

**Title:** Public preferences as a determinant of the optimal level of decentralisation in health care\*

**Author:** Carlota Quintal

**Affiliation:** FEUC and CEIS-UC – University of Coimbra (Portugal); University of York (UK)

**Contact:** qcarlota@fe.uc.pt

**Abstract:**

Better matching of service delivery to local preferences has been presented as an advantage of decentralised decision-making, in which this advantage has been grounded on competition (for mobile voters) among local decision-makers or on information asymmetry, between the central and local decision-makers, regarding those preferences. Our aim is to show, for the case of health care resource allocation, that public preferences themselves might affect the optimal level of decentralisation.

Participation in decision-making has been seen not only but also as an end in itself. People value participation *per se*, irrespective of its impact on final decisions. We thus consider that health related social welfare depends on total health and participation in health care resource allocation decisions.

We assume that there is a positive link between participation and decentralisation. We further admit that total health produced is lower with decentralised decision-making than with centralised decisions (due to information asymmetry about technical knowledge). In this context, decentralisation creates a trade-off between participation and health and the optimal level of participation (and, consequently, the optimal level of decentralisation) depends in this case on preferences for health *versus* participation. The optimal solution occurs when the marginal cost of participation, in terms of total health foregone, coincides with the marginal rate of substitution (the rate at which society is willing to substitute health for participation).

In conclusion, the optimal level of decentralisation might in fact depend on public preferences themselves even assuming that the central decision-maker is as well informed as local decision-makers about these preferences. If there is geographic diversity in preferences for health *versus* participation, the optimal level of decentralisation accordingly varies among regions.

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\* I am grateful to my supervisor, Professor Anthony Culyer, for helpful comments on the initial draft of this paper.

## 1. Introduction

From an economic point of view, decentralisation may be evaluated in terms of changes in social welfare or changes in allocative efficiency. Decentralisation is expected to improve allocative efficiency through better matching of service delivery to public preferences. The latter result has been grounded on two main economic approaches: one, involving competition among local decision-makers, and the other involving information asymmetry between the central and local decision-makers.

The former approach is related to the public choice theory and argues that local governments compete with each other for mobile voters (who are also taxpayers). In this context, decision-makers make choices with the objective of meeting the preferences of the median voter (Bossert, 1998). The alternative perspective is related to the principal-agent theory, drawing attention on information. In this case, the assumption is that local authorities, by living closer to the people that they serve, have a better knowledge and understanding of the preferences held by these people, compared to a central authority (Oates, 1999). Public preferences have consequently been a central piece of the economic rationales for decentralisation but only indirectly. In this paper, our aim is to show that public preferences themselves might be used as a basis to determine the optimal level of decentralisation, even when the central authority is as well informed as local decision-makers, about these preferences.

The literature on decentralisation has received inputs from different disciplines, such as politics, public administration, economics and others. In this paper, we combine features from economics and the political science. On one hand, we rely on information asymmetry between the central and local decision-makers (which is typically an economic argument). On the other hand, we include in our discussion the democratic argument (drawn from the political science) that decentralisation increases participation in decision-making, which in turn is considered a good thing on its own.

We consider a representative resident and focus on the decentralisation of decisions regarding the allocation of a fixed amount of resources among alternative health care interventions. Health care interventions may represent high technology curative interventions like heart and lung transplantation; or medicines (both for preventive or curative purposes); it might represent screening programmes and others.

We assume that there is perfect information about preferences, while assuming that there is imperfect information on technical matters, more specifically, there is

imperfect information in terms of the amount of health effectiveness that might be obtained with a given amount of resources. Here, the critical factor here is the degree of technicality of information, as noted by Hurley *et al.* (1995). Assessing the ability of alternative health care interventions to reach desired ends requires expertise and technical skills. What happens in contexts of decentralisation is that the concentration of scarce expertise might generate information asymmetry in favour of central authorities. It has also been suggested, in the human resource and management literature, that the recruitment of skilled officials is more difficult at the local level (De Vries, 2000). We therefore assume that central authorities are better informed than local decision-makers, regarding technical information.

