

## Public Food Procurement: A Systematic Literature Review

Gianluca Stefani<sup>1</sup>, Marco Tiberti<sup>2</sup>, Ginevra Virginia Lombardi<sup>1</sup>, Leonardo Cei<sup>1</sup>,  
and Giovanna Sacchi<sup>1</sup>

<sup>1</sup>University of Florence, Department of Economics and Management, Italy

<sup>2</sup>World Bank, USA

[gstefani@unifi.it](mailto:gstefani@unifi.it); [mtiberti@worldbank.org](mailto:mtiberti@worldbank.org); [gvlombardi@unifi.it](mailto:gvlombardi@unifi.it); [Leonardo.cei@unifi.it](mailto:Leonardo.cei@unifi.it); [Giovanna.sacchi@unifi.it](mailto:Giovanna.sacchi@unifi.it)

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### ABSTRACT

Public food procurement (PFP) is a policy instrument that has been used to “link” different objectives at once. We undertake a first systematic review of the scientific literature that deals with PFP in order to 1.) assess the progress of the scientific literature concerning PFP in different areas of the world, 2.) look for differences among them and try to identify the topics on which these studies focuses the most. Accordingly, our research questions deal with the definition of the main conceptual dimensions developed by the academic literature on PFP as well as with the geographical and temporal differences among the dimensions identified. The first evidence is the increase in the number of papers per year during the last decade. Furthermore, the literature on PFP is centred on the concepts of localisation and structured demand and its impacts on food chain actors, on citizen-consumers and on sustainability at large. As a main research result, we provide a conceptual framework of the PFP literature largely based on the concept of linkage that has been first proposed in law and regulation studies.

*Keywords: Public procurement, Food, Sustainability, Health*

### 1 Introduction\*

The use by governments of their purchasing power to achieve social objectives is a practice that dates back to the 19th centuries when regulations were issued in both the USA and England establishing fair wages or maximum working hours per day for firms working under public contracts (McCrudden, 2004). Public food procurement (PFP) is another example of how a policy instrument has been used to “link” different objectives at once; the term “linkage” is used in law studies to describe the link between procurement and social policies. It should not be confused with “conditionality” as it “goes beyond simply awarding contracts on certain conditions, and extends to include, for example, the definition of the contract, the qualifications of contractors, and the criteria for the award of the contract” (McCrudden, 2004).

When in the 1980s economic globalization has imposed on national states global economic constraints making these linkages a source of financial inefficiency, contradictions and trade off have arisen creating a fertile arena for studies that span from sociology and economics to management and political science (Erridge and Greer, 2002; Murray, 2008, 2009).

Healthy nutrition policy and sustainability are the main principles inspiring PFP policies in EU and in the USA. Often, these principles do not match the regulations aimed at guaranteeing free trade and

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competitiveness for public contracts to enhance public expenditure efficiency, regulations developed to cope with global economic constraints.

In the EU until the beginning of 1990s the directives referring to public supply contracts have been structured to avoid market distortive effects providing barriers to the application of sustainability principles in the Public Food Procurement<sup>†</sup>. The four EU directives<sup>‡</sup>, designed to homogenize the procedure at member states level, are based on the application of the concepts of “lower prices” and of “the most economically advantageous tender”, that implies the rejection of any non-economic objectives such as sustainability or geographical preferences. In the legislation of 2000s, following the Court of Justice case law, for the first time the contracting authorities were allowed to take into account the production techniques, being able to select the environmentally friend tender rather than the cheaper one (Directive 2004/18/EC). This regulatory environment allows the contracting authorities to require special condition in the contract such as environmental and social issues. This legal framework has given impulse to the public procurement strategies toward sustainable objectives. In several member states, (Sweden, Finland, Denmark, France and Italy) for instance, public food procurement was addressed toward local traditional food, organic and healthy food in schools and hospitals (see for example Caranta and Tribus, 2010). Currently, the PFP in the EU is mainly oriented to promote sustainability and food quality of served meals at large. This development has been acknowledged as efficient practise toward sustainability even by international agencies (OCDE, 2016)

