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Market Halls as Activators of Public Space. Barcelona's metropolitan food system

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Abstract

Barcelona is characterized by a unique food supply system based on 38 public market halls, 2,331 supermarkets, 1,997 food stores and 1,562 bakeries evenly dispersed in the urban fabric. The city is a model of what happens in the 35 municipalities that surround it and make up its metropolitan area, where another 52 markets catalyze food trade around them.

As happened in many other European cities, market halls were open-air exchange spaces until they were covered as cities modernized, a process that ordered circulation in public space, extracting from it a relationship with food that had been inherent to urban condition for centuries. But while in the 60's many cities began to dismantle their public food system, Barcelona disregarded this trend and continued to erect market halls until tripling their number, reinforcing a multi-scale constellation dispersed throughout the metropolitan territory. The case becomes even more unique when looking at the metropolis, in which 30% of the market halls were built from 1976, the year of the elaboration of the General Metropolitan Plan in force since then.

Today, patterns can be detected in which the proximity of a market hall triggers the use of nearby ground floors for commercial activities related to food and other daily programs, and intensifies the use of the public space around it. This article presents an ongoing investigation in which, on the one hand, the architecture of the ninety market halls is analyzed, with the hypothesis that each building type determines the surrounding urban space in different ways; and on the other hand, the urban fabric in which markets are inserted, the population density that they serve, and the variety of food trade in their proximity are observed and compared.

Keyword: *Barcelona, food systems, market halls, public space, urban proximity*

Introduction

The development of post-industrial food supply systems parallels the explosion of the modern metropolis. The way in which food is supplied to each household —the type of edibles, the architecture of the places where they are bought, the distances that must be travelled to reach them, or the type of transport that must be used— determines the shape of the city and is different for each metropolis. But paradoxically, in the resulting post-Fordist urban cultures, citizens' relationship with food becomes in many cases passive, and eating is often reduced to an act of supplying energy to enable daily functioning (Rosenthal and Flood, 2019).

The purchase of food constitutes almost 14% of the budget of Catalan households, only behind expenditures on housing. But while urban design and architecture address issues related to how we live or how we move —transportation is the third largest group of expenditures in local domestic budgets—, how citizens eat is not often included in the requirements of the projects that architects develop in the metropolis. However, the design of food systems is essential to shape cities: it directly affects global challenges such as inequalities in distribution, cultural sovereignty or the climate crisis.

The urban condition of market halls: an approach at two scales

Urban Barcelona

The observation of the food system in the city of Barcelona explains the exceptionality of a unique supply model. The municipality has maintained a historic commitment to guarantee citizens' access to fresh food, so that, in 2020, almost a third of the city's households (31.51%) had a municipal market at a distance of less than 400 metres. The offer is complemented by a scattered constellation of premises made up by 1,522 grocery stores and, on the other, 2,809 supermarkets. As a result of the progressive strengthening over time of this urban infrastructure of food providers supported by the 38 public markets, the city can be considered, with very few exceptions, a gastronomic oasis (Fuertes and Gómez-Escoda, 2020a).

According to official data, groceries are mostly bought in trips originating in the place of residence: 77.4% of purchases fresh food and 70.4% of purchases of other types of edibles are made in the same home neighbourhood (Diputació de Barcelona, 2019). As a consequence, most trips to or from the markets are made on foot, which allows establishing a very direct link between the geography of food providers and the use of the public space around them, and turns markets halls into nodes that catalyze daily journeys.

Furthermore, this idea of extreme proximity to food services is reinforced when instead of 400 metres, times of 10 minutes —around 800 metres— are considered: then, 83.79% of city's inhabitants have access to a market hall. Looking at the other end, if longer times are observed, only 1.62% of Barcelonans (27,049 people) have to walk more than 15 minutes to reach the nearest municipal market, which means an almost complete coverage of the urban fabric, and very few areas, corresponding to topography elements (Montjuïc, Tres Turons, Collserola) or areas in transformation or recent transformation (22@ district, Diagonal Mar area), are far from the service of the municipal market halls. Based on this analysis, it is also possible to establish some parameters that denote the proximity between markets and their role as binders: 50.2% of the city's food stores are located within 5 minutes of the markets; 38.9% between 5 and 10 minutes and less than 10% at 10 minutes or more.