Decentralisation is said to foster political participation and a sense of democratic community (Inman and Rubinfeld, 1997) and to enhance community participation (Hutchinson and LaFond, 2004). Community participation might be viewed as a means of improving information about preferences as well as a means of strengthening accountability of local authorities. But the 'local democracy' argument sees participation as a good thing on its own. We thus assume, in line with the political science, that there is a positive link between decentralisation and participation in decision-making and that participation *per se* is valuable to individuals.

Wailoo and Anand (2005), for instance, say that the most consistent finding in all research into procedural justice is that individuals value involvement in decision-making processes, whether direct or through representatives. Individuals prefer to be accorded a voice in decision-making because it means that their opinion is respected, irrespective of the effect that it might have on consequences. These authors conclude, based on a self-administered postal questionnaire (returned by 118 individuals residents in the South East of England), that there is a moderate level of support for public involvement in decision-making.

Preferences determine which arguments affect, and to what extent, social welfare. In our discussion, we assume that preferences are such that social welfare depends on total health and on participation in decision-making regarding the allocation of health care resources. The former corresponds to an outcome-related sort of preference (i.e. it focuses on health as the outcome of health care resource allocation). Preferences for participation, on the other hand, are associated with processes. Here, the relevant matter is how allocation decisions are made and not the final outcome of these same decisions.

There are several definitions of community participation. Harrison and Mort (1998), for instance, distinguish between ‘consultation’ and ‘involvement’. Consultation is seen as an attempt to seek the views of a group of people about some potentially important policy decisions and involvement is seen as an attempt to include a group of people in the planning, eventually the management, of services. In Litva *et al.* (2002), we find a scale of definitions of participation, ranging from manipulation (when officials seek the support for their plans) and informing the public to higher degrees such as ‘placation’, in which there is a guarantee that citizens’ views will be heard but no guarantee that they will change the course of action. The highest levels of participation imply sharing the responsibility for decisions or even delegating power.

Litva *et al.* (2002) argue that the concept of participation that emerged from the evidence in their study (English sample) does not fit the existing proposals. They argue that preferences for participation point to a form of involvement that would be better characterised as ‘accountable consultation’, which implies “contribution to decisions by expressing views, a guarantee that this contribution will be heard, no responsibility for the decision but an explanation of the rationale for the decision ultimately made”.

In the current paper, we do not assume anything in particular regarding the specific form of participation. It should however be a kind of participation that increases with decentralisation and which affects social welfare on its own.

We consider that there is a central decision-maker (that might be viewed as the central government or the department of health) and a jurisdiction  $j$ . By jurisdiction we mean a sub-national group of people governed by a decision-making body that is a budget holder and that enjoys some autonomy in terms of health care resource allocation.

The total amount of resources available to health care is fixed. The local budget is wholly funded from central transfers (no funds are raised at the local level, whether through taxes or user fees). Thus, decentralisation applies to resource allocation decisions but not to revenue raising powers.

## **2. Deriving the optimal level of decentralisation**

Based on the positive link between decentralisation and participation, we define the variable ‘participation in jurisdiction  $j$ ’,  $p_j$ , as a function of decentralisation in

jurisdiction  $j$ :  $p_j = p(d_j)$ , where  $\frac{\partial p_j}{\partial d_j} > 0$ .  $d_j$  increases as decision-making power is transferred from the centre to the local level and the amount of resources forming the local budget increases. We can think of  $p_j$  as a continuous variable such that  $0 \leq p_j \leq 1$ . If decisions, regarding the allocation of resources to  $j$ 's representative resident and among alternative health care interventions, are all taken at the centre and involve the whole health care budget, then participation is at its lowest level, that is,  $p_j = 0$  and the local feasibility set of interventions is empty; on the contrary, if the whole budget is allocated to  $j$ 's representative resident at the local level, then participation reaches its maximum level;  $p_j = 1$ ; and the local feasibility set of interventions corresponds to the full set of alternative interventions.

