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## Organizational Choices in the Delivery of Local Public Services in Switzerland : A Cultural Perspective

Wicht Pascal

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UNIVERSITY OF LAUSANNE  
Faculty of Law, Criminal Justice and Public Administration  
Swiss Graduate School of Public Administration IDHEAP

# Organizational Choices in the Delivery of Local Public Services in Switzerland: A Cultural Perspective

A thesis presented for the degree of  
Doctor of Public Administration

by

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A la mémoire de mon cher papa  
René Wicht (1953 – 2016)

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*Un seul mot, usé, mais qui brille comme une vieille pièce de monnaie:*

**MERCI!**

(Pablo Neruda)

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# Introduction and Overview

*“The worth of a State, in the long run, is the worth of the individuals composing it.”*

---

John Stuart MILL (1859)  
*On Liberty*

The question of *how* public services should be provided is among the most sensitive political topics of the moment. How effectively to deliver public services ? Who is the best able to provide a given public service ? These important questions do not refer to the size of the State, that is, the mostly ideological debate — often a dialogue of the deaf — between the promoters of *Less State* and the supporters of the *Welfare State*. On the contrary, it is mostly based neither on *more*, nor *less* State, but rather on *better* State. In other words, the question is not to know *whether* a service should be provided; assuming that the services *are* provided, the key issue is to know *how* to provide it in the best manner.

The general issue of how public services should be provided generates a multitude of questions. One of the crucial questions is the so-called *make-or-buy* decision, which is at the heart of our thesis. Some other questions include the choice of the partner (see Athias and Chever (2015) for an overview of the related literature. See also Athias and Nunez (2015).), the price regulation (Cost-plus *vs.* Price cap remuneration schemes (Laffont and Martimort, 2009)), the trade-off between contractual rigidity and flexibility (Athias and Saussier, 2007; Athias and Saussier, 2010), or the

institutional environment (Engel, Fischer and Galetovic, 2009). Once decided that a given public service should be provided, there exist many ways of providing it, and the issue of choosing between these modes gave rise to an extended literature since the years 1970s. Fig 1 shows an overview of the various ways of providing public service. The traditional *in-house* provision of the good or the service — that is provision made by public sector employees, under the supervision of a public authority — is only one of these modes, albeit it is the most frequent.

An alternative between *in-house* provision and contracting-out with the private sector is the so-called *contracting-in*, which describes the case where the public authority, instead of delegating the delivery of the service to the private sector, chooses to delegate it to the public sector. Contracting-in can take different forms (Athias, 2013a). First, it can consist in the creation of public agencies, that is, firms that belong (totally or in majority) to the public authorities. This is the case in Switzerland of the SBB – CFF, as well as the Swiss Post. At the local level, many cities created so-called *Services Industriels*, which are public entities in charge of the delivery of gas, electricity, and/or water. These public firms enjoy a large autonomy; however, the public sector keeps a large control on them, as it keeps the power to take all the strategic decisions (as the majority or unique shareholder), as well as to choose the members of the direction and of the board of administrators. Agentification has strongly developed since the year 1970s in the wake of the New Public Management. Another frequent form of contracting-in is the joint production of services by several jurisdictions. This case mostly occurs at the local level, as it allows local governments to reach a better productive efficiency (taking profit from economies of scales) while keeping the delivery in the hands of the public sector.

Another way of providing public services is to contract-out the provision to one or several private firms. Doing so, the public authority delegates the provision to the private sector, but still keeps a quite large control on the provision, insofar the authority can stipulate in the contract essential characteristics of the provision (*e.g* the price, the quantity, or the quality of the service). Contracting-out may allow a public authority to benefit from some of the advantages of private provision (economies of scale, a better know-how) while keeping a control on the provision in order to ensure that political or social goals (*e.g* redistribution) are satisfied. The authority has also the ability to choose between several ways of financing the service — by direct payments of user fees by the consumers, or by the State, which will allow to finance it through taxes (according to the principle of the ability-to-pay), and hence to satisfy redistributive goals. We shall refer to the case of middle-term contracts which describe a mission to fulfil in rather general terms as *Performance contracts*, whereas *Delivery contracts* — the most frequent — are short-term contracts that give the firm less latitude. Contrary to privatization, there is no transfer of ownership. It is essential to note that in all of these cases, we consider the operation of the infrastructures and the delivery of the service, and not the building of the infrastructure,

Under the contracting-out alternatives, the one which involves the most the private sector is the Public-Private-Partnership (PPP), which is a long-term contracts

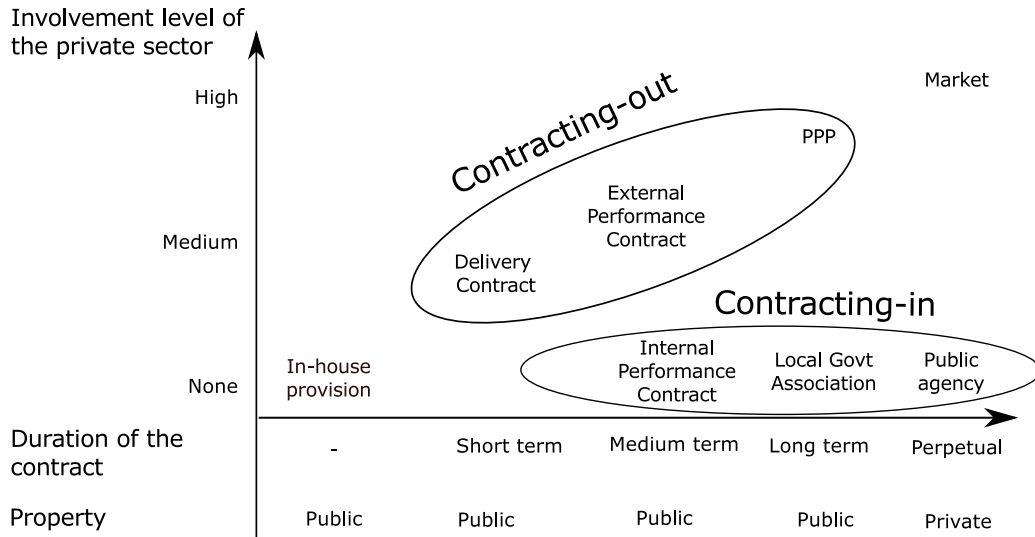


Figure 1: Modes of provision for public services

Adapted from Huet and Saussier (2003)

in which a public authority delegates to one private firm the different phases (Design, Build, Finance, and Operate) involved in the development of a public service associated with an infrastructure. This allows a bundling that incites the private partner to minimize the costs not only in the building stage — which may lead to increased costs in the operation stage — but in all stages. In Switzerland, only one PPP exists nowadays, namely the administrative center Neumatt in Burgdorf BE, built in 2012.

Another kind of hybrid forms between make and buy is the *lease* arrangements. In these contracts, the public sector builds and finances the infrastructure necessary to deliver a public service, and delegates the delivery to the private sector, that is, it allows a private firm to exploit an infrastructure that belongs to the public sector. This is often the case for network industries as electricity, gas, or water supply, as well as for sport venues.

Outside from this framework, a provision through the market can also, under certain conditions, allow to satisfy the conditions of efficiency and redistribution defined by Musgrave (1959). Indeed, when the provision of a good can be provided efficiently by the market, but that this equilibrium is not conform with the redistributive equity, the second welfare theorem states that any other Pareto-optimal equilibrium can be obtained through a transfer mechanism, although this will affect the equilibrium consumptions of all available goods. A redistributive policy affecting only one given good may consist for the public authorities in subsidizing the offer (grants, *e.g* for cultural activities) and/ or the demand (vouchers)<sup>1</sup>.

<sup>1</sup>As the public authority is no more involved in the provision, we shall not consider this case in this thesis.

The questions related to the provision of public services and the way these services are provided are very long-standing, and the answers given to these questions strongly varied through the centuries.

