

Impact of commercial venues, business activity and population on solid waste generation in the city of Lima, Peru

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1. Introduction

1.1 Background

Waste disposal is a vital activity in the present world. This includes the collection, transport, treatment and disposal of waste, together with monitoring and regulation of the waste management process. Waste management is intended to reduce the adverse effects of waste on human health, the environment or aesthetics.

As is the case for large cities, the capital of Peru, Lima, generates a large amount of solid waste. The management of this waste is the responsibility of the local governments. Lima is divided into administrative areas called districts, each district is the seat of its local government. The expense of waste disposal and treatment is large, for example, one of the top 5 districts per size spent around 8 million USD in the year 2013. To finance those expenses, the local governments impose a tax on residents, at different rates according to the nature of the resident (housing units, commerces or industries).

1.2. Business problem

We want to determine how much each type of property (housing units, commerces, industries) impacts the amount of solid waste generated in a district. If we can determine it, we can assign a proper fraction of cost for each property according to its type, and then we can impose a fair tax rate. Local governments would be interested in this analysis because that would adjust the tax rate in a way that charge more to the taxpayers that contributes more to waste generation, therefore it creates incentives for those taxpayers to improve their operations.