

Social sustainability through accessibility and equity

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Introduction

Spatial sustainability is a very interesting subject for research, particularly in view of its enormous potential public policy applicability. The **concept of accessibility** has an interesting dual dimension, being both **geographical and social**. The measurement of physical or geographical accessibility contributes to the knowledge of whether public services are being provided adequately – **equitably** – to serve the whole population of the study territory irrespective of where people live.

There are many different indicators of accessibility, mostly based on distance and user satisfaction. The main difficulty resides in the **measurement process** itself. The **use of Geographic Information System (GIS)** has helped to make this task easier and, consequently, to expand the possibilities of present and future analyses.

Scientific Debate

Of the different types of **service provided**, this proposal centres on ones that a number of authors consider fixed (the user goes to the service) and with free **universal access** (Mérenne-Shoymaket, 1996). These are **public services or basic ones**. It should also be pointed out that public services, together with community facilities and communication infrastructure, are currently one of the motors of **local and regional development** that make a clear contribution to territorial rebalancing and, consequently, to meeting social equality and equity criteria, fully justifying studies such as this which are of great practical use for decision-makers looking for sustainability.

Accessibility is one of the possible measures of social sustainability but it is not the only one. The **combination of public services and public transport gives an initial picture of the degree of equity** in a

study area that can serve as a starting point for subsequent, more detailed studies.

The subject of spatial equity and how to measure it through accessibility has seen little variation since the 1970s (Harvey, 1973; Domanski, 1979). The **main research aim** continues to be concerned with how **to achieve greater spatial equity without necessarily sacrificing a degree of economic efficiency and being environmentally sustainable**. Different types of models have been proposed, ranging from highly centralised ones to others that favour extreme dispersion, and from the most theoretical to the extremely applied, but what almost all of them have in common is **maximising the population served by government-backed public facilities, programmes or action**.

Harvey (1973) was one of the first geographers to define the term *spatial equity*, also known as *spatial justice*. Spatial justice depends on accessibility and on other factors such as supply quantity, the degree of availability of the services, etc. Both **efficiency and spatial equity** are particularly relevant for public services.

The economic activity location models that have been developed since the 1950s, particularly those for public services, attempt to find an optimum location to achieve the maximum return on the supply. Political factors associated with local decision-making or with very different public priorities have **created a network of public provision** of the main welfare services (health, education and social services) that does **not always respond to this optimum location**. Traditionally, the standard measurement tool has been the **ratio of variation of demand inputs** (such as pupils per teacher, doctors per thousand inhabitants, etc.). However, this bears little relation to measurements of accessibility, which clearly contribute to measuring the **efficiency and equity of the location of public services**.

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Nowadays, studies are adopting a more practical bent as an aid to decision-making. The location of services already exists and is difficult to change, although it can always be improved. **The best location for a service does not always entail moving it:** on occasion **better access** would be the answer. Improving the transport network and/or setting up new networks is essential nowadays to integrate and organise urban and metropolitan areas. What is known as **smart urban growth takes sustainability as the basis for urban planning**, but its bias towards managing growth and environmental aspects would seem to **sideline somewhat the problems of social equity** (Foster-Bey, 2002).

Accessibility is a basic geographical concept. **Equitable accessibility** is a complex matter (Crooks and Andrews, 2009). It is related to many questions such as decisions about assigning resources, the location of the service or activity, information, or even the quality of the service. In short, **it means how "easily" a user can obtain the service that he or she needs**. For this, **physical accessibility is important but so is its measurement in terms of time**, since as Miralles (2011) pointed out, the **social times** (mobility times) of the city "draw the everyday spaces of the metropolitan regions" (p. 127). **Travelling time contributes enormously to the citizens' view of the quality of the public services provided** and, therefore, the quality of their everyday life. Time is a measurement that relates activities to places (May and Thrift, 2001; Davoudi, 2009). The social use of time is closely related to the use of the city. **Proximity is an increasingly valued aspect of a territory's quality and of social welfare**.

It is true that much progress has been made on the subject of the impact of accessibility on the equitable provision of services, but the question of optimum travelling distances is still not clear. Schuurman *et al.* (2010) suggest that the term 'optimum' is best used when comparing methods rather than for seeking or modifying spatial accessibility. The key lies in the process of interpreting the results so that they will be useful in a possible political decision-making process.

The quest for **social equity, together with territorial equity in metropolitan areas, is key to achieving sustainable territories**, with all what that implies in terms of improving the inhabitants' quality of life (Pitarch, 2013).

Key messages for policy-makers

The use of accessibility as a measure of social sustainability (combined with some other topics that must also be considered) **shows considerable potential**. The most laborious aspect of it is undoubtedly drawing up a GIS that includes the **necessary information on the different territorial entities and elements**. The **basis** is the **location of the services and the structure of the (public) transport network**. This is completed with the most **detailed demographic, social and economic information** possible regarding the territory. If this information were available at street block or, even better, housing level, it would bring a substantial qualitative improvement in the results of the model.

At all events, **measuring equity through access to the education, health and social services by public transport provides very reliable results** even when the exact location of the demand (the population) is not available. This is compensated for to a certain extent by the correct location of the centre offering the service. The indicator of real-time accessibility is extraordinary suitable for drawing closer to the real situation, making it possible to arrive at conclusions that could not have been reached with a less precise method.

Once the various accessibility limits have been established, **the different zones and municipalities can be classified according to their greater or lesser equity**. Setting these limits is an important aspect for public policy-making at municipal level or, more appropriately, at metropolitan level. **The authorities can take action in two ways: they can provide or relocate the centres that offer these services and they can act on the public transport network**. Optimising the former and expanding the latter so that it reaches most of the territory would bring a **considerable improvement in the area's equity**.

Evidently, the **structure of the public transport network determines the results regarding equity, but that is the whole point**. A more detailed analysis of the demand would highlight the worst-affected social groups, generally children, young people and old people, the main users not only of public transport but also of the most important services. Consequently, a study of the socio-economic and demographic

characteristics of the neighbourhoods with the worst levels of equity would give a deeper insight into the real impact of the worst accessibility on particular population groups.

In short, measuring social sustainability through access to public services by public transport holds out **many and varied possibilities for the future**. One of the most interesting vistas it opens up is the ability **to run simulations to measure the consequences of new locations or closures**. The prospect of closing some centres may not necessarily be negative if the service is not reduced and is located efficiently and, above all, if territorial equity and social sustainability is borne in mind: it may even be improved.

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