The existence of public services dates back — at least — to the classical antiquity. According to the famous Roman historian Livy (*Titus Livius*), the Roman Senate created 440 B.C. the *Cura Annonae* (“care for the grain supply”) and the corresponding public office of the *Praefectus Annonae*. Indeed, the surrounding countryside was not able to fulfil all the needs of the population of Rome; thus, the constitution of this public service allowed the Senators to limit the risks of a famine, by ensuring the delivery of grain from the other regions of Italy (Campania, Sicily), as well as North Africa (Egypt). One and a half century earlier, around 600 B.C., Tarquin the Elder built the first sewage system, the *Cloaca maxima*, to remove the waste of the City to the river Tiber. 312 B.C., Censor *Appius Claudius Caecus* — well-known for having given his name to the *Via Appia*, the most important Roman road — built the first aqueduct, *Aqua Appia*, in order to ensure the supply of water to the City of Rome (Rosen, 1993). During the first century B.C., Emperor *Augustus* expended massively the number of public services, and created the *Cura viarum* (maintenance of the roads), the *Vigilum praefectura* (a service of fire protection and maintenance of the public order), the *Urbis praefectura* (a local police), the *Cura operum publicum* (maintenance of the public buildings), the *Cura aedium sacrarum* (maintenance of the religious edifices), and the *Cura aquarum* (protection and maintenance of the aqueducts). At the end of the first century A.D., there were no less than 240 workmen who worked for the water service alone (Homo, 2014). Is it also under Augustus that the first postal system (*cursus publicus*) has been created, albeit it was intended for official purposes only. Over the centuries, the Roman Emperors have been active in continuing the development of the public services, developing in particular the aqueducts and sewerage networks and the therms, as well as the urban police.

We can hence observe that, at these times, the provision of public services was mainly in the hands of the public authorities, and that these service were provided by public servants. In other words, in the antiquity, most of the public services were provided through what we should call nowadays *in-house provision*. However the private sector was not totally absent from the delivery of public services. It is also during the antiquity that the first concessions have been awarded : the Roman Emperors stipulated long term contracts (*ius perpetuum, ius emphyteuticum*) that allowed individuals to build and exploit public utilities as therms, aqueducts, or post relay stations (Bezançon, 2004). This greatly favoured the development of these infrastructures across the Empire. Most of these public services disappeared, for several centuries, with the fall of the Roman Empire in 476.

During the middle ages, the consequence of the feudal system was that the provision of most “public services” resulted from an exchange of services between the lords and their peasants and serfs, with the former ensuring the security of the fief and rendering justice, and the latter farming the lands. In this context, it is not clear whether this relationship must be considered as a public provision — what the hierar-



chical relationship between the lord and the peasants may suggest — or as a private provision, as a kind of (at least moral) contractual relationship existed between the lord and the (free) peasants.

During both the middle ages and the Renaissance, many tasks that are now considered as public services were in the hands of the Church and/or charitable foundations; it was the case, for example, of the education. In Switzerland, the reformer John Calvin made the elementary school compulsory in Geneva in 1536. Many of the protestant cantons (Berne, Vaud, Zurich) followed this example during the 16th and 17th Centuries. In the Catholic cantons, the religious orders (in particular the Jesuits) developed for their parts schools intended primarily for the children of wealthy families. On the other hand, in the domain of health, several hospitals have been created thanks to the donations of rich patrons. This was the case for example of the hospital of Berne, founded in 1354.

At the end of middle ages (since the 12th Century), noblemen and *bourgeois* organized the provision of some services in the cities, as water supply, or the building of ramparts. Concessions were awarded for the exploitation of mills and ovens, but also roads and bridges. These concessions became more frequent at the Renaissance, for example for waterways arrangement and the digging of canals as the Canal Craponne in 1554 (Athias, 2007). The Bridge St-Michael in Paris, built in 1378 and swept away by the current in 1404 or 1407, illustrates the cooperation between the public authorities and private individuals: the authorities financed the construction of the bridge in selling concessions to a couple, which was allowed to build houses on the bridge. However, concessions were not limited to public utilities, as the following example illustrates: in 1672, King Louis XIV charged the Court Composer Jean-Baptiste Lulli to develop a Royal Academy of Music and Opera, and to finance it by performing representations for the public (Bezançon, 2004).

Public services experienced a very strong development since the beginning of the 18th Century. After the industrial revolution, the new-born industries, along with the sharp increase of the population, generated a large amount of new needs. These needs were in particular linked with network industries: transportation (railways), clean water, public lights, electricity, gas, a.s.o. However the public authorities lacked both the know-how and the financial means to develop all these networks: as Paquier (2004) notes, the building of a gas network for a city like Geneva represented an investment corresponding to the annual budget of the municipality. In addition, the public authorities were not in a position to support the huge risks associated with the development of these new industries. By contrast, the Elites enjoyed important means and were seeking opportunities of fruitful investments. This led the authorities to award concessions to private firms in order to develop these new services.

In France, the concession to develop the railway between the coal mines of St-Etienne and the fluvial harbour of Andrézieux on the river Loire, the first railway in continental Europe, has been awarded in 1823. In Switzerland, the first railway between Zurich and Baden, the so-called *Spanisch-Brötli-Bahn*, has been built in 1847 by the private company *Schweizerische Nordbahn*. In 1852, the two chambers of the

Swiss Parliament voted a Rail Law and decided — against the opinion of the Federal Council (the Swiss Federal Government), who wanted a centralized State provision — to keep the competence of developing the rail network in the hands of the Cantons, who in turn awarded concessions to private firms. Indeed, the Cantons — who already had delegated in 1848 a large part of their power to the Federal State in several domains (*e.g.* the post, the armed forces) — were not ready to cede again another important part of their power. However, the first decades of development of the rail network in Switzerland was a complete financial fiasco, due to the fact that all these companies (the smallest of which exploited a line of less than 4 kilometers) developed their network in parallel without coordination, and even without connection to each other, which lead to tremendous inefficiencies<sup>2</sup>. In addition, these difficulties have been aggravated by the Long Depression that followed the financial crisis of 1873. The consequence was that, between 1852 and 1884, the shareholders of the private rail companies accumulated losses of about 375 millions of Swiss Francs. This lead the Confederation to take-over the five biggest rail companies as well as four smaller companies in 1898, for the huge amount of 1.3 billion Swiss Francs, which corresponds to about 60 percent of the GDP at the time (Duc, 2010). This gave birth, in 1902, to the Swiss Federal Railways (SBB – CFF).

Urban transports also began to be developed in the 19th Century, both in Switzerland (first tramway in Geneva in 1876 and in Zurich in 1882) and abroad (New York Tramway in 1832, Paris Tramway in 1853, first electric tramway in Sarajevo in 1885, London Underground in 1863, Paris Métropolitain in 1900 a.s.o.).

Apart from the development of network infrastructures, other public services also have been developed during the 19th Century, starting with public education — from the primary and secondary schools up to the Universities<sup>3</sup> — that was previously mainly in the hands of the Church. The elementary education becomes compulsory in all Swiss Cantons in 1874. Similarly, the authorities (in Switzerland, the Cantons) took control of the public health, and built (or took-over<sup>4</sup>) several public hospitals.

The same difficulties that the Swiss rail network experienced during the 19th Century also emerged in other countries and for other networks (gas, electricity). This inefficiency of competition — due to the existence of parallel networks in a situation of decreasing marginal costs that call for a natural monopoly — as well as the difficulty to regulate a private monopoly lead most countries to nationalize the network industries, mostly during the first half of the 20th Century: France nationalized its rail network in 1938 and its electricity and gas network in 1946, Germany nationalized rail in 1919, Italy nationalized rail in 1924 and electricity in 1962, U.K. nationalizes rail in 1948 and electricity and gas in 1949. The same happened at the local level regarding water delivery — and in Switzerland gas delivery, which is a local/cantonal competence —

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<sup>2</sup>*Bilan, September 18th 2013, “Les CFF font partie de l’ADN de la Suisse”.*

<sup>3</sup>Until the 19th Century, the only University in Switzerland (apart from the religious based Academies of Berne, Zurich or Lausanne, which were transformed into Universities during the 19th Century) was that of Basel. (*Dictionnaire historique de la Suisse: Instruction publique*)

<sup>4</sup>For example the Government of Canton Vaud bought in 1806 the former *Hôpital Notre-Dame* — a charitable hospice founded in the 18th Century — and transformed it into a public cantonal hospital.

already during the second half of the 19th Century. In many Swiss cities (*e.g.* Geneva and Lausanne), this gave birth to the so-called *Services Industriels*, that is, public entities in charge of the delivery of gas, electricity, and/or water (Paquier, 2004).

The second wave of a sharp development of public services in industrialized countries dates back to the period that immediately followed World War II, until the 1973 Oil crisis. This period, known in France as “Les Trente Glorieuses” (“The Glorious Thirty”), was marked by a rapid economic growth, a high natality (the so-called *baby boom*), a high prosperity, and the sharp development of the households’ consumption. The good economic health, along with the availability of financial means, allowed all countries to increase their public spendings and to develop the public services as well as the welfare State. Among the new public services that have been created or strongly developed during this period, we may mention in particular public radio and TV broadcasters, as well as motorways. In most cases, these services were provided in-house, albeit some countries (*e.g.* France) preferred to award concessions to develop motorways.