Metropolitan Barcelona

By looking at the metropolitan area it is possible to understand how the system is replicated and scaled, expanding with 52 more markets in 23 of the 35 remaining municipalities that make it up, so that Barcelona

can be considered a model for most cities, which have at least one public food market hall. For the remaining dozen municipalities without a market building, 73 weekly open-air markets that allow access to fresh food —fruits and vegetables— complement the system. Supermarkets, hypermarkets and shopping centres consolidate a system based on proximity that supplies food to the metropolis.

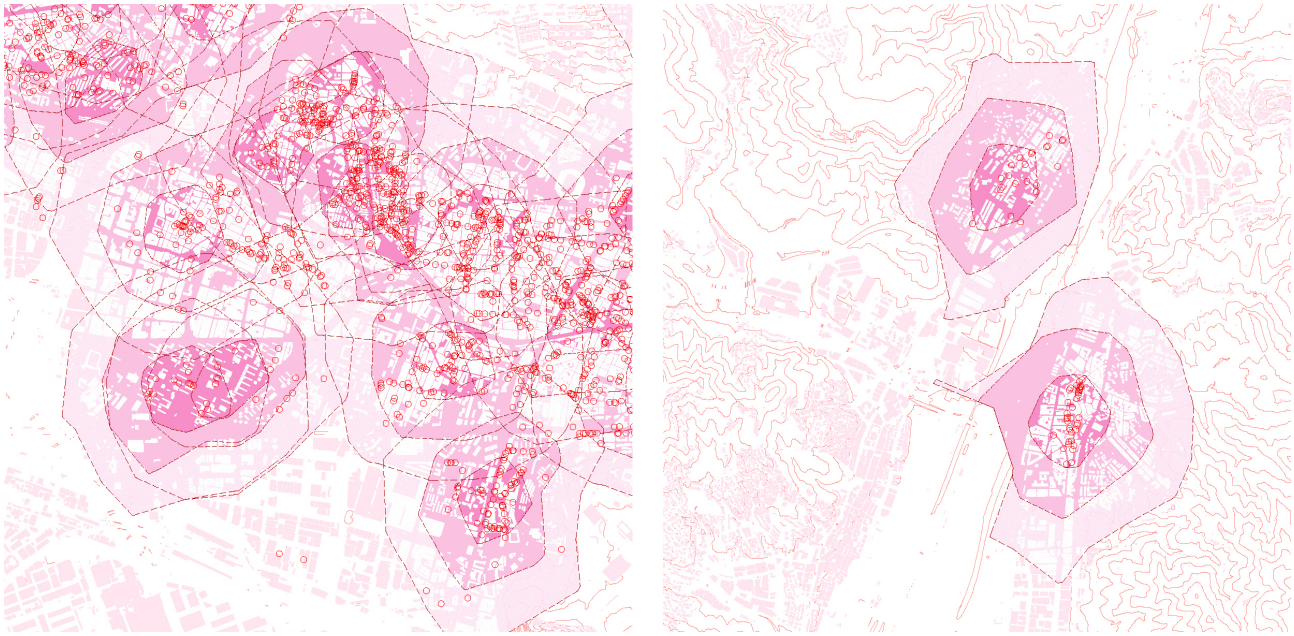

Figure 1: *Market halls and their areas of catchment (5 by 5 kilometres fragments of a map representing the complete metropolitan area). L'Hospitalet de Llobregat (left) and Pallejà-Sant Vicenç dels Horts-Molins de Rei (right), Source: Authors' elaboration.*