Conversely, PFP in the USA, at federal, national and local level has been so far mainly intended to face nutrition and health issues of young population diet (Harvie et al., 2009). Since 1946 a permanent program, the National School Lunch Program (NSLP), was establish by the National School Lunch Act to provide primary and secondary school students with lunch meals. The program is funded by US Department of Agriculture (USDA) as a reimbursement by states to Local School Food Authorities. Different subsidy categories are accounted corresponding to different reimbursement rate to the Local School Food Authorities (this program is usually conducted at school district level). On the basis of their gross household income students are certified as “free”, “reduced price” and “paid”. Furthermore, in 1966, a School Breakfast Program (SBP) was established with analogous objectives, structure and subsidies. This program has encountered limited participation among students. Both programs are oriented to enhance nutrition standards of served meals through a monitoring activity developed by USDA with the School Nutrition Dietary Assessment Study.

Finally, in the 1990s Farm to School Program was established to connect school to local agriculture, to enhance the nutritional quality of the school meals, and to cope with the financial constraint of school food service programs. Through this program, schools may base their procurement on geographical preference in order to select local products instead of cheaper products.

The USA legislation provide also a specific example of linkage between a command and control regulation and public procurement. Differently from earlier wage antidiscrimination laws, this time it is the PFP legislation that came first and was subsequently complemented by a command and control regulation. Since the main objective of PFP in the United States is to guarantee healthy food and balanced dietary intake to the students, specific attention is given to “competitive food” sold in the school environment (cafeterias, vending machine, school store). In fact, students may prefer to eat this food instead of nutritionally balanced healthy meals provided by NSLP and SBP; for those reasons the USDA is establishing federal nutritional guidelines for competitive food and state and school district have developed regulations to make these foods healthier.

The present contribution is focused on two main research questions as follows:

RQ 1. Which are the main conceptual dimensions developed by the academic literature on PFP? and

RQ 2. How those dimensions are distributed according to geographical areas and temporal differences?

Consequently, the aim of this literature review is to i) assess the progress of the purely scientific literature concerning PFP in different areas of the world, ii) look for differences among them and try to identify the topics on which these studies focuses the most, and iii) develop a conceptual framework capturing salient aspects of selected research according to the approach of previous studies (see in particular Seuring and Müller, 2008). In order to do so, a clear methodology, explained in the following section, will be applied. The main results and their discussion will follow in the next ones, while, in the last section, conclusions are drawn.

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<sup>†</sup> However social issues were not absent in EU countries public procurement legislations, one example is the linkage between procurement and non-discrimination requirements in the field of gender equality policies in the 1980s (McCrudden, 2004)

<sup>‡</sup> Council Directive 93/36/EEC, Council Directive 92/50/EEC, Council Directive 93/37/ EEC, Council Directive 93/38/EEC

## 2 Materials and Methods

### 2.1 Research strategy

The databases Web of Science, CAB Abstract, Scopus, Emerald Insight, Sociological Abstract were explored for search terms. We conducted the inquiry on Metalib, an informational portal through which several bibliographic resources can be consulted at once.

Research results were assessed for relevance in a three-step process of comparing titles, keywords and abstract by means of a structured keywords search.

The first step regarded the selection of keywords. In details the selected keywords have been “public”, “food” and “procurement”. We picked out articles in which at least two of these words were mentioned in title, abstract or keywords<sup>§</sup>. Hence, articles were selected or discarded according to their main subject after scrutinizing the abstracts. For example, articles presenting the words “food” and “procurement” in title or keywords and dealing with the food procurement in public schools were further selected, while articles dealing with the food procurement in restaurants were dropped. Procurements that are not strictly public include, beyond others, utilities as well as hospitals’ and educational institutions’ procurements. In general, those articles were excluded when they clearly referred to the private sector or when they put the purchased product at their focus. Otherwise, articles about food procurement were included, if they focused on public procurement, its methods, effects, good or bad practices.