In France, the implication of the State in the economy largely exceeded the framework of public services, that is, services provided in the public interest: after World War II, the French Government nationalized not only public services as electricity (1946) and air transportation (1945), but also coal mines companies (1944), the four biggest banks (1945) and the eleven biggest insurance companies (1946), as well as the automobile manufacturer Renault (as a sanction for having collaborated with the enemy during the German occupation). After the “Trente Glorieuses”, the Government nationalized in 1982 several firms both in the financial sector (banks) and in the industrial sector (*e.g.* the manufacturer of glass and mirrors St-Gobain, the steel company Usinor or the chemical and pharmaceutical company Rhone-Poulenc). In the same vein, the U.K. nationalized steel in 1967, the British Leyland Motor Corporation in 1974, and aerospace building as well as shipbuilding in 1977. In 1979, the nationalized industries represented 9 percent of the GDP (Parker, 2002).

Hence, between the end of the 19th Century and the years 1970’s, a large part of the supply of public services was ensured by the State. However, since the end of the “Trente Glorieuses”, the necessity of the implication of the public sector in the provision of public services, as well as its ability to provide public services in the most efficient manner, have been put into question. Public administration has been perceived as an inefficient, slow and heavy bureaucracy, by contrast with the presumably efficient private sector. This gave birth to two types of (complementary) practices, namely reducing the size of the State in transferring responsibilities to the private sector (using privatizations), and trying to improve the efficiency within the public sector (New-Public Management).

The prelude of the wave of privatization in Europe and in the World dates back to the years 1960’s and 1970’s. Wright (1993) points out that isolated privatizations occurred in Ireland (privatization of the Dairy Disposal Company in 1972), in the U.K. (British Petroleum, 1977), in Germany (many privatizations in the years 1960’s), as well as in France and in Italy. However, the real major wave of privatizations began

around 1980. Still according to Wright, between 1984 and 1991, the Governments of 100 countries sold the equivalent of 250 billion dollars of public firms, among which 50 billion USD in 1991.

In the U.K., Margaret Thatcher — Prime Minister (Conservative) from 1979 to 1990 — considered privatisation as “*fundamental to improving Britain’s economic performance*” and “*one of the central means of reversing the corrosive and corrupting effects of socialism*”. She initiated a large wave of privatizations, which has been completed by her successor John Major. Privatizations concerned a large set of public services. Telecommunications have been privatized in 1984, gas in 1986, water in 1989, electricity in 1991, and railways between 1995 and 1997. When the Conservative John Major handed over power to Tony Blair (Labour), the nationalized industries represented a mere 2 percent of GDP, whereas this share was of 9 percent in 1979 (Parker, 2002).

In France, the Government of Prime Minister Jacques Chirac re-privatized in 1986 and 1987 a large part of the firms that had been nationalized under successive Governments. Other privatizations have been conducted in 1993 under Prime Minister Balladur, i.e. when the right-wing parties took back the power.

The rest of Europe, as well as many countries in the World, also experienced massive privatizations, as in Finland (since 1987), Germany (since 1990), Portugal (since 1990), Austria (since 1993) or Italy (since 1993). However, the relative importance of privatizations strongly varies from one country to another: the value of privatized firms ranges from almost zero in Germany to more than 9 percent of the GDP in the U.K. In a famous speech<sup>5</sup>, Margaret Thatcher stated: “*So popular is our policy that it’s being taken up all over the world. From France to the Philippines, from Jamaica to Japan, from Malaysia to Mexico, from Sri Lanka to Singapore, privatisation is on the move, there’s even a special oriental version in China. The policies we have pioneered are catching on in country after country. We Conservatives believe in popular capitalism — believe in a property-owning democracy. And it works!*”

In the middle of a storm of privatizations, Switzerland seems to be the *eye of the hurricane*. We may assign two reasons for this fact. First, contrary to the U.K. or France, Switzerland did not nationalize complete sectors of its industry in the previous decades: logically, this means that there was less scope for re-privatizations<sup>6</sup>. Secondly, the citizens and the Parliament refused some projects of privatizations that were desired by the Federal Council or the Cantonal Governments. The Swiss Parliament renounced in 2006 to divest the majority of the capital of the telecommunications operator Swisscom, mainly for fear of losing a referendum. The voters of Canton Vaud refused the privatization of the Cantonal Bank in 2001. Without going as far as privatizing, Switzerland however followed the EU and liberalized the telecommunication market in 1998, and a large part of the postal market in 2011. The Swiss electricity market is also partly liberalized since 2009, but the Government decided in 2016 to postpone the complete liberalization, that was initially supposed to be achieved in

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<sup>5</sup>Speech to Conservative Party Conference in Bournemouth, Hampshire, October 10, 1986

<sup>6</sup>The same argument also explains the rather small volume of privatizations in some other countries, for example Germany.

2018.

In 2006, the European Union adopted the *Bolkenstein Directive* whose aim was to create a single market for services within the Union, and to ensure the free movement of services, guaranteed by the Treaty of Rome (1957) and the four freedoms defined in the European Single Act (1987). Already before the *Bolkenstein Directive*, the EU began to liberalize the markets of electricity (since 1997), postal services (1997), telecommunications (since 1998), and gas (since 2000).

As we have just seen, the choice of an organizational mode, make-or-buy is a concern for the public authorities for many centuries. However, it is only recently that this question has been addressed by researchers, and that a theoretical framework arose. Behind this question of *make-or-buy*, arises the more general question of contractual relationships. Three main theories of the contracts, initially developed in the years 1970's in an industrial framework, have been applied to the public sector and attempt to answer to the questions related to the delivery of public services. These theories are the Incentive Theory, the Incomplete Contract Theory, and the Transaction Cost Theory. As we will show in Chapter 1, despite some fundamental differences, there are also many important similarities and parallels between the TCT and the ICT. However, whereas the question of make-or-buy is — directly or indirectly — a concern for both the Incomplete Contract Theory and the Transaction Cost Theory, the former is essentially formal and has mainly given rise to theoretical literature and to case studies (e.g. Hart, Shleifer and Vishny (1997)), whereas the latter provides analytical tools that make it the most appropriate to the purpose of a quantitative empirical study like ours<sup>7</sup>.

The Transaction-Cost Theory (TCT) shows that, in a framework where the agents behave opportunistically and have a bounded rationality, and when the environment is uncertain, every contractual relationship generates transaction costs (cost to stipulate the contract, as well as costs to monitor its execution), and that these transaction costs make the *buy* less profitable when compared to in-house provision (*make*), all other things being equal. A central prediction of the TCT is hence that two opposing forces interact: on the one hand, services that are asset specific or difficult to measure — that is, services whose contracting would generate high transaction costs — will be less likely to be contracted with a private firm. On the other hand, economies of scale foster contracting-out. The relative strength of these forces hence determines whether in-house provision (*make*) or contracting-out (*buy*) is the most appropriate in a given case (Williamson, 1985).

The TCT describes a pure economic trade-off based on efficiency considerations. However, in the case of the make-or-buy decision of a public authority, we can observe that the choices made in practice may differ from efficiency considerations and from optimal choices. Indeed, the preferences of the authorities may also be subject to political considerations, namely the private benefits to politicians of keeping service

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<sup>7</sup>As Williamson (2000) notes : “*Gross, Hartman and Moore makes very limited contact with the data whereas [...] Transaction Cost Economics is an empirical success story.*”

provision inside the government (Boycko, Shleifer and Vishny, 1996; López-de-Silanes, Shleifer and Vishny, 1997). Indeed, in keeping the provision in-house, policy-makers can hire political friends or relatives (*cronyism, nepotism*), or bias the public policies in order to favour prospective electors (*clientelism, patronage*). In line with the Public Choice literature on bureaucracy (Wildavsky, 1964; Warren, 1975; Tullock, 1965; Niskanen, 1971) and rent seeking (Buchanan and Tullock, 1962; Tullock, 1967; Boycko et al., 1996), this view holds that factors that increase the political benefits from in-house provision make private provision less likely.

A mixture of both views is given by Levin and Tadelis (2010): Services that are characterized by high transaction costs of contracting and services that are ranked high by city managers in terms of resident sensitivity to quality are less likely to be privately provided. Empirical studies have corroborated the significance and importance of these efficiency and political dimensions to explain provision mode choices for public services. For instance, Levin and Tadelis (2010) find that a one standard deviation increase in contracting difficulty is associated with about 40 percent less private contracting.