As in the previous paragraphs with the case of the city of Barcelona, the concept of proximity in relation to food systems can also be approached at the metropolitan scale from two points of view: looking at the proportion of the population of each municipality that has access to a market at distances of 5, 10 or 15 minutes —or more, in some cases—, and calculating how much population each market hall serves. L'Hospitalet de Llobregat is the city that makes the most of its metropolitan condition: taking advantage of its proximity and contiguity with Barcelona, the market halls can serve, in less than 5 minutes on foot, almost half of its inhabitants (49, 86%). In addition to this fact, all the inhabitants of the L'Hospitalet have a market in less than 15 minutes. Cornellà follows this path closely: although 1.88% of the population cannot reach a market in less than 15 ', more than half of the inhabitants (50.93%) have a market in less than 5' (Figure 1, left). In this sense, El Prat de Llobregat is also noteworthy, where 48.45% of the inhabitants have to walk less than 5 minutes to the nearest market and only 0.42% have to walk more than 15 '. Ripollet, Santa Coloma de Gramenet, Viladecans, Badia del Vallès and Barberà del Vallès, have a similar behaviour with respect to the population served and about 99% of their inhabitants have a public market in this distance of 15 'and, in these cases, most residents have to walk between 5 and 10 'to reach a market. At the other extreme of the question are the inhabitants of eight municipalities (Begues, Castellbisbal,

Cervelló, El Papiol, Sant Climent, Sant Vicenç dels Horts, Torrelles de Llobregat and La Palma de Cervelló), who have to walk more than 15 minutes to reach the nearest market hall (Figure 1, right).

In a general overview, by looking at the distribution of the population of each metropolitan city according to its proximity to a market hall, it is possible to observe that an average of 32.21% of metropolitan citizens have a municipal market building within a 5-minute walk; 45.83% of inhabitants have the closest market at a distance between 5 and 10 minutes; 13.9% have it within 15 minutes and only 8.06% of metropolitan citizens must travel a distance greater than 15 minutes to go shopping at the market. That is, 78.04% of the population (2,568,682 people) can buy their fresh food in a market less than 10 minutes from their place of residence, which makes the dense and compact Barcelona metropolis an example proximity in the supply of the most essential of goods: food.

A more specific analysis can be developed considering the demand to which buildings are subjected, which emphasizes the role of markets as catalyst of intensity in the urban space. Nine of the metropolitan markets have a third or more of the resident population in the same municipality within a 5-minute walk; and 38 of them to more than 50% of the municipal population within 15 minutes or less. In this case, the city of Barcelona distorts the figures, because due to its urban extension, the markets are efficient at the neighbourhood or district level, in a role that cannot be evaluated on the scale of the entire city. In this vein, the market with the most inhabitants in its immediate surroundings (400 meters) is Sant Antoni, in Barcelona (with 25,095 people), with more than 20 times more population served than the least, Volpelleres, in Sant Cugat del Vallès (with 1,191 people who live in the same 5 minute radius of proximity).

The architectural condition of market halls: a history in four steps

To understand how these synergies of agglutination can become a trigger that transforms the use of public space, it is convenient to look at the morphology of the buildings and the urban form that surrounds them. Market halls have gone throughout history from having an informal and parasitic character in relation to public space, to staying in specific sites that have increasingly fortified their enclosures, distancing them from an efficient thermodynamic behaviour, to recovering again, with the turn of the millennium, the most direct contact with the street and open public space.

During the first third of the nineteenth century, Barcelona's market spaces were taken off the streets and moved to regulated and specialized sites. Until then, they were located near the city gates: temporary food stalls occupied the access roads, so that as the number of farmers supplying food increased, the stalls branched out along the street layout. When vendors began by number to obstruct the circulation, they were relocated to sheltered places. The first experiences of reorganisation of market activities materialised in regular geometric spaces unrelated to the entanglement of the surrounding urban fabric and markets, therefore, gained in efficiency. With the subsequent construction of canopies, the markets were no longer

open sites and food gained protection from sun, rain, cold and heat, and adopted a non-sensory and aseptic condition, losing seasonality and, consequently, physical and cultural proximity to the territory that once fed the city (Fuertes and Gómez-Escoda, 2018, 2020a, 2020b).

