RESEARCH PROJECT AND COLLABORATION PROPOSAL

What geocoded payment data reveal about the economic structure of cities

Urban financial microflows, economic centralities and territorial intelligence

This document is not a commercial brochure. It is intended for banks, PSPs, fintechs, acceptance networks, data teams, general secretariats and management teams wishing to assess the territorial value of aggregated, anonymised and mappable data.

In one sentence

Payment data are not only used to count transactions. They can bring to light centralities, hierarchies, specialisations and flows that conventional indicators capture poorly, or too late.

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Doctoral project in urban economic geography and urban analytics
March 2026

1 In brief

What the project is

Turning geocoded payment data into a tool for reading the city: where spending concentrates, how it is distributed, which spaces attract, which depend on other centralities, and at what rhythms these structures evolve.

What it can offer you

Testing, within a rigorous and non-commercial framework, the analytical value of an already existing data asset in order to produce a finer and more differentiating territorial reading. This approach can simultaneously strengthen your strategy, your capacity for innovation, your territorial analysis and your institutional positioning.

What the project does not require

Neither individual data, nor personal identifiers, nor massive extraction. The project can begin from a limited scope that is already aggregated.

A reasonable first step

A scoping discussion to verify whether common ground exists: type of data available, compatible level of aggregation, relevant geographies and realistic mode of collaboration.

2 Why this project may matter to you

For an institution that produces, hosts or administers payment data, the challenge is not only to share data. The challenge is to test what they actually make it possible to see once they are treated as territorial traces of the circulation of value.

Concretely, this project can help you to:

- derive value from an already existing data asset within a credible scientific framework;
- provide a territorial reading complementary to operational and commercial reporting;
- document spatial structures that other indicators capture poorly;
- make explicit an ethical framework of caution regarding biases, coverage and interpretation of the data;
- explore differentiating analytical uses without commercial overpromising;
- place your institution within a research partnership of high intellectual and institutional value.

Note

This document is deliberately concise. Its purpose is to open an initial exchange. More developed methodological, empirical and bibliographic elements can then be provided.

3 Why now

Three developments make this project timely:

- cities are experiencing rapid recompositions of their centralities, their rhythms of activity and their catchment areas;
- institutions increasingly possess rich data assets, yet these remain underexploited from a territorial perspective;
- the need for territorial intelligence grounded in geocoded data is increasing, even though interpretive frameworks remain insufficiently institutionalised.

In other words, the moment is favourable for transforming a stock of data into a mappable and useful reading of urban economic functioning.

4 What these data can make visible

From an aggregated, anonymised and spatially located dataset, the project can help bring out:

- the relative economic intensity of places and the temporal rhythms of activity;
- the hierarchisation of urban centralities, by distinguishing established centres, secondary poles and peripheries;
- the sectoral or functional specialisations of certain areas;
- asymmetries between residential spaces and spending spaces;
- where the information exists, the structures of flows between areas.

5 Examples of use cases

Reading centralities

Identify dominant, secondary or emerging poles, and understand their distribution in urban space.

Comparing territories

Set centres, peripheries, commercial corridors or secondary areas against one another in order to see where spending concentrates and how it is reconfigured.

Tracking rhythms and disruptions

Observe temporal variations, calendar effects, changes in structure or slower recompositions of activity.

Analysing catchment areas

When the data allow it, reconstruct inter-area dependencies, consumption basins or flow structures.