Once the keywords principle was identified it has been necessary to set, as a second step, a further list of criteria to conduct a first practical screening using fields such as language or date (Fink, 2005). All publications found were screened according to whether they:

- 1) were published on peer-reviewed journals and the articles written in English. For the peer-reviewed journal articles, it is assumed that high impact researches on the subject of public food procurement will have been translated into English. Therefore, it is believed that no high impact papers will be disregarded from the review based on the language restriction.
- 2) were not selected on a limited period frame. Anyway, articles have been published almost exclusively in the last decade.
- 3) were restricted to the subject area of Social Sciences.

Finally, the third step was related to the judgement and the final inclusion/exclusion decision, which has been drawn up through a review of the abstracts or, when necessary, the full text of the articles. The general principle is that this review is not focused on what is bought, but on how it is bought. Indeed, we excluded articles whose only subject was, for example, the nutritional impact of food procurement by a public institution, thus only focusing on the last ring of the chain without any interest on how provision occurs.

We did not impose other exclusion criteria such as location, government level, public sector, social science discipline, topic, methodology, data collection, research strategy.

The initial database consisted of 91 articles, and 35 articles were dropped after abstracts examination, because they were off-topics of our research subject. We added other studies found in the references of the remaining 56 articles and those not found on publisher websites. We found 21 further articles. The final database consisted of 77 articles, which were then coded according to eleven main categories and subsequently analysed by means of descriptive statistics using the software SPSS. Analysis focused on describing the literature in terms of publications, research designs and topics, as well as on discovering trends and assessing differences across countries, as it will be detailed in the next section.

## 3 Results

In a first step of the analysis we used descriptive dimensions such as year of publication, geographical coverage, pertinent social science discipline and methodology to classify the papers. These aspects are quite evident per se.

Methodological aspects were subdivided into three sub dimensions: *Methodology* (qualitative or quantitative), *Data collection methods* and *Research strategy*.

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<sup>§</sup> Following a suggestion by a reviewer we further explored the possibility to find more article using the following strings: “governmental procurement”, “local procurement”, “federal procurement”, “public contracting” and “public acquisition management”. However, given the necessity for our purpose to have results connected with food, we found only few more articles that we took into account.

Subsequently, we addressed more problematic dimensions of the literature which require a more interpretative approach by the researcher and application of content analysis techniques.

### 3.1 Content Analysis

Content analysis is “a phase in information processing in which communication content is transformed, through objective and systematic application of categorization rules, into data that can be summarized and compared” (Paisley, 1969, p. 133). The three specific characteristics of content analysis are the following: being objective, systematic and quantitative (Kassarjian, 1977).

We established a set of criteria either referring to previous systematic review on public procurement (Lange, 2014) or to inductively work on the papers in a first round of analysis. At the end of the first round, criteria were refined and clarified in order to prepare a coding schedule and a coding manual (Bryman, 2001) to inform the second round of analysis. Reliability was sought by having all five authors discussing and refining together the categories at the beginning and at the end of the first round and whenever it was deemed necessary during the second round. Each paper could be assigned to up to 5 topics.

A total of 17 topics were initially retained, three of them (corporate responsibility, nudging and waste) were grouped in the category “other” because of their low occurrence (less than 5% of the papers). The remaining 15 topics were aggregated in 6 broad areas. A first group relates to the type of food procured (organic, local and quality) and the policy or managerial actions necessary to secure this quality of food for the public canteens (FP). A second group (POL) deals with specific types of policies or initiatives (such as farm to school projects or health projects). A third one (SUPP) gathers all topics around the concept of food supply chain (food supply chain and small business) with what concern the actors along the chain as well as the barriers and the benefits perceived by the different actors. Another group is about policy governance, contracts design and regulatory issues at large (GOV). The topic about cost and benefits of the policies (COBE) stands alone and include all types of impact analysis. Finally, a group of three topics relates to social and more generally sustainability issues (SUST).