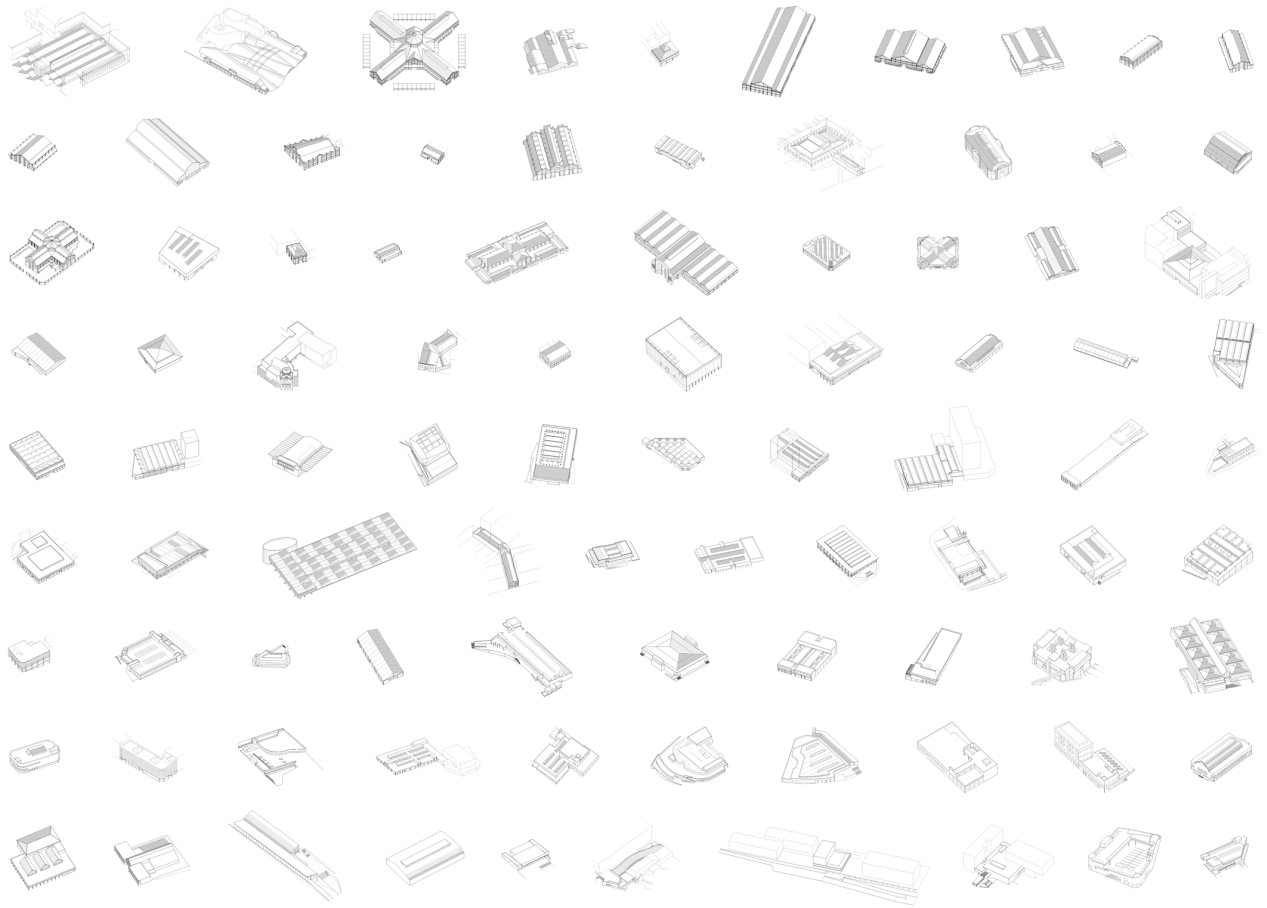

Figure 2: *The ninety market halls of the metropolis. Source: Authors' elaboration.*

Figure 2 shows the 90 markets in the metropolitan area drawn on the same scale, ordered according to the date of construction. It is possible to observe some common constructive logics that allow grouping them into families.

