**Behavioral attitudes towards waste prevention and recycling – Gilly et al 2018**

This paper is focused on determining the importance of non-monetary motivations as determinants of human behavior.

A discussion presented in the literature is that social norms and peer pressure are often more relevant for recycling behavior than economic incentive.

Are motivations necessary conditions for effectiveness of waste policies when household recycling is at stake?

There are two kind of motivations intrinsic and extrinsic motivations. The first one comes from an inner need to perform an action or to adopt a certain behavior because the reward comes from the action itself. The second, however, comes from the reward that can be obtained because of a certain attitude or behavior.

H0

The intrinsically motivated individuals are more likely to minimize their waste.

The recycling may be driven by intrinsically and extrinsically motivations.

H0

Individuals who are sensitive to incentives, reciprocity and peer pressure tends to show higher probability of increasing recycling with respect to individuals who are predominantly intrinsically motivated towards the environment.

The author affirm that better policies that increased provisions of appropriate services or implementation of waste disposal fees positively influence household participation in waste sorting, because it decreases the opportunity cost of recycling. There are two types of programs: the unit price program (economic incentive) and improvements to convenience such as the proximity of drop-off centers (technical policies).

Introducing a curbside recycling program makes recycling more convenient for the household. Increasing convenience of recycling behavior can increase intrinsic motivations to recycle by allowing separate collection to become a household habit.

H0

Policies aimed to increase convenience related to recycling, may crowd in individual motivation to increase separate collection.

The variable intrinsic motivation includes several questions that could be related to a greater individual sensitivity towards waste reduction and to keen interest in environmental protection issues. Whit factor analysis, the authors were able to extrapolate only the part of variance that these variables shared, which they expected to be correlated to intrinsic motivation. The variance not related to the latent variable “intrinsic motivation” was not considered in the resulting factor, and would not influence our analysis.

They measured reciprocity through the willingness to pay a waste tariff based on average waste produced in households’ municipality. Some authors believed this is counterintuitive because according to traditional economic theory, the household has the incentive to generate more waste if the tariff is based on the average municipality waste. However, reciprocity is a positive behavior enacted as a response to a positive behavior of an individual and reasons that move a person towards reciprocal behavior can be different and not necessarily related to altruistic motivations.

“The existence of positive reciprocity may induce selfish types to behave nicely for purely selfish reasons, because they can expect a reward by the reciprocal types”

By pursuing the social welfare they are pursuing their own interest of not increasing their waste related tax.

To measure extrinsic motivation they used a question about whether they would prefer to receive an economic incentive for minimization practices and/or separate collection practices.

They used questions about minimization behavior as dependent variables. They were food waste generation, minimization of glass, plastic and paper waste generation. They also determined the effect of different collection policies: curbside or bring site collection.

Control variables such as area, income, education and house dimension were incorporated in the econometric model. Area captured disparities in terms of standard of living and municipal waste management schemes in the various parts of the country. House dimension in terms of number of rooms. Because available space to store sorted waste before the collection can influence recycling and minimization behaviors.

The cluster analysis will identify which motivation is stronger intrinsic, extrinsic or reciprocity. It helped him to identify the characteristics in common that have people with same motivations and identify target group for policy making.

Results

The intrinsically motivated people are more likely to reduce their waste while extrinsic motivated not too much. Their result was according to the literature, because social appraisal and reciprocity do not matter in regard to non-observable pro-environmental behavior like waste reduction.

The relationship between clusters and recycling

People moved by economic incentives are associated with a recycling behavior, while intrinsic motivated people do not show a significant correlation between motivation and recycling.

Increasing convenience programs were always statistically significant to the dependent variable. Indeed, interactions between those variables and motivations proved that there is a crowd-in effect between individual motivations and policies.

For example, the interaction between cluster 2 and curbside recycling program. It gives us the evidence that curbside scheme can support the increase of recycling rates thanks to the reduction of the opportunity cost related this action.

Cluster 3 tends to recycle more often if bring sites are provided near the household. It affects equally to cluster 2.

Intrinsic motivations are significantly correlated with minimization behavior, while there is not an empirical link between extrinsic motivation and waste reduction

The probability of recycling increases with extrinsic motivations. Also, policies directed to increase convenience of recycling could crowd-in motivation.

Motivations are preconditions for the success of recycling policies.

The policy maker should need to pay attention because a non-efficient technical policy or the imposition of measures not shared or agreed with the local population may crowd out motivation, letting households decline their responsibilities towards waste.

For the paper

Making recycling more convenient for the household increases the recycling activity.

Programs that reduce cost opportunity of recycling: unit price, drop off centers. Una política errada puede

**WASTE DISPOSAL AND HOUSEHOLDS’ HETEROGENEITY. IDENTIFYING FACTORS SHAPING ATTITUDES TOWARDS SOURCE-SEPARATED RECYCLING IN BOGOTÁ, COLOMBIA**

This study was made for Colombia’s capital. The greater the socioeconomic class, the greater the attitudes towards the source-separated recycling amount the households of Bogota. It could be because higher socioeconomic class has higher information about those topics

Higher education levels provide information to students that can increase their environmental awareness and consequently deliver them to activities such as recycling. Furthermore, education in waste management improves efficiency in handling waste and its impacts on human health and the environment.

He showed male head of low socioeconomics households had a negative effect in attitudes towards recycling. However, this variable is not statistically significant for high socioeconomic households.

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There are differences between curbside recycling programs and unit pricing program. The first one makes recycling more convenient and less time consuming while the second makes recycling an expense saving activity.

Conclusions

Access to curbside recycling affects positively recycling activity. The length of recycling program also has a positive impact. However, making recycling mandatory has no impact on recycling. Paying for recycling does not have a clear result.

My name is Anzony Quispe. I am a last year economics student at the Universidad Nacional Agraria La Molina. I would like to work with you because I want to gain more experience in economic research and expand my knowledge about methodologies and tools that are used in research process. In addition, I want to improve my programming skills and learn more about machine learning and its applications in economic research. I believe that this position would be very helpful in my transition for my future academic career since I aim to apply for a master program in economics.