Ratios that indicate the share of total expenditures managed locally have been used to represent the degree of decentralisation (e.g. Petretto, 2000; Robalino *et al.*, 2001). The variable  $d_j$  above is related to this definition of decentralisation, given that more decentralisation means that a greater share of total resources is available at the local level, however, in our framework and due to information asymmetry, it also matters which health care interventions form the local feasibility set of interventions.

Decentralisation 'produces' participation but, given the assumption of information asymmetry regarding technical knowledge, participation has an opportunity cost in terms health foregone.

Considering that participation and health are two outcomes relevant to social welfare, we define the production possibility frontier, which shows for each possible level of participation in jurisdiction  $j$ , the maximum health gain (or health effectiveness),  $h_j$ , that might be achieved in this jurisdiction, given the total amount of resources available to health care and technology.

When there is no participation,  $p_j = 0$  and the maximum health gain that might be achieved corresponds to total health gain produced under full centralisation (when the local budget is null). With total decentralisation (the local budget now corresponds to the total amount of resources available to health care), participation in  $j$  assumes its maximum value,  $p_j = 1$ , but given the assumption about information asymmetry in terms of technical knowledge, the maximum health gain that might be obtained is lower than that achieved with total centralisation.

Because the production possibility frontier shows the maximum health gain that might be achieved in jurisdiction  $j$ , for each level of participation, the assumption is that the devolution of decision power to local authorities is that that maximises health, that is, the transfer of responsibilities starts with those decisions (interventions) where the loss of health effectiveness due to information asymmetry is lower; successive reductions in health effectiveness become larger as participation increases, meaning that the production possibility frontier is concave to the origin.

Social welfare in jurisdiction  $j$  is a function of both health gain and participation,  $SW_j = SW(h_j, p_j)$ , in which these two dimensions positively affect social welfare. An

increase in  $j$ 's participation increases  $j$ 's social welfare:  $\frac{\partial SW_j}{\partial p_j} > 0$ ; and an increase in

$j$ 's health gain increases  $j$ 's social welfare:  $\frac{\partial SW_j}{\partial h_j} > 0$ . However, when participation

increases, although it directly increases social welfare, it has an opportunity cost in terms of health gain foregone. Decentralisation thus creates a trade-off between social welfare derived from health and social welfare derived from participation.

In figure 1, we illustrate the derivation of the optimal level of participation, in jurisdiction  $j$ ,  $p_j^*$ , diagrammatically. In the horizontal axis we represent the level of participation and, in the vertical axis we have the level of health gain. The health gain might be normalised such that it is zero when  $p_j = 1$  and one when  $p_j = 0$ .

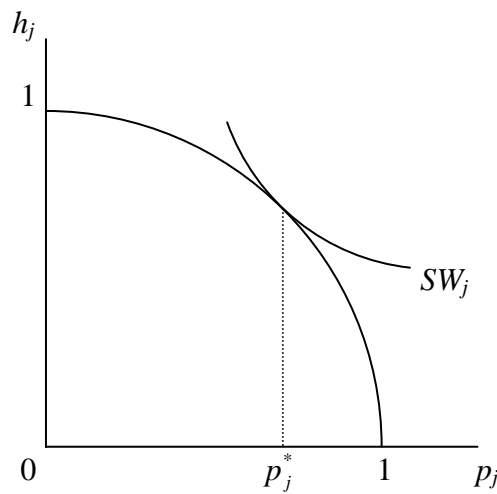


Figure 1- The impact of public preferences on the optimal level of participation/decentralisation

Although there might be a preferred level of participation,  $p_j^P$ , beyond which social welfare decreases, here we assume that more participation is always preferred to less participation. This assumption means that  $p_j^P$  is equal to 1 (the preferred level of  $p_j$  coincides with its maximum possible value).