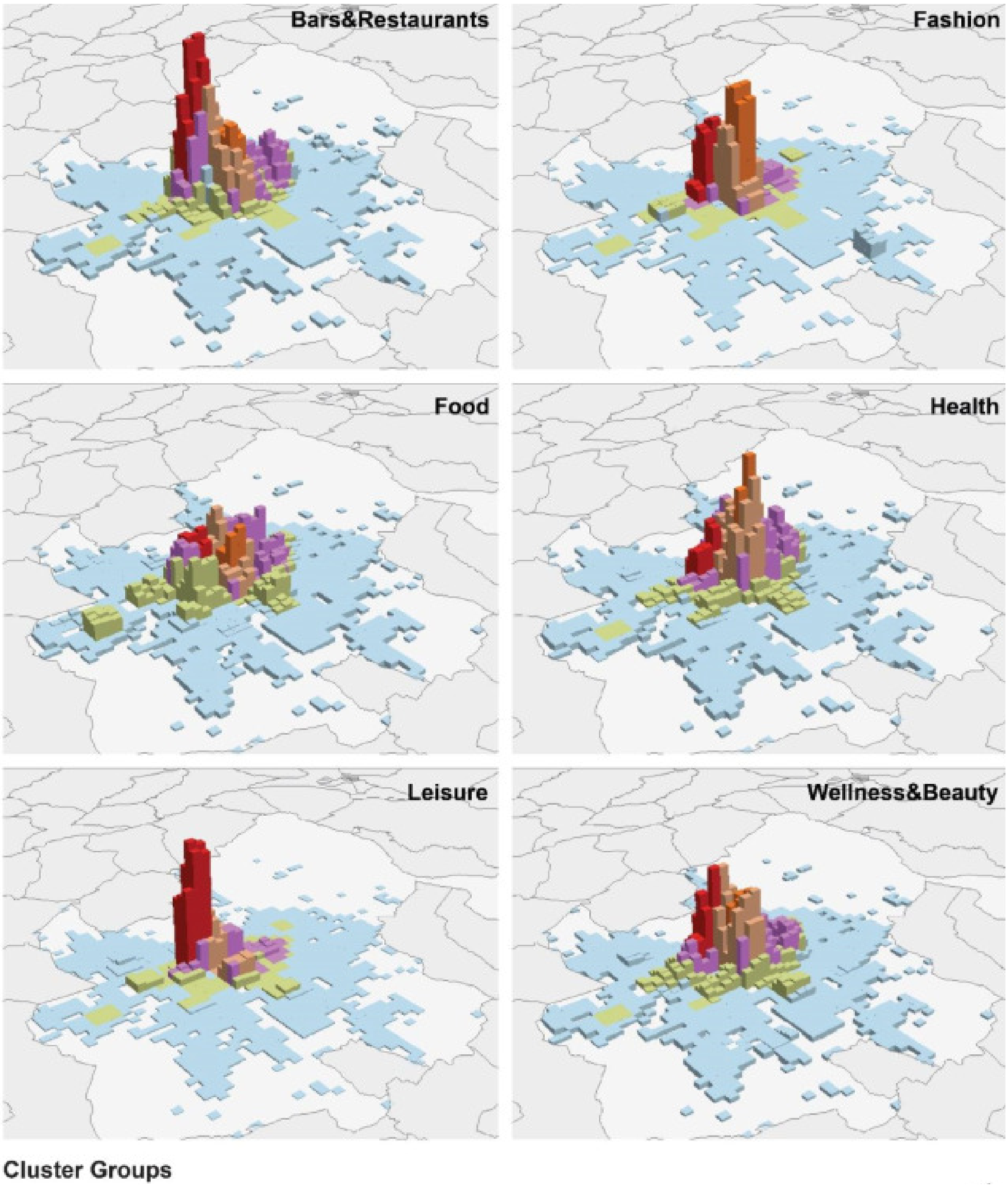

Figure 1: Spending environments in the city of Madrid (colours) and total volume of spending (extrusion heights proportional to z-scores). This figure shows that economic centralities can be differentiated both by the intensity of spending and by their sectoral specialisation. It reinforces the idea that the spatial structure of urban economic activity combines concentration, hierarchisation and functional diversity. *Source:* adapted from Carpio-Pinedo et al. (2022).