### 3.2 Descriptive Analysis

The body of the literature comprises 77 papers from 2000 onward. Most of the papers have been published in after 2009 showing a growing interest of the scientific community in the different issues related to Public Food procurement.

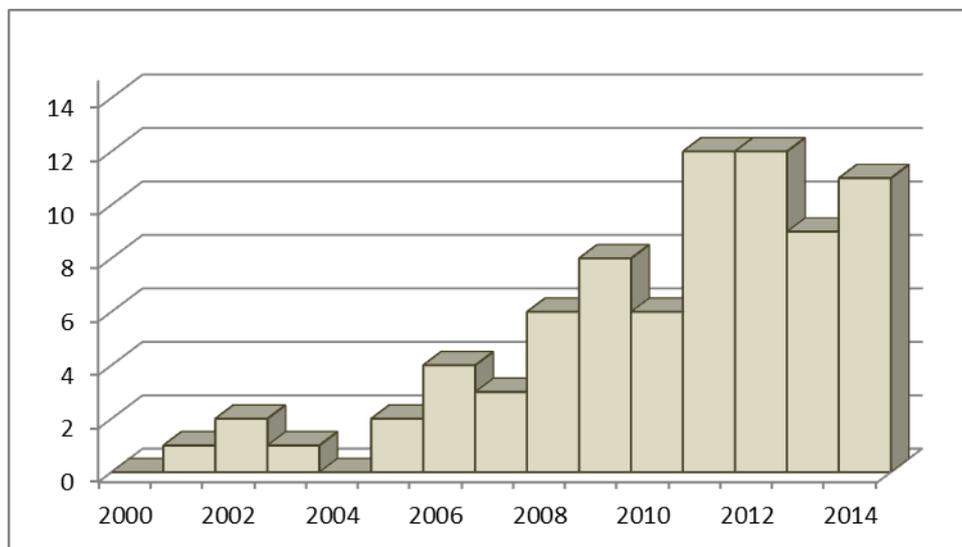


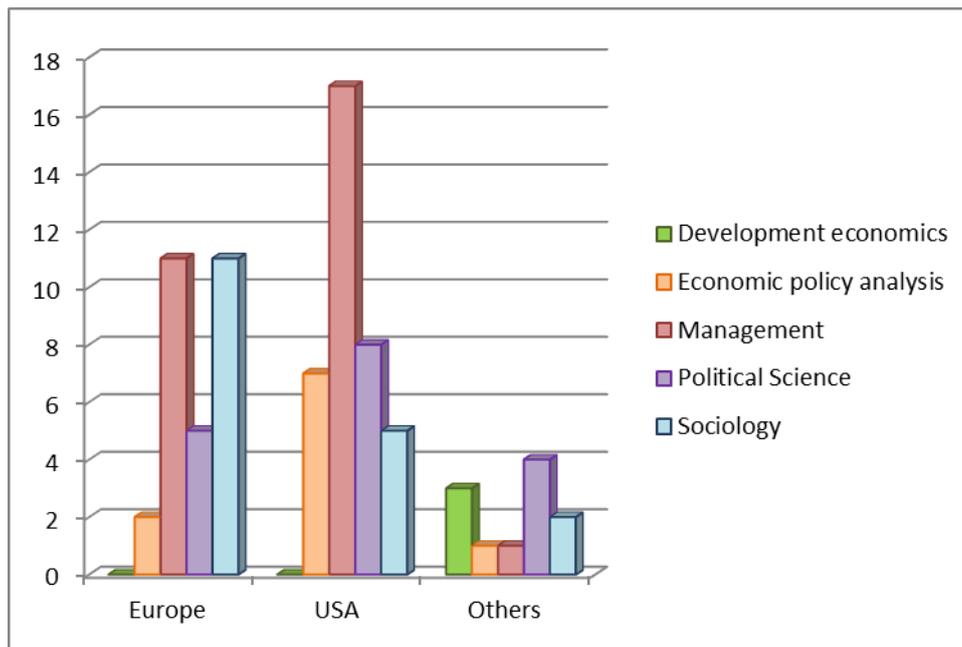
Figure 1. Number of articles per year  
Source: elaboration by authors