As the choice of how public services are provided (conditional on delivering the public service anyway) is neither a question of “more or less state” nor a question of redistributive policy, the literature has shown none interest and concern about the effect of cultural background on this economic decision : as we have seen above, by now, the theoretical and empirical literature has only considered technical dimensions (transaction costs and political considerations) in order to explain Governments *make-or-buy* decisions. However, the Figure 2 highlights that, at a given size of the State, that is, for a given level of public expenditure, the share of public employment differs widely across countries of similar levels of economic development. This means that two countries with similar levels of public spending can have very different degrees of public sector involvement in the provision. Some countries may provide public goods and services directly through the civil service (which corresponds to the in-house provision or contracting-in described above), and others can hire both infrastructure development and service provision with the same or different private operators. This corresponds to the different forms of contracting out presented above. For instance, the ratio of public over private employment normalized by public spending per capita is more than three times bigger in France than in Germany. It could be that the observed differences are related to economic conditions such as the economic cycle or the current industry structure. But it could also be that the more important drivers have little to do with economic conditions.

The fact that the impact of culture has never been taken into account is a major shortage of the make-or-buy literature. Hence, it is an important research issue to complete this literature in trying to understand which factors explain these across-country differences. Addressing this issue is the main goal of the present dissertation.

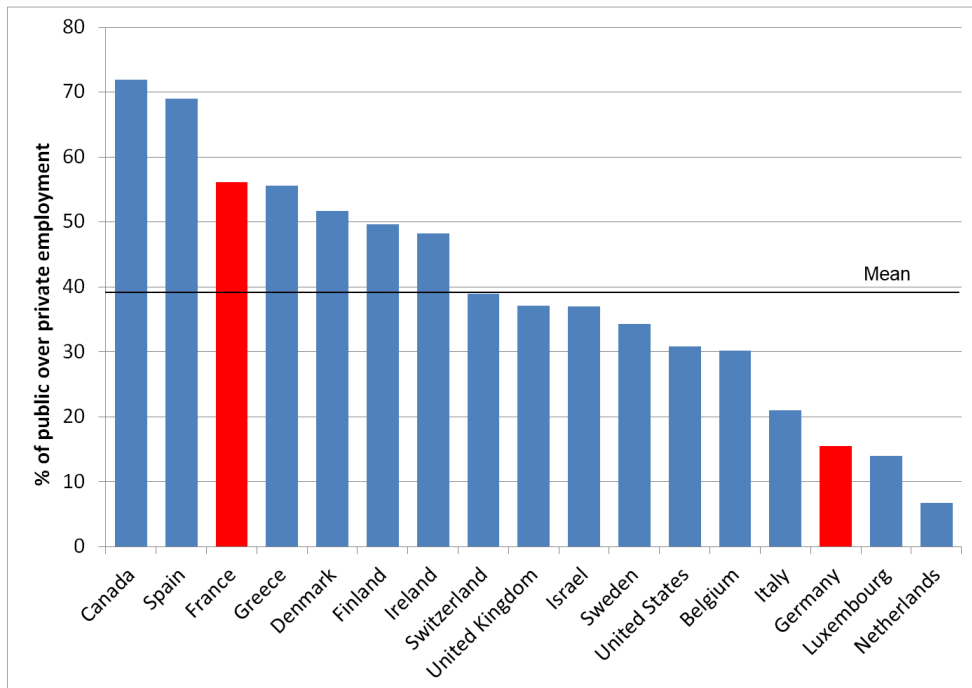


Figure 2: Public over private employment, by public spending *p.c.*

*Source.* United Nations Economic Commission for Europe (2000).  
Public spending in USD \$ constant 2000. PPP.

Parallel to the question of make-or-buy addressed by the economic literature, a vast public-administration literature emerges about Public Service Motivation. This literature (Rainey, 1982; Perry and Wise, 1990; Perry, 1996) postulates that agents who work for the public sector are motivated by genuine concern for the public interest. As they internalize the fact that their work generates a positive externality for the Society, they are expected to be more committed to their work, and hence more efficient. By contrast with the literature on bureaucracy (Wildavsky, 1964; Warren, 1975; Tullock, 1965; Niskanen, 1971) and rent seeking (Buchanan and Tullock, 1962; Tullock, 1967; Boycko et al., 1996) who suggest that public provision is by its very nature less efficient than private provision, the Public Service Motivation (PSM) literature suggests on the contrary that the matching (person-organization fit) between highly public service motivated employees and an organization (the public sector) whose goals and practices correspond the best with their aspirations might make the public sector more efficient than private firms.

Apart from institutional (organizational culture, economic development) and individual (age, education, or gender) determinants, a part of the recent PSM literature (Vandenabeele, Scheepers and Hondelghem, 2006; Vandenabeele and de Walle, 2008; Kim, 2009; Kim, 2015) highlights the importance of cultural factors in explaining across-country differences in terms of public motivation. Among these features, the research identifies in particular the religion (dominant religion, degree of religiosity), the individualist or collectivist nature of the Society, risk aversion, or the relative

importance of performance and welfare.

Surprisingly however, albeit the make-or-buy literature and the PSM literature address *in fine* the same question of the relative efficiency of public and private provision of public services, there exist currently no connections between both of these research fields: the make-or-buy literature limits itself to the study of the trade-off between different technical factors whereas the empirical PSM literature focuses only on the public sector, without considering the private sector as a counterfactual. The fact that these two strands have never been connected yet may probably be explained by the fact that the make-or-buy literature is essentially an economic literature whereas the PSM literature is more connected with the public administration literature.

We consider that the total absence of connections between the make-or-buy literature and the PSM literature is a crucial gap that needs to be filled. **An important goal of this thesis is hence to build a bridge between these two research fields — between the economic literature and the public administration literature — and to investigate for the first time how public service motivation may influence the organizational choices for the provision of public services.**

**We show that culture is an important determinant of organizational choices, that could explain a large part of the differences observed across countries in terms of implication of the private sector in the delivery of public services, and that differences in terms of public service motivation are the connection between cultural values and organizational choices. Demonstrating this result is a major contribution of this thesis.**

Switzerland is a very interesting laboratory in order to answer to these questions for several reasons.

The first interesting features of Switzerland are its territorial structures. Switzerland is composed of 26 States (Cantons), divided in 184 districts that are further divided in 2584 municipalities (in 2010). Compared to other European countries, Switzerland is one of the countries where the municipalities are the smallest, with a median size of 1'152 inhabitants and 26.7 percent of municipalities having less than 500 inhabitants.

Studying the particular case of the Swiss municipalities is interesting as these account for about 22 percent of the public expenditure, and 38 percent of the employees of the public sector (Koller, 2008). Among the municipal expenditure, personal expenditure account for 31.3 percent and the purchase of goods and services for 21.6 percent. However, whereas the municipalities account for a substantial part of the expenditure of the public sector, their autonomy is quite limited, as a large share of the expenditure (in particular social expenditure) are fixed by the State (Dafflon, 2000b). Nevertheless, even when the municipalities have to provide a given service, the municipality still has the choice of the mode of provision.

An important feature of Swiss municipalities is that it is frequent in these municipalities — especially the small and medium ones — that local executive members



are elected as independents (or on non-partisan lists) rather than as representatives of political parties<sup>8</sup>. This mitigates the impact of ideological choices. In the case of the make-or-buy decision, this should reduce the impact of political determinants.

The legislative power at the local level can take different forms. In some municipalities, particularly the big ones, the legislative power is exerted by an elected parliament whereas in the majority of the small and medium-sized municipalities this power is directly exerted by all the citizens (“full assemblies”). However, even in municipalities with elected parliaments, citizens may vote on some issues, through popular initiatives and referenda: if within a given period, a given number of citizens request it, the authority has to submit a project — *e.g.* the construction of a building, the modification of a municipal law, or a tax increase — to a vote of the citizens.

Both the small size of the municipalities, the extended democratic rights, and the weak importance of political parties at the local level provide the citizens with a large power of control on the functioning and the decision making of the municipality.