The indifference curve shown in figure 1 has a negative slope, indicating that both participation and health matter for social welfare in jurisdiction  $j$ . So, if there is a decrease in participation, social welfare is kept unchanged only if health effectiveness increases, to compensate for the former welfare loss, and vice-versa. The optimal level of participation occurs when an indifference curve is tangential to the production possibility frontier. I.e., when the slope of the latter is the same as the slope of the

indifference curve:  $\frac{\partial h_j}{\partial p_j} = -\frac{\partial SW_j}{\partial p_j} \div \frac{\partial SW_j}{\partial h_j}$ . In other words, the optimal level of

participation is achieved when the marginal cost of participation, in terms of health gain foregone, is equal to the marginal rate of substitution (the rate at which society is willing to substitute health gain for participation).

Given the optimal level of participation,  $p_j^*$ , the optimal level of decentralisation of decisions,  $d_j^*$ , is derived from the relationship  $p_j = p(d_j)$ . The amount of resources and particular decisions that are transferred to the local decision-maker's sphere of responsibilities are those underlying the production possibility frontier up to  $p_j^*$ .

The convex shape of the indifference curve, in figure 1, is not relevant to develop our point. It simply means that the more health society has, it requires greater additional amounts of health to give up of equal additional amounts of participation. But we could obtain the same  $p_j^*$  with a linear indifference curve, provided that  $p_j^*$  corresponded to the point of tangency between the indifference curve and the production possibility frontier. A linear indifference curve implies that the rate at which society is willing to trade-off participation against health effectiveness is the same for all values of  $p_j$  and  $h_j$ .

If the preferred level of participation,  $p_j^P$  is lower than 1, in which participation above  $p_j^P$  has a null or a negative impact on social welfare, the previous analysis still applies for values of  $p_j$  between 0 and  $p_j^P$ . In terms of the diagrammatic

representation, the implication for figure 1 is that we might have a horizontal segment of the indifference curve for values of  $p_j$  above  $p_j^P$  or we might have an upward sloping segment, above  $p_j^P$ . In any case, given that the frontier is concave, these differences do not affect the optimal solution ( $p_j^*$  still lies between 0 and  $p_j^P$ , irrespective of the latter being equal to, or lower than, 1).

In figure 2, we represent two indifference curves with different slopes, their purpose being to show the effect of different preferences for participation *versus* health on the optimal level of decentralisation. The production possibility frontier is the same in both situations. The indifference curve identified by  $SW_B$  is flatter than the indifference curve identified by  $SW_A$ . Thus, the same amount of participation is traded-off against a greater amount of health for the case of  $SW_A$  than for the case of  $SW_B$ . This implies that participation is more valuable, compared to health, in the former case than in the latter. So, with everything else the same, different preferences regarding participation *versus* health, lead to different optimal levels of participation, where  $p_A^* > p_B^*$ . Consequently, the optimal level of decentralisation also differs between these two cases:  $d_A^* > d_B^*$ .

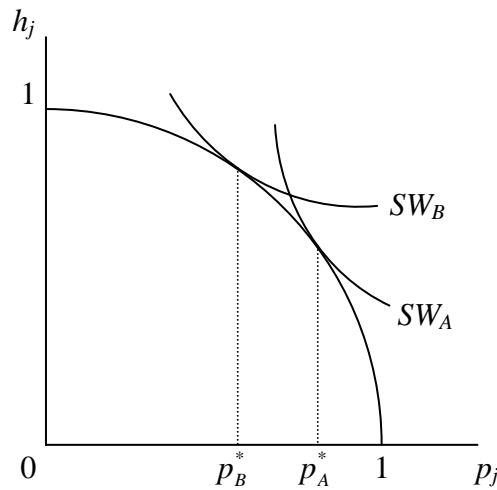


Figure 2- Differences across local preferences lead to different optimal levels of participation / decentralisation