The geographical coverage of the papers is evenly split between USA (37 papers) and Europe (29 papers), developing countries are less represented probably because of the inclusion rules adopted for this review (see previous section). Within Europe, most of the papers refer to northern countries possibly because public food procurement initiatives are more common there. A notable exception being Italy, which is the object of several papers.

Most papers (48) are specifically related to the Education sector (notably to farm to school programs) while the Health sector is represented by only 7 specific papers. The remaining 19 papers either deal with

both sectors or with public canteen at large. The specific interest of researchers on the education sector is partly explained by the relevant number of farm to school studies that are at the intersection of the public procurement and the short supply chain literature. The latter has been extensively searched from sociologists both in the USA and in Europe (see for example Sonnino, 2009 and 2010, Allen and Guthman, 2006).

Different social science disciplines appear to be interested in Public food procurement issues. The attribution of papers to each discipline have been made on the basis of both content of the paper and type of journal. The lion share is played by the Management Sciences with 29 papers; the rest is evenly split among Political Science, Sociology and Economics with 10-18 papers each. This result is probably due to the specific arrangements requested in order to manage the procurement process of food with specific qualities. It is worth noticing that the distribution of papers across disciplines is not invariant with respect to geographical areas. While in the USA management studies are more diffuse (45% of papers) in Europe one third of the papers is attributable to sociological sciences.



**Figure 2.** Number of articles per academic discipline and Geographical coverage  
Source: elaboration by authors

Not surprisingly, qualitative methods are slightly preponderant on quantitative ones and this feature is well mirrored into the plurality of data collection methods and research strategies employed.

**Table 1.**  
Data collection Methods

Methodology	case	% on N
Experiment	4	5%
Questionnaire	16	21%
Secondary analysis	17	22%
Interview and focus group	22	29%
Literature review	14	18%
Other	4	5%
<b>Total</b>	<b>77</b>	<b>100%</b>

Source: elaboration by authors

**Table 2.**  
Research Strategy

<b>Research Type</b>	<b>case</b>	<b>% on N</b>
Quantitative Modelling	8	10%
Survey	12	16%
Single case study	23	30%
Multiple case study	10	13%
Theoretical	3	4%
Literature study	13	17%
other	8	10%
<b>Total</b>	<b>77</b>	<b>100%</b>

Source: elaboration by authors

There is a majority of single and multiple case studies that on the one hand provide a better insight on the multiple and specific aspects of the different existing projects, on the other hand do not allow a generalization of the findings or of the policy assessment at higher levels (country or state not to say EU or USA). The relative high number of literature studies is striking given the only recent interest in the theme. However, these reviews (e.g. Joshi and Azuma, 2008) beside being limited in scope, consider mostly “grey” literature, which is far larger than the one published on scientific journals we consider here.

### **3.3 Topics**

Content analysis of the papers showed that more than one third of them deal either with farm to school or nutrition and health programs highlighting the importance of this type of specific projects. Not surprisingly, given the large share of management studies reviewed, another popular topic among the PFP literature is the one we denominated food supply chain (SUPP). This theme collects the topics of chain actors and the barriers and benefits they experience with PFP. Barriers and benefits faced by farmers or caterers are the object of several management studies that try to address the former and improve the latter proposing alternative institutional arrangements (see for example Conner and Izumi, 2012, Tikkanen, 2014). A related issue concerns the possible discrimination of PFP against small business (Thompson et al. 2014).