Due to the federalist structure of the country, the Cantons have very extended powers. For this reason, Switzerland has been used as a laboratory in many studies on fiscal federalism (Kirchgässner and Pommerehne, 1996; Feld, 2000; Brülhart and Jametti, 2006, *e.g.*). Regarding the make-or-buy decision, this feature is also interesting insofar the legal environment regarding the delivery of public services is mainly set at the cantonal rather than federal level. Hence, municipalities in different cantons face a very different framework. This constitutes an important issue to address: in order to find real causal evidence, it is essential to take the cantonal heterogeneity into account. However, municipalities of a same canton face the same institutional and economic environment, which opens the door for within-canton analyses. In particular, the Cantons have the power of deciding the quantity and the quality of the provided public services (*e.g.* the size of classes in schools and the formation of the teachers). Brülhart and Jametti (2006) highlight the large homogeneity of Swiss municipalities<sup>9</sup>, this homogeneity observed at the Country level is even stronger within the municipalities of a same canton.

Finally, this country hosts four languages that corresponds to very different cultures. These cultural areas can be defined very precisely. The borders between the language areas, with the exception of the Romansh area, are quite sharp, as Fig. 3 shows. In year 2000, 72.5 percent of Swiss citizens were German-speaking, 21.0 percent French, 4.3 percent Italian and 0.6 percent Romansh. Amongst the 26 States (Cantons), 4 are French-speaking<sup>10</sup>, one is Italian-speaking and 17 are German-speaking. Three states are officially bilingual French-German (Bern, Fribourg and Valais) and one is trilingual (the Graubünden state: Romansh, German and Italian).

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<sup>8</sup>According to Geser, Meuli, Horber-Papazian, Ladner and Steiner (2012), 39.6 percent of the 15'000 Swiss local executive members are not member of any political party, and 4.8 percent are members of political groups that only exist at the local level. The proportion of non partisan executive members reaches 80 percent in municipalities smaller than 500 inhabitants.

<sup>9</sup>“There is little spending specialization across municipalities: most municipalities are ‘general purpose’ governments, with largely similar spending duties” (Brülhart and Jametti, 2006).

<sup>10</sup>The Jura state is officially a French-speaking State, even if one of its municipalities is German-speaking.

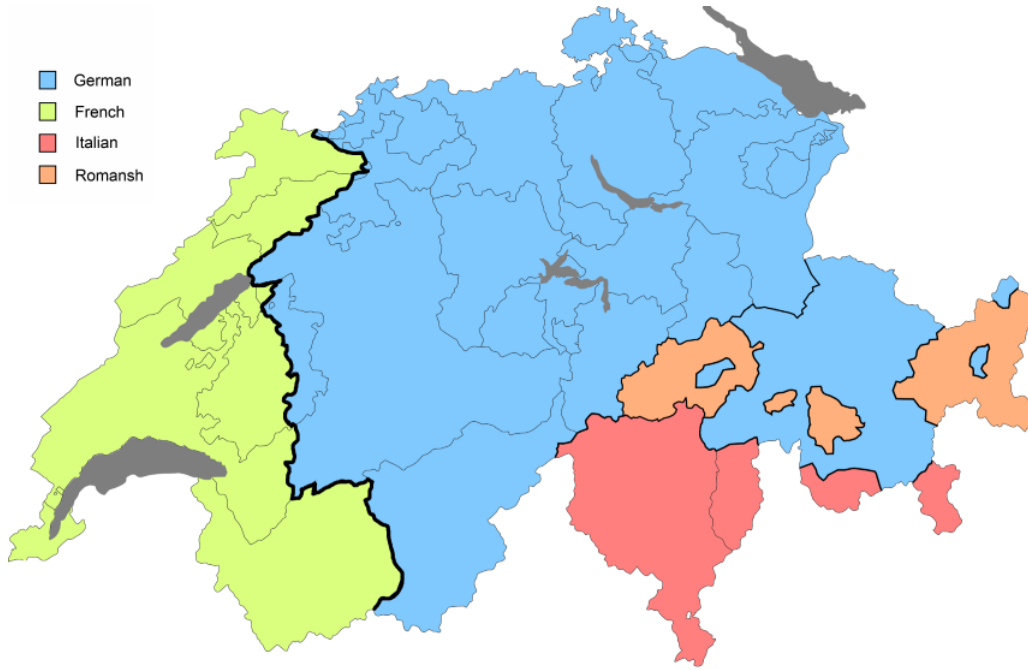


Figure 3: Administrative Language, by Municipality

*Source.* Own conception, Data from the Swiss Federal Statistical Office.

Language is an important vector of culture, as it captures the vertical and horizontal transmission of values Bisin and Verdier (2000; 2001). The vertical channel to the extent that the native language to which we are exposed during childhood and adolescence is likely to be an important predictor of our values during adulthood. The horizontal channel in the sense that language is central to any type of social interaction. People sharing a common language are more likely to form a social network, and then, to share common values and common cultural traits.

The so-called *Roestigraben* — the language barrier between the French-speaking and German-speaking areas — is particularly interesting for several reasons. First, it is a well-known fact that this language border is also a cultural border. Hence, particularly in Switzerland, the language of a municipality or an individual is an excellent proxy for its cultural identity. Secondly, the *Roestigraben* is a *sharp* border, insofar the fraction of French-speaking municipalities falls from almost 100 percent to 0 percent within a distance of 5 kilometers across the border (and vice versa for administratively German-speaking municipalities). In addition, whereas the language border used to be quite moving until the 19th Century, it has known almost no move during the 20th Century: at the French-German border, no municipality has changed its official language since 1952. Thirdly, the largest part of the French-German language border does not correspond to important geographical borders, unlike the German-Italian language border which corresponds to a mountain massif. Last but not least, large parts of the language border run *within* the bilingual cantons of Berne, Fribourg, and Valais. This feature is particularly interesting, as it makes it possible to adopt a

within-canton identification strategy so as to compare municipalities facing the same cantonal legal and institutional framework (territorial structures, policies, degree of municipal autonomy, distribution of tasks between the Canton and the municipalities a.s.o.).

In order to exploit the interesting features of the language border, we shall base our identification strategy on a Regression Discontinuity Design (RDD). The aim of this method is to exploit a cut-off in a running variable in order to determine whether there exist a jump of the outcome variable at this cut-off. The running variable can be the time, in which case the cut-off corresponds to an event (a political decision, a medical act, a.s.o.) whose causal impact on the outcome variable has to be verified. As it will be the case in our study, the running variable can also be spatial, for example the distance from a particular point or border. The observations on the one side of the cut-off can be used as a treatment group and the observations on the other side will constitute a counterfactual. RDD is hence a very interesting tool, as it allows to compare observations that are very similar to each other: observations that are close from the cut-off are expected to differ only by the presence of the treatment. As it is a quasi-experiment, RDD is an almost perfect substitute when it is not possible (for technical or ethical reasons) to randomly assign a treatment. In addition, compared to other non-experimental approaches, the validity of an RDD approach is conditional to quite few assumptions (Hahn, Todd and Van der Klaauw, 2001; Lee and Lemieux, 2010). For this reason, RDD is nowadays considered as one of the best methods to provide causal inference. Hence, the RDD identification strategy we use in the second part of this thesis is really state of the art<sup>11</sup>.

Albeit the idea of exploiting discontinuities emerged in the literature the years 1960 (Thistlethwaite and Campbell, 1960), this idea has not been exploited in the empirical literature until the end of the years 1990's, with the studies of Angrist and Lavy (1999) on the impact of financial aids on educational outcomes, and Black (1999) on the impact of school district boundaries on the willingness to pay for better schools. In the last two decades, the use of RDD analysis expanded sharply in several domains, among others economics (labour economics, development economics, behavioural economics, economics of health), finance, medicine, epidemiology, sociology, and political science.

In Switzerland, the first paper that use the *Roestigraben* as identification strategy are Eugster, Lalive, Steinhauer and Zweimüller (2016), which aimed to measure the impact of culture on unemployment, Eugster, Lalive, Steinhauer and Zweimüller (2011), who showed that culture is a major determinant of the demand for social insurance, and Eugster and Parchet (2013) on the impact of culture on tax competition.

As no data existed regarding the provision of public services in Swiss municipalities, we self-constructed an original dataset that aimed to provide information on the mode of provision chosen by the municipalities for a set of services, as well as on important

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<sup>11</sup>See Lee and Lemieux (2010) for a comprehensive discussion of spatial regression discontinuity design.