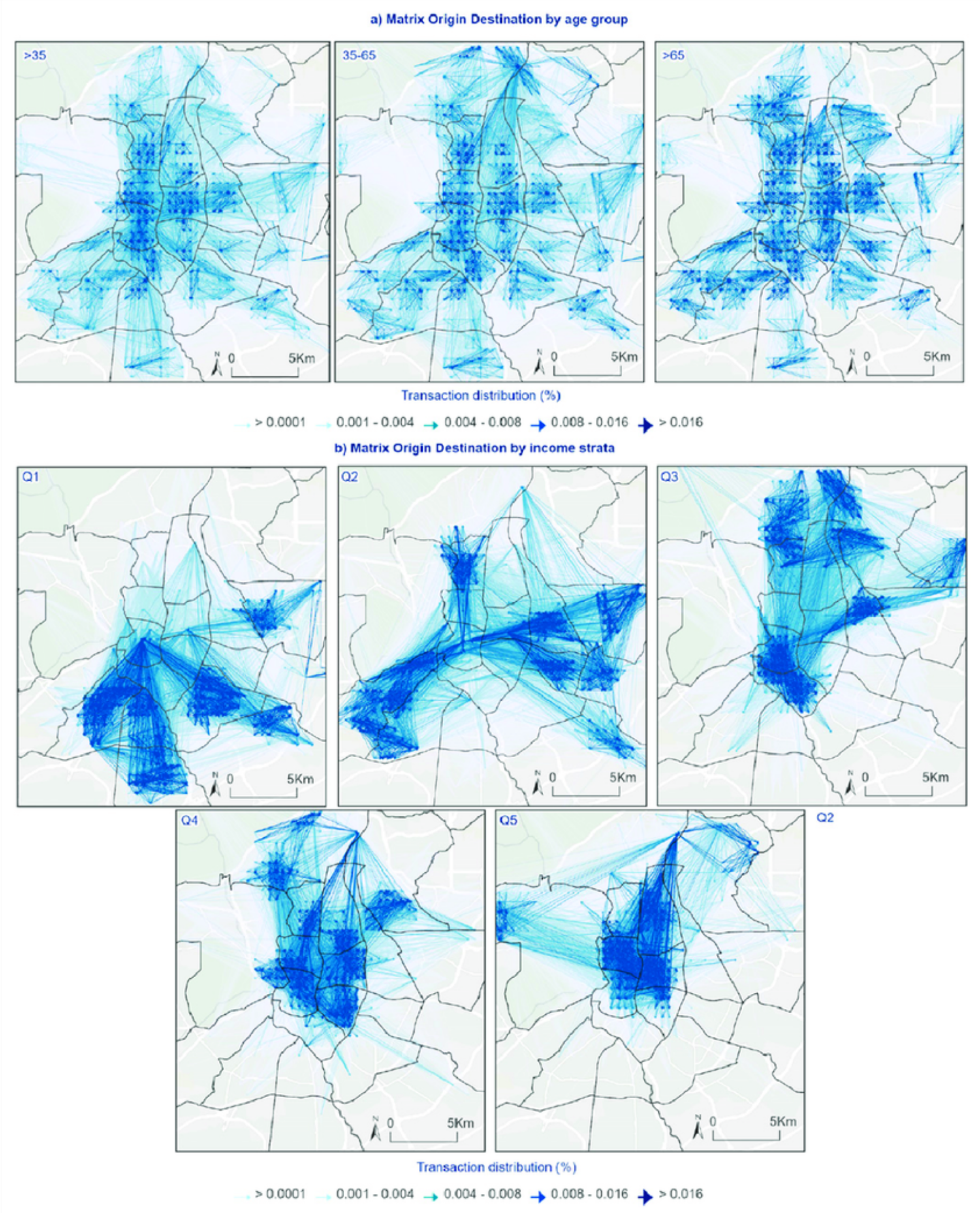

Figure 2: Economic centrality across population groups in the city of Madrid. This figure is directly aligned with the core of the project, since it relates economic centralities to sociospatial disparities. It illustrates visually that consumption structures and poles of attraction are not distributed uniformly across social groups. *Source:* adapted from De las Obras-Loscertales et al. (2026).

6 Empirical feasibility and useful data types

The project remains feasible, even with a limited dataset. As long as it preserves a spatial dimension, a temporal depth and a few aggregated economic variables, it is already possible to conduct analyses at a high level of rigour.