**Table 3.**  
Topics

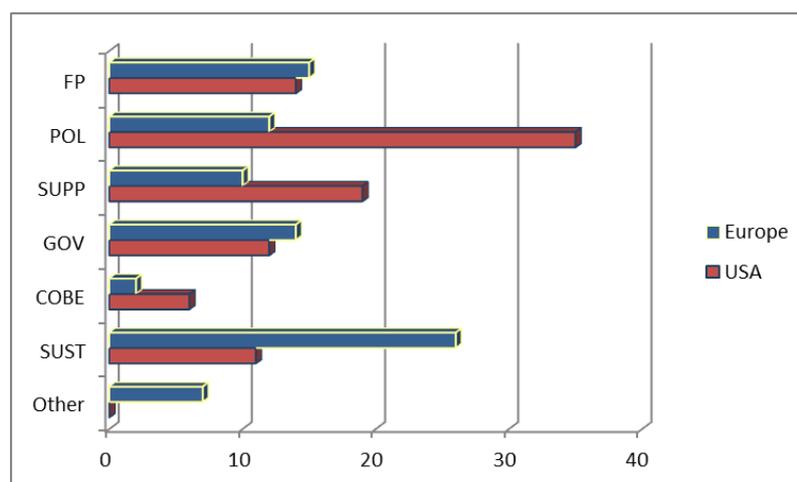
Group	Topic	case	% on N
FP	Organic	7	9%
	Local	18	24%
	Other quality	6	8%
POL	Farm to school	25	34%
	Nutrition and health	26	35%
SUPP	Food supply chain	29	39%
	Small businesses	4	5%
GOV	Institution governance	10	14%
	Contracting	4	5%
	Regulatory issues	15	20%
COBE	Impacts, costs and benefits	11	15%
SUST	Social and cultural issues	8	11%
	Social innovation	11	15%
	Sustainability	20	27%
	Other	6	8%
Total		200	

Source: elaboration by authors

The third main topic is on sustainability which is mentioned in almost 30% of the papers.

Noticeably, the theme of contracting, one of the prominent in the literature on Public procurement in general (Lange, 2014) is not so popular in PFP literature.

Finally, the role of classical cost benefit analysis of policy instruments seems to be quite limited in the reviewed literature. The main quantitative tool to assess the projects is in general some form of impact analysis. We note the use by Thatcher and Sharp (2008) of an Input Output framework to evaluate the impact of public procurement of local food.



**Figure 3:** Incidence of topics (total number of articles) across geographical area  
Source: elaboration by authors

Even for the analysis of topics we cross tabulate the occurrences of the topics with the geographical coverage of the papers and measure the incidence of each broad topic on the total number of papers per area (fig. 3). A chi square test rejects the hypothesis of equal distribution of topics across areas. Policy type, that is Farm to school or nutrition and health initiatives are more covered by USA papers Food

supply chain and impact analysis are more frequent in USA studies whereas social and sustainability issues are more investigated in Europe.

## 4 Discussion

The number of papers published in these last 5 years suggests an increasing attention given by the scientific world to the PFP issue, especially in the “first world” countries such as the USA and the European ones. Anyway these results must be viewed in light of the operational rules we used to select the material from the entire bibliography on the theme: the decision to not consider studies which simply focuses on the impact of PFP on the recipients could have likely excluded some developing countries works since most of these concern the effects of publicly distributed food on household livelihood rather than on food suppliers (see, for example, Ramakrishnan et al. (2012); Shaibu et Al-hassan (2014); Goel (2011)).

The analysis of the different social science disciplines involved in PFP issues reflects the multidisciplinary characteristic of this theme since, despite the prevalence of some field of studies (i.e. management science), many other ones play an important role as number of papers published.

As reported in the results section the three main topics traced in the reviewed material are nutrition and health programs, the food supply chain and sustainability.