Table 1: The 22 services

Office cleaning	Sewage treatment
Snow-cleaning	Child day-care centres
Road-clearing	School canteen
Road maintenance	Specialized services in school
Parking control	Maintenance of school buildings
Refuse collection	Security in public spaces
Solid waste disposal	Local parks and gardens
Animal carcasses removal	Cemeteries
Street lights	Trimming of trees
Drinking water distribution	Forests
Maintenance of water facilities	Public transport

characteristics regarding these services (contractual difficulty, residents’ sensitivity, uncertainty). We considered 22 services ranging from very simple ones (public works and office cleaning) to more complex ones (safety, education). The list of these services is reported in Table 1. These services have been selected after discussions with several specialists and public officials, who identified them as the most relevant at the local level. We collected data on the contracting choices of Swiss municipalities by a web-based survey, that asked city administrators (municipal secretaries) to identify the mode of provision their municipality had chosen to provide each of the 22 services we were interested in. We chose to survey municipal secretaries as they are the best suited to provide us with precise and non ideological information, by contrast with policy makers. In addition, contrary to most local politicians, municipal secretaries are professionals, and are hence best able to provide us with reliable information. We obtained responses from 399 municipalities in all Cantons, among which 56.4 percent are German-speaking and 43.6 percent are French-speaking. We also asked the municipal secretaries to assess the level of uncertainty and residents’ sensitivity in their municipality for each of the considered services, as well as the strength of the competition of the market if they decided to contract-out.

In addition, we ran a restricted survey — sent to ten city administrators — in order to capture variables which are not expected to vary from one municipality to another, that is contracting difficulty, and the weight accounted by each service in the budget of an average municipality.

The results of these two surveys allowed us to constitute a unique dataset regarding the provision of public services in Swiss municipalities. The creation of this database is also a major contribution of this thesis. The constitution of this database received support from the Swiss National Science Foundation.

Considering the elements discussed above, this thesis has two primary aims. First, we want to determine to what extent the classical, technical determinants of the make-or-buy decision are verified in the Swiss case. Most importantly, as we have identified above several specific features of the Swiss context that may influence the make-or-buy decision (small municipalities, well-established tradition of inter-municipal collaboration, extended political rights for the citizens), we want to measure to what extent

these features actually affect the make-or-buy decision.

The second — and most important — aim of this thesis is to highlight the role of culture in organizational choices and in the mode of provision of public services, as well as to quantify it and to assess its relative importance compared to technical considerations. The third goal is to explain the cultural impact. We highlight that PSM is the missing piece that connects culture and make-or-buy: the third important goal of the thesis is hence to demonstrate the causal link between PSM, culture, and the make-or-buy. This will contribute to enrich the literature in explaining — for the first time — the existence of systematic differences that can be observed in organizational choices across countries, or across the cultural regions of a *same* country, as we will show in the case of the language areas in Switzerland.

**This thesis has also very important policy implications. Indeed, as we show that culture is an important factor regarding organizational choices, and that cultural differences in PSM affect the efficiency of public provision, the consequence is that some policies — in particular privatizations — that work quite well in some countries may have very negative consequences when applied indiscriminately to some other countries. What is optimal for one country is not necessarily optimal for all countries. This may call into question the activity of some international organizations, which aim to apply the same receipts in all countries. This may also explain why some policies, for example the New Public Management, lead to very different results across the countries.**

The main limitation of this thesis is that, albeit our study has a strong internal validity, the fact that our study focuses on the Swiss case limits its external validity. For this reason, interesting paths for further research will be to generalize these results.

This dissertation is divided in two parts. The outline of the thesis will be as follows.

The **first part** of the thesis will be devoted to the classical analysis of the make-or-buy decision. The aims of this part are to set out the conceptual framework that is currently used to analyse the make-or-buy decision, and to use this framework in the specific case of Switzerland, in order to highlight the importance of culture in explaining the organizational choices.

In **Chapter 1**, we aim to provide the theoretical framework for the make-or-buy decision, and show why, among the different theories of contracts, the Transaction Cost Theory is the best able to answer to the make-or-buy question. To do this, we shall present the state-of-the-art of the various theories of contracts, and on their applications to the particular case of public services. We shall present successively the three main contractual theories. In addition to the Transaction-Cost Theory that we have already presented above, we also consider the Incentive Theory, and the Incomplete Contracts Theory. The Incentive Theory (Jensen and Meckling, 1976; Holmstrom and Milgrom, 1991; Laffont and Martimort, 2009) tries to determine how a

*Principal* can induce an *Agent* to behave in his interest, in a world with asymmetric information, either *ex-ante* (adverse selection) or *ex-post* (moral hazard). The cornerstone of this theory is to specify contractual rules in a way that makes it profitable for all parties to act in a way that satisfies the interest of the Principal, and that allows to solve conflicts of interest between the parties of a contract. The Incomplete Contract Theory (Alchian and Demsetz, 1972; Grossman and Hart, 1986; Hart and Moore, 1990; Hart, 1995) aims for its part to provide a formalization of the intuitions of the TCT and to determine the optimal structure of ownership, and in particular who should have all rights that are not specified in the contract (residual rights), that is, who will receive the benefits of the non-contractual efforts. Finally, we shall highlight the specificities of the make-or-buy decision for public services, which includes: (1) specificities of the public *sector* (internal organization, bureaucracy, weaker ability to manage some risks); (2) specificities of the public *deciders* (ideological bias, rent-seeking, political agenda); (3) specificities of public *services* (complexity, need for continuity and for adaptability). Finally, we shall conclude the presentation of the state-of-the-art by a review of the empirical literature on the make-or-buy decision of public authorities, highlighting the construction of the explanatory variables of make or buy used in the empirical analysis presented in the second chapter.

In **Chapter 2**, we build up on the theoretical framework developed in Chapter 1 in order to analyse the determinants of the make-or-buy decision in Swiss municipalities. As there were no existing data on the organizational choices of Swiss municipality, we constructed an original database on the provision of public services in Swiss municipalities. This database contains the organizational choices made by 399 municipalities in all Cantons for the provision of a set of 22 public services. Our empirical approach is based on a multinomial logit model and aims to identify the determinants of the mode of provision for each of the 22 services in each of the 399 municipalities. We observe that the technical determinants identified by the previous literature also matter in the Swiss case. In line with the TCT, we observe that contracting difficulty, uncertainty, and residents' sensitivity affect the organizational choices, but that the specific small size of Swiss municipalities make them less sensitive to transaction costs considerations.

We also address in this chapter the issue of individual heterogeneity. In a multicultural (multilingual) country like Switzerland, it is possible to assess whether cultural differences influence organizational choices. In order to address this issue, we use an original identification strategy based on the analysis of mispredicted outcomes, that is, pairs municipality – service for which we observe a private provision whereas the model suggests a public one (*“False-Private”*), and pairs for which we observe a public provision whereas the models predicts private provision (*“False-Public”*). After running standard estimations combined with a within-state estimation strategy, we determine the expected outcome (public or private) for each pair municipality – service. We then run regressions in order to explain the mispredictions. We show that the language is an important predictor of mispredictions: in pairs for which the expected outcome is Private, municipalities in the French area are 33 percent more

likely to choose public provision (that is, to be “*False-Public*” mispredicted) than municipalities in the German area. This analysis highlights the necessity to integrate the cultural dimensions in the make-or-buy analysis, which will be done in the second part of this thesis. However, albeit this analysis suggests that culture may affect the organizational choices, its internal validity is rather limited, insofar it does not prove that the cultural effect measured is really causal. This shows that a more robust analysis is necessary in order to be certain that the observed effect actually corresponds to a cultural gap. This is what we are going to do in the second part of the thesis.

The goals of the **second part** of this thesis are first to determine the *causal impact* of culture on organizational choices for public services, and secondly to understand *how* this happens, that is, to find the channels of transmission.

In **Chapter 3**, we exploit the *Roestigraben* in order to verify the existence of a causal relationship between culture and the make-or-buy decision for public services. As discussed above, the *Roestigraben* — the language barrier between the French-speaking and German-speaking areas — is particularly interesting to provide a robust causal analysis, insofar it is also a sharp cultural border, as highlighted by Büchi (2000). Furthermore, large parts of this border run *within* bilingual cantons which makes it possible to adopt a within-canton identification strategy so as to compare municipalities facing the same cantonal legal and institutional framework. For this reason, we shall restrict the database used in the first part of the thesis to the municipalities that belong to one of the three bilingual cantons of Berne, Fribourg, and Valais. Our sample consists in 142 municipalities, among which 84 are German-speaking and 58 are French-speaking. As in the first part, we shall consider 22 services. Our identification strategy is based on a Regression-Discontinuity Design (RDD) approach using the *Roestigraben* as a cutoff.