In the current framework, diversity between jurisdictions, in terms of local preferences for participation *versus* health, generates different optimal levels of decentralisation. Consider figure 3, in which we represent the social indifference curves for two jurisdictions, A and B. The frontier is assumed to be the same for both



jurisdictions. Given local preferences, the optimal level of participation, and consequently, the optimal level of decentralisation, in  $A$  is greater than in  $B$ :  $p_A^* > p_B^*$  and  $d_A^* > d_B^*$ . Suppose that, despite these difference in preferences, a unique level of decentralisation is set for both jurisdictions, for example,  $d_j = \bar{d}$ , such that  $d_B^* < \bar{d} < d_A^*$ , for  $j=A,B$ . The level of participation is  $\bar{p} = p(\bar{d})$  for both jurisdictions. In this situation, the loss of social welfare in  $A$  is given, in figure 3, by the difference  $SW_A^1 - SW_A^0$  and the loss of social welfare in  $B$  is given by  $SW_B^1 - SW_B^0$ , compared to the case in which different levels of decentralisation are implemented.

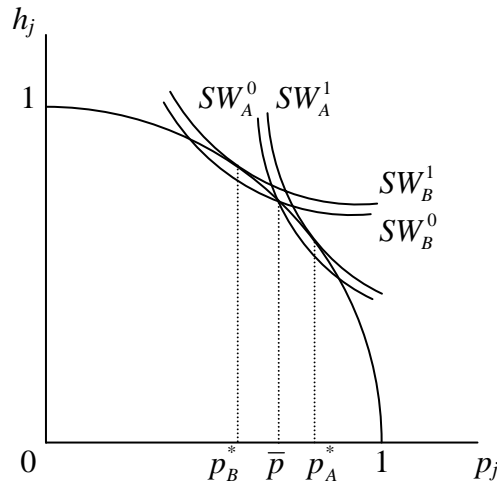


Figure 3- The loss of social welfare created by a uniform level of decentralisation

### 3. Discussion

In this paper, we have sought to show that public preferences themselves might be used as a basis to determine the optimal level of decentralisation. Under the set up proposed, we have in fact seen that preferences might directly determine the optimal level of decentralisation in health care resource allocation. Moreover, while the traditional argument of welfare gains through better matching of service delivery to local preferences depends on the extent to which there is variation in preferences across the population, in the current paper, the impact of preferences on the optimal level of decentralisation does not depend on the existence of that variation.

However, our results are based on the assumption that decentralisation positively

affects participation but decentralisation might not always be accompanied by the necessary conditions to guarantee an effective and meaningful community participation in decisions. Some problems are more likely in poor countries, where community participation is widely recognised as a problem due to factors such as political inequality and dependency, illiteracy, poverty, among others (Smith, B. 1997). But in other contexts, it might happen that preferences for participation are partly contrary to the local democracy argument. Wailoo and Anand (2005), for instance, found a statistically significant difference between responses relating to government decision-making and each of other two levels of decision-making. They say that respondents feel that it is more important for governmental rationing decisions to be made in consultation with the public than for health authorities and doctors.

Regarding the above mentioned idea of different levels of decentralisation across regions, it has been mentioned, in a different context, by Bossert (1998). This author argues that Putman's (1993) concept of 'social capital' (network of civic institutions) applied to decentralisation might lead us to the possible conclusion that decentralisation will work only in areas with strong histories of social capital and that the rest of the country should be centralised – a conclusion that, according to the author, is not likely to be politically viable. Differences in degrees of decentralisation across localities might however be more acceptable if they stem from differences in local preferences. An example of different levels of decentralisation in health care concerns the first phase of health decentralisation (1983-1988), in Mexico, when the states were given the option to decentralise or continue depending on the federal government; about half of the states (17 out of 30) decided to remain centralised (Homedes and Ugalde, 2005).

Eventually, different levels of decentralisation would be less acceptable if they derived from differences in local capacity to deal with technical knowledge. Admitting this possibility, we could obtain different optimal levels of decentralisation, in figure 3, with similar preferences but different levels of X-efficiency (in this case, the frontier would vary between jurisdictions). The question is that, in this latter case, one could argue that obtaining the same optimal level of decentralisation for both jurisdictions was a matter of investing more in human resources, at the local level. Differently, variation in preferences does not correspond to short run constraints; preferences are deeply held values that cannot simply be harmonised.

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