Relatively to the first, what distinguish PFP from other type of public procurement is the effect of this “structured” demand (Sumberg et. al., 2011) on both suppliers and consumers, effect that is actively sought by the policy maker. This is mirrored by the linkage of PFP with both regulations in the domain of food safety and social policies aimed at improving the livelihood of rural communities. Indeed there are many examples where both nutritional and social policies are pursued at once both in the USA (see for example Carlsson 2008, Bagdonis, 2006) and in Europe (to cite a few Galli and Brunori, 2014, HE and Mikkelsen, 2014, Ruge and Mikkelsen, 2013).

The sustainability addressed by PFP literature is mainly the social one, not the environmental sustainability, which is instead primarily the focus in green procurement. Indeed, in the former environmental aspects are treated only indirectly with reference to organic food and food miles (see for example Otsuki 2011). This is well documented in third world experiences where the impact of PFP on food prices in the procurement areas is well known (Sumberg et. Al., 2011). In developed countries PFP is generally seen as a policy instrument that can foster sustainable development of rural areas (e.g. Sonnino, 2010) even if neoliberalist approaches (Allen and Guthman 2006, Sonnino 2010) can trigger the opposite effect. Linked to sustainability we often found the topics of social innovation (Brunori and Di Iacovo, 2014, Ruge and Mikkelsen 2013, Morgan and Sonnino, 2007) and social aspect at large which characterise the papers authored by sociologists.

Another aspect spilled out from the results is the quite small attention dedicated in PFP literature to the contracting topic. The design of the procurement procedures (often auctions) is so important when the sole objective of the public authority is to minimize the costs under budget constraint pressure. It becomes less prominent when the objectives are not only multidimensional (as in green procurement) but also involve the wellbeing of several actors of the “service chain” (Tikkanen, 2011). Conversely, the concept of “creative procurement” (Morgan, 2007) describes the way local authorities manage to bypass the general cost minimizing and pro-competitive rules (set forth by Government or EU authorities) in order to structure the public demand in favour of particular suppliers or to get better meals for students.

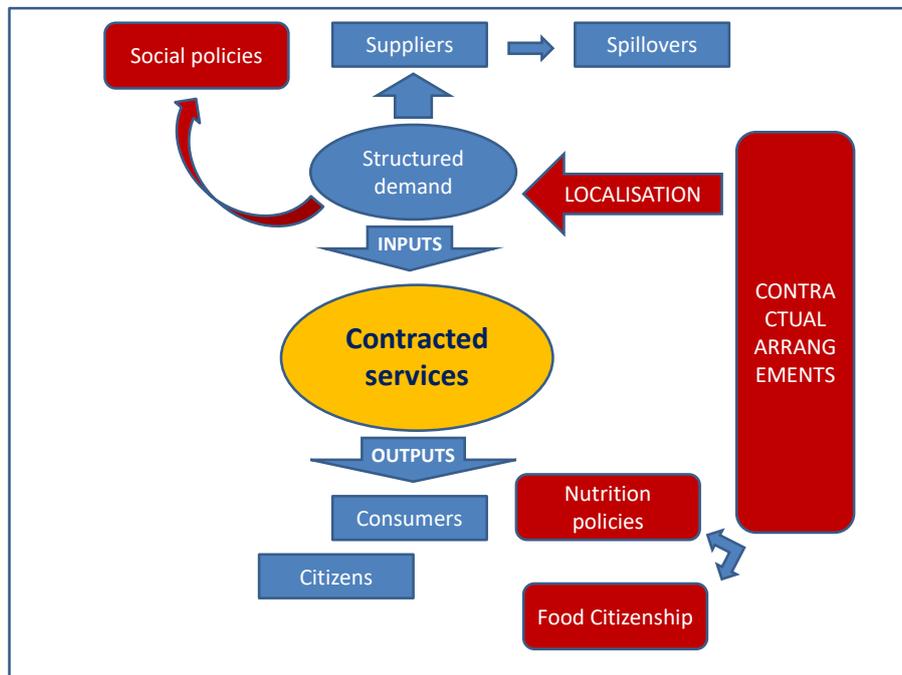
Finally, both the disciplines and the topics analyses reveal some geographical differences in the scientific papers produced on the PFP issue. The European vein is largely more focused on social and sustainability themes, which is reflected by the prevalence of sociology studies in the EU. Conversely American literature contains a great share of management studies which focus primarily on themes such as policy type (“farm to school” and nutrition and health initiatives) and food supply chains, probably due to long tradition that characterizes these programs which, as highlighted in the introduction section, date back to the 1940s.