Our analysis shows that culture (language) is a major determinant of the organizational choices: French-speaking municipalities at the language border are about 60 percent less likely to contract-out a given service than adjacent municipalities on the German side of the border (counterfactual municipalities). By contrast, we do not observe any differences in terms of public contracting. Using a Difference-in-Differences approach, we show that the size of the effect of culture does not vary within each side of the border. These results are robust to the choice of the bandwidth (20, 25, 30, and 40 km bandwidths with a linear trend, as well as 40 km with a quadratic trend). As a robustness check, we merge the categories *in-house* and *public contracting* and run Logit regressions (still RDD) in order to compare public and private provision. We also run an ordered logit analysis. Both of these analyses confirm the results obtained with our baseline multinomial logit model. We also show that the cultural determinant does not introduce a bias in the choices made by public authorities.

Considering accounting data on the expenditure of Swiss municipalities, we then show that In-House provision is more efficient on the French side of the language border: a 10-percent increase of the number of services provided in-house leads to a reduction of the differential in terms of public spending per capita when contracting

of about 10 percentage points. We also show that contracting (public or private) increases the public spending differential between the French- and German-speaking areas. These results, that are in-line with the analysis of the determinants of the organizational choices, suggest that the difference of organizational choices at the language border might be explained by mission-matching.

In **Chapter 4**, we present a review of the literature regarding Public Service Motivation (PSM). This literature review highlights some points that are particularly important for the purpose of this thesis. First, the PSM literature shows that culture is an major determinant of PSM, which may explain across-country differences in the level of PSM and, in the Swiss case, the differences between the language regions. Secondly, the literature highlights the importance of a good matching between the mission and values of the organization and the PSM of the employees. Finally, we identify several limitations of this literature, in particular the empirical one. First, measuring PSM is a delicate task. Most of the empirical literature is based on the constructs developed by Perry (1996), who distinguishes four dimensions of PSM: Attraction to Policy Making, Commitment to Public Interest, Compassion, and Self-Sacrifice. However, these constructs are very difficult to transpose to different countries in a way that allows cross-country comparisons. The questions used to construct the PSM measures may be interpreted in a very different manner from one country to another, due to cultural differences as well as difficulties to translate the questions without slightly changing their signification. Secondly, PSM is always measured in absolute terms. This means that it does not disentangle the pure public component of PSM and a general propensity to behave in a civic manner. In the PSM literature, the main goal of the PSM constructs is to define *what constitutes PSM*. By contrast, we are more interested by the *level* of PSM for the purpose of our study..

Finally, in **Chapter 5**, we test whether PSM is indeed the transmission channel, using an original strategy to capture PSM. To do so, we use data from the Swiss Household Panel (SHP)<sup>12</sup>. These data represent 2790 individuals, on two years (2011 and 2014). Our data consist in a set of 6 questions capturing civicness. In each of these questions, the respondents were asked to what extent they considered a certain uncivic behaviour to be justified. Three questions allows us to construct a measure of civicness when the public sector is concerned<sup>13</sup>. However, these questions do not only capture the specific civicness towards the public sector, but have also a component of civicness in general, that manifests itself irrespective of whether the public sector is concerned or not. For these reason, we use three other questions in order to construct a measure of the preferences towards civic-minded behaviour in general<sup>14</sup>. Finally, we define PSM as the difference between these two measures (public sector civicness *minus* general civicness). This allows us to have a clean, unbiased measure of PSM.

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<sup>12</sup>The SHP is a panel study which interviews, each year, the members of the same sample of households on a large range of topics. Starting in 1999, it constitutes a very interesting longitudinal database on the values and the living conditions in Switzerland.

<sup>13</sup>Is it justified cheating on tax declaration / avoiding a fare on public transport / claiming State benefits to which you are not entitled?

<sup>14</sup>Is it justified lying in own interest / keeping found money /failing to report damage to parked vehicle?



Our analysis shows that French-speaking respondents exhibit a significantly higher PSM than German-speaking respondents, even after controlling for standard individual characteristics (which include in particular age, education, religion, gender, and political ideology). We infer that this impact of culture on organizational choices is explained by the fact that culture determines the prevalence of motivated agents that are aligned with public, mission-oriented organizations.

The questions to which the thesis attempts to answer, the approaches adopted, the data used, and the main results obtained are summarized in the following table.

Table 2: Summary of the questions, theoretical approaches, data and results of the thesis

	Addressed question	Approach	Data	Main results
PART I	Chapter 1	Theoretical framework for the make-or-buy decision	Review of the theoretical literature, in particular the Transaction Cost Theory	<ul style="list-style-type: none"> <li>⇒ The existing literature highlights normative considerations (Efficiency);</li> <li>⇒ It also highlights positive considerations (Public Choice determinants);</li> <li>⇒ Besides these technical considerations, a potential impact of culture is not taken into account.</li> </ul>
	Chapter 2	Classical determinants in the case of the make-or-buy decision of Swiss local governments. Unobserved heterogeneity	<ul style="list-style-type: none"> <li>Estimation of the determinants of the provision mode. Multinomial Logit.</li> <li>Analysis of the mispredicted outcomes of a Logit model.</li> </ul>	<ul style="list-style-type: none"> <li>⇒ Technical determinants matter (Uncertainty, Contracting difficulty, Residents sensitivity, Size) ;</li> <li>⇒ Language is the most important component of unobserved heterogeneity.</li> <li>⇒ French-speaking municipalities are 33% more likely than German-speaking municipalities to choose public provision when the model predicts private provision.</li> </ul>
PART II	Chapter 3	Causal impact of culture on the make-or-buy decision	RDD multinomial logit, within-Canton analysis	<ul style="list-style-type: none"> <li>⇒ French-speaking municipalities at the border are 60% less likely to contract-out a given service than adjacent German-speaking municipalities.</li> <li>⇒ Culture is the most important determinant of the make-or-buy decision.</li> </ul>
	Chapter 4	Channel of transmission	Efficiency of the modes of provision in both language areas	<ul style="list-style-type: none"> <li>⇒ In-House provision is more efficient in the French-speaking area.</li> <li>⇒ Public contracting is more efficient in the German-speaking area.</li> <li>⇒ This suggests a mission-matching story.</li> </ul>
	Chapter 5	Public Service Motivation	Review of the theoretical and empirical literature	<ul style="list-style-type: none"> <li>⇒ PSM and mission matching are expected to improve the efficiency of public service delivery;</li> <li>⇒ Usual empirical measures of PSM are questionable and do not fit with the needs of our study.</li> </ul>
Chapter 6	Channel of transmission: PSM	Determinants of individual PSM measures	Swiss Household Panel 2011 + 2014, 2790 individuals (Swiss-French and Swiss-Germans)	<ul style="list-style-type: none"> <li>⇒ Swiss-French respondents have a significantly higher PSM than Swiss-Germans;</li> <li>⇒ As PSM is higher in the French area, this increases the likelihood of private provision, due to mission matching.</li> </ul>

# Part I

## Classical Technical Considerations

# Chapter 1

## Contract Theories and Make-or-Buy for Government Services – Literature Review

In the *make-or-buy* trade-off, what is the *make*? What is a firm? What are its boundaries? Why do firms exist in the real world? Even though the classical and neo-classical economists paid a large attention to the way to produce goods as efficiently as possible, it is not before the seminal article of Coase (1937) that this question received some attention. Moreover, it was not until the mid-1970s that the scholars began to investigate deeply the nature, the role, and the boundaries of the firm. Furthermore, as noted by Garrouste and Saussier (2005): “*despite the important literature on the subject, this question remains an empirical as well as a theoretical challenge*”.

The goal of this chapter is to provide the theoretical framework for the make-or-buy decision, that will be used in the rest of this thesis. The make-or-buy question implies that there exist a difference between *make* and *buy*, which means that there exist a difference between firms and the market.

