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2023 RECRUITMENT CAMPAIGN

The LEGO laboratory is recruiting a doctoral student on a 3-year contract

Discipline:

Marketing

Thesis topic :

Optimizing household waste management in a region: the effect of informational feedback on individual behavior

Key words :

Action research Sustainable Territory/City Consumer behavior Informational feedback/data

Hosting structure :

The Laboratoire d'Economie et de Gestion de l'Ouest (LEGO) is a university research laboratory supported by two universities (Université de Bretagne Occidentale and Université de Bretagne Sud) and an engineering school (Institut des Mines Telecom Atlantique). It focuses primarily on the study and analysis of exchanges between socio-economic players. To achieve this, it draws on the skills of nearly 100 researchers, including 20 PhD students with multidisciplinary backgrounds in economics, management and management sciences.

The Laboratory is structured around five areas of expertise:

- Digital, networks and territories
- Responsible practices and food
- Health and well-being
- Sustainability of organizations
- Money, Finance and Governance

The proposed doctorate is part of the "Responsible practices and food" and "Digital, networks and territories" areas of expertise.

The PhD student will be based at the LEGO laboratory - Vannes site. Travel will be required for data collection, participation in project management activities and scientific promotion. Partial telecommuting is possible.





Doctoral supervision :

Agnes Lecompte : Senior Lecturer HDR, Université Bretagne Sud agnes.lecompte@univ-ubs.fe

Claire-Lise Ackerman: Associate Professor HDR, Rennes School of Business claire-lise.ackermann@rennes-sb.com

Dates

| Application deadline : | July 7, 2023 |
|-------------------------------------|------------------------------|
| Video hearing (subject to change) : | July 25, 2023 |
| Start date : | 1 ^{er} october 2023 |

Presentation of the proposed topic:

The proposed thesis is part of the CELTIC project (Consortium d'Expertise Lorient Territoire Innovant et Citoyen), funded by France Relance 2030, and coordinated by Lorient Agglomération (lead partner), in consortium with the WATTECO company and the Université Bretagne Sud (UBS). It will run for 36 months, starting in summer 2023. The main aim of the project is to use data to steer public policies, making Lorient Agglomération a sustainable and intelligent territory.

Different use cases will be studied. Doctoral funding is planned for the waste component.

The Agglomération has identified several obstacles in this area, and digital technology appears to be a particularly relevant tool for making certain services more adapted to current needs and developing new ones.

- Lack of information for users about their waste production;
- The organization of household bin collection rounds is based on a fixed frequency and weekly cycle, estimated on the basis of data collected during collections (visual fill rate, weight). This system is showing its limitations on a large number of voluntary containers;
- At present, it is not possible to remotely monitor the fill rate of glass and packaging columns. As a result, some sites may be full for a significant period of time, leading either to an additional trip to another PAV (point d'apport volontaire), increasing the associated CO2 emissions, or to uncontrolled dumping at the foot of the column.

As part of the CELTIC project, Lorient Agglomération will develop the following applications:





1) Geolocation of overhead recycling bins, remote reading of fill levels and feedback to users

The experiment will be carried out on an experimental perimeter of 676 glass collection columns spread across the 25 communes of the Lorient Agglomération territory. The information (remote reading of the fill level) will be transmitted in real time to a geolocation interface for the PAVs available on the Lorient Mon Agglo application and website, so that users can quickly carry out their search. The interface will also suggest which column to use, depending on the quantity of waste to be deposited. There are also plans to introduce a system enabling users to keep track of their waste. Users flash a QR Code and can then report an unauthorized drop-off; they can then enter their drop-off and be informed of the reduction in their CO2 impact thanks to the recycling of their drop-off.

2) Identification of collection bins

Lorient Agglomération would like to equip its household and professional collection bins with an identification system, via the installation of an RFID chip. The objectives of this deployment are as follows:

For Lorient Agglomération, via operations: Ensure better traceability of collection bins (3 per household) and their use; Know how often each household/professional takes out its bin, and adapt collection routes by planning them according to the actual frequency with which bins are taken out.

For users, via the Lorient Mon Agglo application: Improve knowledge of their waste production, which will be estimated by identifying their collection bins and the quantity collected at each outing; Improve sorting quality and waste reduction, for example by encouraging users to take out fuller bins at more frequent intervals;

It is proposed to roll out the experiment in Guidel.

For the time being, this system will not be used to bill household waste production as part of a switch to incentive-based pricing.

The doctorate will focus on the local households involved in the experiments, with the aim of informing the project partners (Lorient Agglomération in particular) about the acceptability of these solutions and the reaction to the innovations implemented. Indeed, beyond data analysis, an in-depth analysis of the user's point of view is essential to the success of the planned investments.

Data collection is planned:

- Exploratory interviews with local households on waste management and digital tools

- Follow-up of the experimentation with a comparison of "tester" versus "control" households, the former having access to (or using) the new tools/ the latter not: quantitative surveys with





measurement of declarative behavior on waste management, repeated measurements to test and quantify changes over time.

The doctoral thesis will be the subject of national and international scientific publications.