### 4.1 Towards a conceptual framework

We are now aiming to conceptualize the results stemming from this field of studies. To this extent we start from the notion of linkage (McCrudden, 2004) with the related concepts of contractual conditions, qualifications of contractors, and criteria for contract award.

According to this definition the requirement of buying a certain quota of organic products regardless of the origin is a way to link public food demand to both environmental and health issues. Organic food

affects the environment where food is produced but also affects the health of citizens where food is consumed. In a sense, PFP linkage always targets directly or indirectly both suppliers and citizens/consumers of food. The focus may alternatively be on the suppliers or on the citizens side depending on how the linkage is specified.



**Figure 4.** PFP: a conceptual framework

Source: our elaboration on Sumberg, J., Sabates-Wheeler (2011)

This is a specific, although not exclusive, characteristics of PFP. In other cases of public procurement, the contractual conditions may be linked to some social policy, mostly involving working conditions or discrimination, but the outcome of the contracted work (for example a public building) is not affected in its intrinsic qualities (even if its costs for the taxpayer may well be affected). In PFP both the inputs and the outputs of the contracted service are affected by contractual arrangements and respectively linked to social policies targeting suppliers and /or citizens/consumers<sup>\*\*</sup>.

A discriminant factor with respect to the impact of PFP on suppliers seems to be the contractual requirements about localisation of suppliers. According to Sumberg et al. (2011) when PFP requires suppliers to be local, the interventions creates a “structured” demand within a local economy “so that it is easier, less costly and less risky for specific target groups within the population of family farmers to engage with input and output markets.”

Most of the developed countries literature reviewed agree that when PFP aims at promoting sustainable development of rural communities this is pursued through the creation of a structured demand within a local economy. If contractual conditions specify that food should be procured from local suppliers, PFP represents an external demand shock for the local economic system, initially targeting local farmers, processors and middlemen, and then generating spillovers to other local economic activities. The extent to which the positive economic effects take place depends on the structure of the local economy, its ability to cope with the increased and structured demand and the definition of what is meant for local.

Conversely, when no local requirement is set forth in the contractual arrangements the impact of PFP on supplier is rarely identifiable and is diluted at the global scale. Here the focus shifts on the effect on citizens-consumers, mostly in terms of improved health and nutrition but also improved food education or food citizenship.

<sup>\*\*</sup> For a distinction between food citizenship and consumership see among others Booth and Coveney (2015).

## 5 Conclusions

This paper provides a first systematic review of the peer reviewed literature on PFP. As already pointed out in the introduction the first striking result is the almost exponential growth in the number of papers published per year in the last decade. Although a relatively recent literature, it embraces different disciplinary approaches as well as research methods. Moreover, the studied cases are evenly split between Europe and the USA being influenced by the specific legislative frameworks in the two areas. Differently from the literature on Public procurement where the themes of contracting and cost minimisation are prevalent, the literature on PFP is centred on the concepts of localisation and structured demand and its impacts on food chain actors as well as citizen-consumers and on sustainability at large. We provide a conceptual scheme of the PFP literature largely based on the concept of linkage that has been first proposed in law and regulation studies but is declined in a rather specific fashion in this field of public procurement.

A limitation of this paper comes from the quite small sample size of 77 papers, compared to other systematic literature reviews counting more selected papers. This has come about partly because of the exclusion criteria employed partly because the PFP is a rather new strand of the general public procurement literature. Since we were interested in the scientific discourse about PFP we decided to exclude a rather copious grey literature on the subject. A possible further development of our work could be the inclusion of grey literature as well as paper published in other languages than English.

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