The markets built between 1840 and 1940 defined the canonical architectural model and wove a link with the environment inherited from the open-air markets (from left to right and top to bottom, the first 29 buildings in Figure 2, almost a third of the total). These markets behaved like thermodynamic devices that allowed the dissipation of heat and the renewal of air through permeable facades, creating a cool atmosphere according to the nature of the sheltered products. Their height and openings offered a quality of light that preserved the condition of open space and protected buyers from the weather and food from the adverse action of the sun.

The markets built in the second half of the twentieth century are characterised by a shift towards a progressive artificial indoor environment (from left to right and top to bottom, the 65 following buildings

displayed in Figure 2; that is, rows 4 to 8 complete, plus a building from the third row and three from the ninth). Their construction coincided with a transition from steel frame roofs to moulded reinforced concrete membranes, representing a critical review of the former architectural model that was considered depleted. Although they were designed with the aim of generating a new contemporary image, those concrete buildings were sheltered under rooftops that largely disregarded the character of old market halls: they reduced the volume of interior space and natural ventilation and, consequently, they prepared the appearance of a group of new markets housed under concrete slabs.

Starting in the 1990s, a new group of buildings were erected that became one of the pieces that made up a puzzle of varied facilities that can combine a library, a civic centre, a health centre, an elderly home or a nursery, becoming an example of how the domestication of ordinary food trade has reached a point where it can share roof with other activities. As a result, their architecture moved away from monumentality without renouncing a central position in this search for a mix of users and density of activities. In these cases, markets are part of new centralized operations, but not the main ingredients (from left to right and top to bottom, the last 6 buildings displayed in Figure 2). This group of markets is particularly important since its combination with other generally public uses increases the time slots of use of the buildings and, therefore, the intensity of the activity in the surrounding public space.

Food systems and public space: an ongoing investigation

Given the compactness of the metropolis, directly translated to the food system, synergies between the buildings can be examined and therefore market halls be considered triggers for the use of the urban space that connects them. The great variety of architectural typologies allows the integration in a wide range of urban fabrics: the first market halls were located in more compact and dense urban fabrics; while the latter respond to open block environments, even in the vicinity of rail and road infrastructures. This ability to be integrated in almost any type of fabric makes it possible to imagine a strategy that attends not only to parameters that make up a healthier city but also to provide the market halls system with greater wealth, so that the nodes can be grouped and complemented.

The investigation, still preliminary in this regard, shows that most metropolitan market halls have another market at an average minimum distance of 1,280 metres following pedestrian paths. The closest pair of buildings according to this criterion are Merca-2 and the Municipal Market in Bellvitge, both in L'Hospitalet de Llobregat, 400 meters from each other; the pair of markets that are the most distant from each other (in this condition of maximum proximity) are the Municipal Market of Sant Andreu de la Barca and the Municipal Market in Pallejà, 5 kilometres apart. Regardless of the metropolis and considering only the city of Barcelona, Montserrat and Trinitat are 600 metres from each other; on the other hand, Trinitat is also the closest market hall for Ciutat Meridiana, 2,200 metres apart, this being the greatest distance between nearby markets in the city.