Level	Content	What this already makes possible
Minimal core	Spending area, period, aggregated number of transactions, aggregated amount	Mapping of economic intensity, comparison between areas, initial centralities
Useful level	Aggregated activity category, longer series, finer granularity	Territorial typologies, sectoral readings, more robust temporal variations
Enhanced level	Complementary aggregated variables on channels, means of payment or types of acceptance points	Finer comparative analyses of spending structures and activity rhythms
Relational level	Aggregated flow matrices or relational variables compatible with the chosen framework	Reading links between areas, interspatial attractiveness, territorial dependencies, functional consumption areas

The most useful variables are the following:

- geocoded spatial information or information aggregated by area;
- sufficient temporal depth;
- the aggregated number of transactions;
- the aggregated amount of spending;
- an activity categorisation when it already exists in aggregated form;
- channels, payment types or acceptance points;
- aggregated information on relationships between areas;
- minimal documentation on coverage and aggregation rules;
- aggregated sociodemographic variables, if they exist and if their use is compatible with the chosen framework.

Note

The right starting point is not necessarily the richest dataset. It is the dataset that is most credible, best documented and most compatible with your internal constraints.

7 Project collaboration framework

The project does not require:

- individual data;
- personal identifiers;
- historical records attributable to named individuals;
- information allowing direct re-identification;
- a massive transfer of granular data at the initial stage;
- commercial, marketing or advertising use of the data.

It may be considered:

- on the basis of already aggregated and exported data;
- within a secure or confined partner environment;
- on the basis of a limited exploratory protocol before any broader discussion.

Reasonable burden for the partner

A first phase can be structured progressively: a scoping discussion, the identification of a relevant data scope, then a limited exploration, prior to any decision to formalise a partnership.

8 Methods envisaged

The methods planned are proportionate to the nature of the data actually accessible. At this stage, we are mainly envisaging:

- analytical cartography and spatial statistics to identify intensities, concentrations and discontinuities;
- multiscale comparisons to test the robustness of results according to the level of aggregation;
- typologies and clustering procedures to identify families of spending spaces;
- temporal analyses to identify rhythms, stabilities, disruptions or recompositions;
- where relationships between areas exist, flow and network analysis to read attractiveness, dependence and connections;
- cross-referencing with complementary urban layers: accessibility, commercial fabric, urban morphology, socio-territorial characteristics.

