

عنوان مقاله:

Quantitative and Qualitative Study on Electric and Electronic Waste and Economic Evaluation of Their Collection and Recycling by Using the Cost-benefit Model: A Case Study in Dezful City, 2017

محل انتشار:

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تعداد صفحات اصل مقاله: 13

نویسندگان:

Qolamreza Zadmehr - *Environmental Science and Technology Research Center, Department of Environmental Health Engineering, Shahid Sadoughi University of Medical Sciences, Yazd, Iran*

Ali Asghar Ebrahimi - *Environmental Science and Technology Research Center, Department of Environmental Health Engineering, Shahid Sadoughi University of Medical Sciences, Yazd, Iran*

Roohollah Askari - *Health Policy and Management Research Center, Health Services Department, School of Public Health, Shahid Sadoughi University of Medical Sciences, Yazd, Iran*

Arefe Dehghani - *Department of Statistic and Epidemiology, School of Public Health, Shahid Sadoughi University of Medical Sciences, Yazd, Iran*

خلاصه مقاله:

Introduction: Due to the rapid development of technology and growth of economic activities in recent years, the use of electrical and electronic devices has increased dramatically, which is contributed to the proliferation of waste generated by these e-waste (Electric and Electronic waste) products. **Materials and Methods:** In this study, the status of e-waste in Dezful city in 2017 was studied. Accordingly, the types and amount of e-waste in residential and commercial-administrative areas were identified, and it was found that the amount of e-waste produced in these areas was totally about 1291 tons and the annual per capita of each family in residential areas was 15 ± 0.5 and for each unit in administrative-commercial areas was 180 ± 5 . Then, with the breakdown and identification of their valuable components (gold, silver, copper, etc.) the financial value of each gram of these components was also calculated and the obtained information was entered to Excel software. **Results:** By using the MATLAB software, the benefits of retrieving valuable components extracted from e-waste in residential and administrative-commercial areas, as well as the costs of recycling and collecting e-waste were calculated individually. Eventually, the annual benefits of recycling and collecting e-waste in Dezful were \$ 1091338 and their annual costs were \$ 615,556, resulting in NPV (Net Present Value) calculated \$ 475,782 annually. **Conclusion:** Therefore, based on the cost-benefit model (CBA), it was shown that the NPV is positive, which indicates that e-waste recycling and collection is economically feasible.

کلمات کلیدی:

Waste Recycling, Electronic Wastes, Cost-Benefit Analysis, Dezful City

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