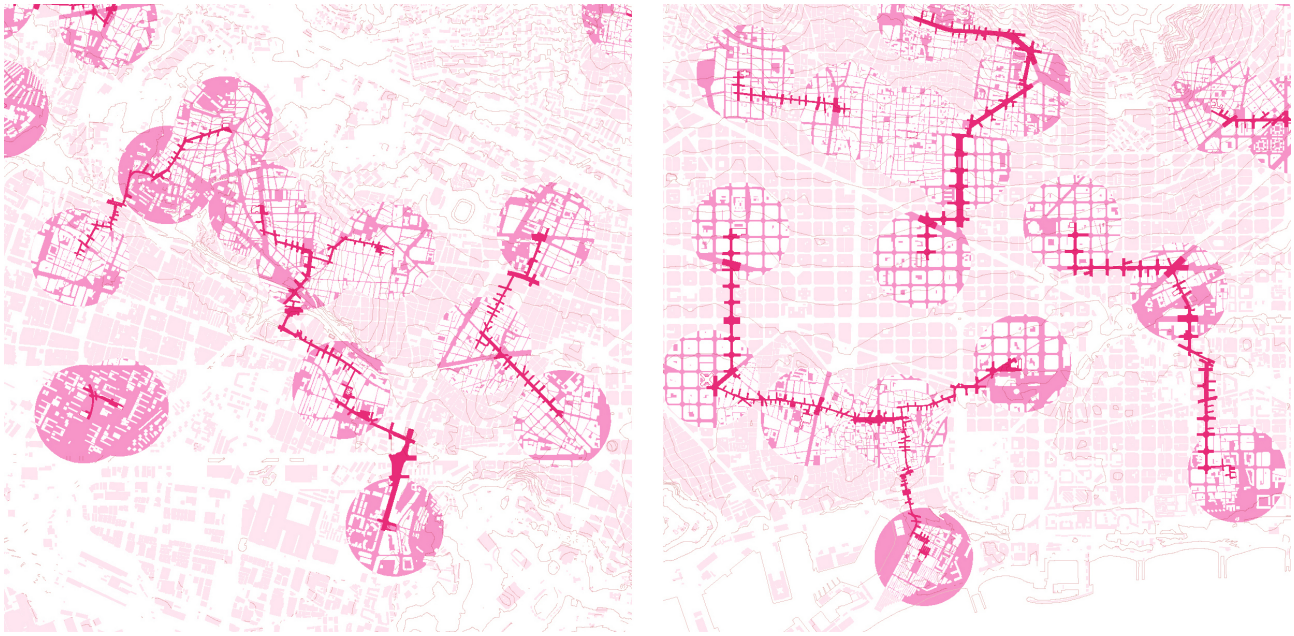

Figure 3: *Metropolitan synergies: shortest pedestrian paths between market halls (5 by 5 kilometres fragments of a map representing the complete metropolitan area). Source: Authors' elaboration.*

Figure 3 shows, on the left (in a frame similar to that of Figure 1, left), this hypothesis of a civic network close to Barcelona and made up of the market halls of L'Hospitalet, Esplugues and Cornellà —Marina, Santa Eulàlia, La Florida, Collblanc, Mercat del Centre, Can Vidalet, Can Serra, Sant Ildefons—. On the right is shown, at the same scale, a central fragment of Barcelona in which eighteen market halls —Galvany, Llibertat, Abaceria, Concepció, Estrella, Lesseps, Ninot, Sant Antoni, Sant Josep, Santa Caterina, Fort Pienc, Barceloneta, Sagrada Familia, Clot, Sant Martí, Poblenou, Guinardó and Felip II— appear. The 400-metres radius circumferences are intended to simplify the proximity area around each of the markets; a more abstract version of the 5-minute isochrones depicted in Figure 1.

This look at some fragments of the fabric on the same scale makes it is possible to imagine a system of nodes that exceed the limit of the buildings of market halls and signify fragments of the metropolis, turning the places of the food trade into the triggers for a higher quality public space.

Conclusions

Food supply elements guarantee access to fresh edibles and, in the first instance, qualify a territory as self-sufficient or well supplied. The design and territorial distribution of the elements that make up the system —grocery stores, supermarkets and market halls— determine the good performance, or the optimization of the minimum service character, of these essential activities. Reading the food supply system in relation to urban fabrics and in relation to the composition of the population is essential to detect weaknesses and opportunities for intervention: the detailed study should serve to propose new nodes for food provision; new synergies between existing system elements; or fixes in the set to increase its efficiency.

Acknowledgements

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