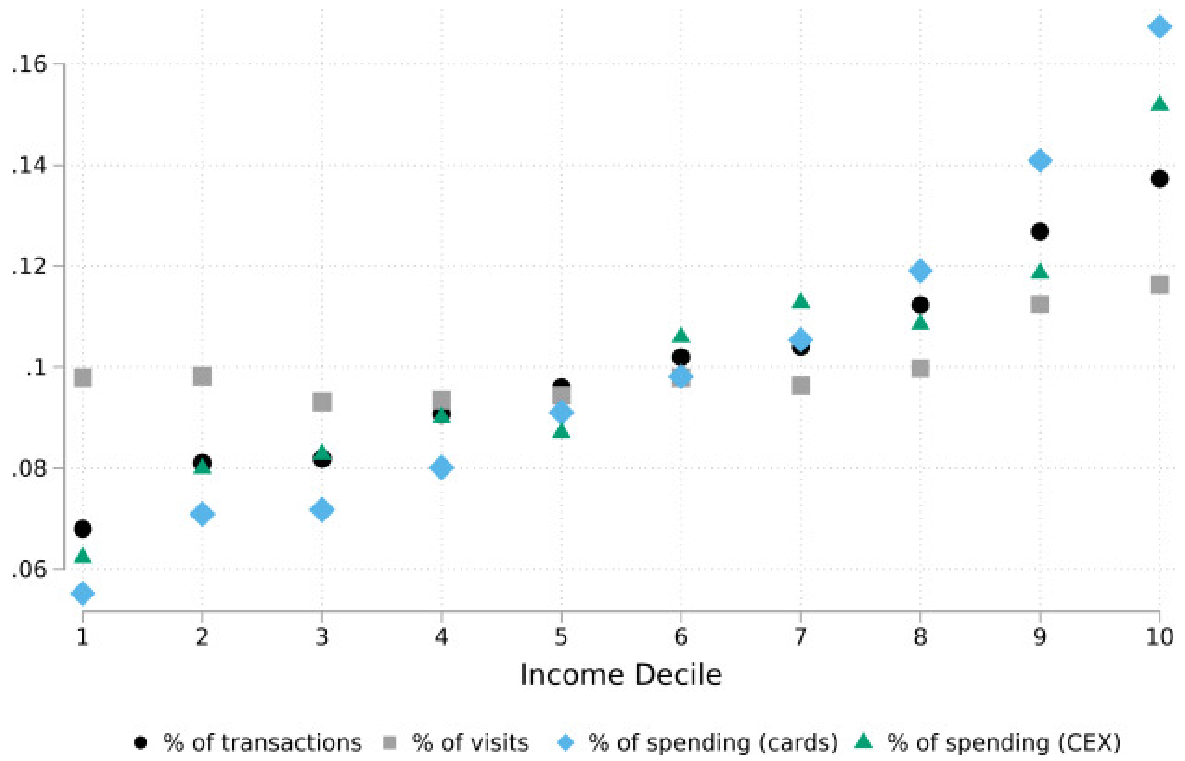

Figure 3: Example of a gap between footfall, transactions and spending. This figure is a reminder that a territorial reading of payment data must remain cautious regarding biases of coverage and interpretation. *Source:* adapted from Klopack and Luco (2025).

9 Why the project is solid

The project is designed to be immediately actionable. Its robustness rests on three complementary dimensions.

First, it is based on an already structured and well-positioned scientific question. Situated within urban economic geography, the project mobilises payment data as an observational infrastructure for the circulation of value, with analytical frameworks that are already established and recognised.

Second, it is designed to be operationally manageable. The empirical strategy is progressive, grounded in a clearly defined minimal data base, without a heavy initial commitment. This approach makes it possible to test quickly the value of the analyses, while leaving open the possibility of gradual deepening depending on the results.

Third, it offers direct interest for partners. The analyses produced make it possible to derive territorial value from existing data, to generate new readings for clients or institutional stakeholders, and to inform internal thinking on positioning, innovation or the production of studies.

Finally, the project rests on a solid bibliographic base and on exchanges already under way with researchers from established fields such as economic geography, urban economics and data science. These collaborations make it possible to mobilise high-level analytical frameworks, ensure strong methodological rigour, and situate the work within international academic standards.

Beyond its scientific solidity, this dynamic opens the possibility of producing visible and valuable results: publications, research notes, interventions in academic and institutional circles, as well as contributions to structuring debates on the economic reading of territories. The project thus offers a privileged entry point into an active research ecosystem, with the prospect of co-productions of high intellectual and strategic value.

10 What a partnership can produce

Depending on the chosen scope, a partnership can produce:

- a scoping note on the dataset's real possibilities;
- a reproducible methodological protocol for processing aggregated geocoded data;
- maps of centralities, hierarchies and territorial specialisations;
- targeted analyses of certain spaces, rhythms or sectoral dynamics;
- intermediate and final reporting sessions;
- the institutional enhancement of a demanding and well-governed research partnership.

Phase	Purpose	Burden for the partner
1. Initial exchange	Verify whether common ground exists	Low: scoping discussion
2. Feasibility note	Identify a credible data scope	Low to moderate: targeted technical exchanges
3. Exploration	Test a protocol on a limited scope	Moderate and progressive
4. Reporting	Present the initial results and decide next steps	Low: review and discussion

11 For a first contact

A first exchange will aim to enable a rapid and mutual assessment of the project's interest, in order to identify whether common ground may exist.

It will above all make it possible to discuss:

1. the type of data that could potentially be mobilised;
2. the level of aggregation compatible with your constraints;
3. the geographies or study areas that would carry the most meaning;
4. the most realistic form of collaboration;
5. the working, validation and dissemination conditions for the results.

Reasonable aim

The objective is not to rush a decision, but to open a targeted exchange making it possible to identify quickly the potential for collaboration between your institution and this project. In around thirty minutes, it is possible to assess the interest, sketch out concrete use cases and evaluate the relevance of a shared working framework that is both rigorous from a scientific point of view and strong in terms of enhancement.

Conclusion

This document is a direct and operational reading of the project, within a logic of collaboration with institutional actors. It makes it possible to identify quickly what this work can concretely produce, the types of enhancement that can be envisaged, as well as the realistic conditions for implementation, without premature commitment.

This exchange can naturally be extended by a fuller development of the scientific framework, methods and references, or by a targeted adaptation of the project according to your priorities and internal stakeholders.

Bibliographic references

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