee for the provision of municipal waste management services was defined and verified. In the application aspect, a method for estimating the actual costs of municipal waste management systems was developed. In the empirical aspect, the relationship between the amount of municipal waste management fees and the municipality's achievement of municipal waste management norms and standards was examined, which showed the existence of significant relationships between the amount of municipal waste management fees and the achievement of waste management goals and standards.