Before the emergence of the contractual theories that we shall present in this chapter, the literature did not consider the existence of the firm. Indeed, the classical smithian division of labour provided no sufficient reason *per se* to justify the existence of firms. Let us take as an example the famous pin factory described by Smith:

*“One man draws out the wire, another straightens it, a third cuts it, a fourth points it, a fifth grinds it at the top for receiving the head; to make the head requires two or three distinct operations; to put it on is a particular business, to whiten the pins is another; it is even a trade by itself to put them into the paper; and the important business of making a pin is, in this manner, divided into about eighteen distinct operations, which in some manufactures are all performed by distinct hands, though in others the same man will sometime perform two or three of them.”* Smith

In Smith’s point of view, the eighteen operations which make up the manufacturing process of a pin are carried out in a unique firm. However, it would also be possible — and equivalent — to imagine that the first man draws out the wire, sells it to another worker who straightens it before selling the straight wire to somebody else who cuts it, and so forth. In that case, the labour is still divided, but it is divided between independent craftsmen instead of employees of a firm, which encompasses the whole manufacturing process. The benefits of the specialization can be achieved in the process we have just described as well as in Smith’s factory. Having said that, the question of why firms do exist still remains. Neither did the neoclassical microeconomic theory (Walras, Jevons, Marshall, Pareto, among others) consider explicitly the concept of *firm*. In this case, the firm is considered as a production function, that is, a black-box that transforms substitutable inputs (mainly labour and capital) into outputs. The objectives of the theory of production is hence to maximize the profit in choosing the right quantity of output to produce and the adequate combination of inputs to produce it. In this model, there is no place envisaged for a trade-off between internal production (*make*) and contracting (*buy*). Indeed, under the very restrictive assumptions of the neo-classical theory (in particular rational agents, and complete information), it is strictly equivalent to produce a good or to buy it from another agent with an identical production function.

In this chapter, we shall present the state-of-the art of the three main theories of contracts, that is, the Incentive Theory, the Transaction-Cost Theory, and the Incomplete Contracts Theory. We shall show that neither the Incentive Theory nor the Incomplete Contracts Theory explain the difference between firms and market. Hence, they do not allow to answer to the question of make-or-buy. Indeed, the Incomplete Contracts Theory considers the firm as a *legal fiction*, a *node of contractual relationships*. This means that, in this theory, a firm is totally equivalent to the market. The firm *is* a market like any others. The Incomplete Contracts Theory focuses on the ownership of the residual rights. The importance here is the hierarchical relationship between the agents, which can arise both within a firm and in an contractual relationship. These theories are however still relevant in the analysis of make-or-buy, insofar the organizational choices also imply contractual issues. By contrast, the very aim of the Transaction Cost Theory is to answer to the make-or-buy question.

In addition, when it turns to the make-or-buy decision for public services, many additional considerations have to be taken into account. First, contrary the case of the make-or-buy decision of a firm, the productive efficiency of the make and the buy

can differ. Indeed, the private sector may be more efficient due to a better *know-how*, or because it benefits from economies of scale. The competition in the private market can also increase the efficiency of the *buy*. In addition, the *buy* allows a better allocation of the risks. Issues related to inherent inefficiencies of the public sector (bureaucracy) have also to be considered.

Furthermore, the make-or-buy decision can be biased by other considerations than efficiency, for example ideology, political agenda, or rent-seeking.

Finally, public services have some specific features that also affect the make-or-buy decision. They are often complex and difficult to contract-out. They generate an important need for continuity, which make the threat of sanctions less credible.

The remainder of this chapter will be as follows. In the first section, we shall present the Incentive Theory. In the second section, we shall consider the Transaction Cost Theory. The third section will be devoted to the Incomplete Contracts Theory. In Section 1.4, we shall provide a synthesis of these three contractual theories, in order to highlight why the Transaction-Cost Theory is the only one that allows to answer to the question of make-or-buy. In Section 1.5, we shall shed light on the specificities of the provision of public services, which explain why the organizational choices may diverge from the choices suggested by the efficiency considerations. Section 1.6 will survey the empirical literature on the *make-or-buy* decision of public authorities, and Section 1.7 will conclude.

## 1.1 The Incentive Theory

The first important theoretical strand we are going to present is the Incentive theory. Whereas the Transaction-Cost theory presented below is centred on behavioural issues, the corner stone of Incentive theory is on information. The Incentive theory aims to understand how resources are produced and allocated under informational constraint, that is, in presence of an imperfect, asymmetric information. In practice, the key issue is then to set up the best set of rewards and performance measures, so as to motivate the agent to act in a way that maximizes the interest of the Principal (Holmstrom and Milgrom, 1991).

Laffont and Martimort (2009) date the starting point of the Incentive theory to the division of labour and exchange. For them: *“It is no wonder that Adam Smith encountered incentive problems in his discussion of sharecropping contracts.”* However, it was not until the years 1970s that these issues have been properly addressed theoretically, in particular in the seminal paper of Jensen and Meckling (1976). The basic framework of the incentive theory is an agency relationship, where the Principal delegates one or several tasks to an Agent. The analysis of Jensen and Meckling takes place within a firm whose ownership and control are separated. However, such a relationship exists for example between an employer and her employees, between a seller and a buyer, or between a lawyer and his client. Provided that both the principal and the agent are rational utility maximizers, it follows that the agent will act in a way that satisfies her own interest, which does not necessarily correspond to the

interest of the Principal. In a world with perfect information, the Principal is able to force the agent to act in an appropriate way, by using mechanisms of sanctions and rewards. On the contrary, when the agent has private information — information that the principal does not have, *e.g.* on his production costs, on his effort, or on the quality of the goods he sells — “*it is generally impossible for the principal or the agent at zero cost to ensure that the agent will make optimal decisions from the principal’s viewpoint*” (Jensen and Meckling, 1976). This creates three kinds of agency costs, namely the costs for the Principal to monitor the activities of the Agent, the agent’s bonding expenditure (*i.e.* the compensation paid to the agent in order to incite him to act in the Principal’s interest), and the residual loss.

This problem is particularly important in the case of public goods. Indeed, in a competitive market, yardstick competition makes it often possible to reveal the hidden information (Laffont and Martimort, 2009). On the contrary, this is more difficult for public services, due to their very nature.

An important assumption of the neo-classical economics is that firms try to maximize their profit, whereas individuals (that is, consumers) try to maximize their utility. Firms are assumed to maximize their profit considering their production function. In other words, what matter are the inputs and the outputs, in quantitative terms, but not the way the inputs are transformed into outputs. For Laffont and Martimort (2009): “*by treating the firm as a black box, the [neo-classical] theory remains silent on how the owners of firms succeed in aligning the objectives of its various members like workers, supervisors, managers with profit maximization*”. The essential contribution of the incentive theory is hence to open the black box of the firm, and to understand what happens when the agents that compose the firm have diverging interests and are in a position to extract a rent from behaving in their own interest.

The so-called *theory of teams* (Marschak and Radner, 1972) considers an asymmetric information, but still benevolent agents whose objectives are aligned with those of the firm. The workers do not try to capture an informational rent, and incentives still do not matter. By contrast, if the agents are opportunistic but the information is complete, it is possible (and not costly) to constraint the agents’ behaviour. Hence, the problem arises when there are both an asymmetric information and diverging goals: “*Conflicting objectives and decentralized information are thus the two basic ingredients of incentive theory*” (Laffont and Martimort, 2009).

Contrary to the Transaction Cost Theory presented below, which assumes that economic agents are boundedly rational, the incentive theory keeps the neo-classical assumption of a perfect rationality of the individuals: albeit the future is uncertain, the agents are expected to be able to identify all possible evolutions of the situation, as well as their respective probabilities. However, whereas the Principal has a perfect knowledge of the game, he lacks the knowledge of the choices actually made by the Agent. In other words, the incentive theory assumes an asymmetry of the information that can consist in a lack of knowledge on either the characteristics of the Agent (*adverse selection*), or her behaviour (*moral hazard*). This asymmetry of information creates an informational rent for the Agent. Hence, the goal of the incentive theory

is to determine by what means the Principal can incite the Agent to reveal the private information he has and/or to act in a manner that maximizes the Principal's utility. *"The incentive theory helps to understand to what extent the contract allows to solve conflicts of interest between the organization as a whole and the individuals who compose her"* (Faure-Grimaud and Martimort, 2005).

A possible solution to the puzzle of asymmetric information (second best optimum) is to share the informational rent, in order to incite the agent to share his private information. The principal can present a finite set of contracts, while anticipating that the agent will choose the contract that maximizes his own utility (that is, the principal acts as a Stackelberg leader). In this case, problems arising from renegotiation can be avoided. This however presupposes that there exists a legal framework that allows to enforce the contract, and that the principal is able to evaluate the agent's response function (Gibbard, 1973; Satterthwaite, 1975).

A generalization of the principal-agent framework is sketched by Holmstrom and Milgrom (1991), who study the case of an agent who has to perform several different tasks, or one single task with several dimensions. In this context, Holmstrom and Milgrom show that an incentive scheme based on performance may lead the agent to make too much effort for the observable task, and to provide a suboptimal level of effort for the unobservable task or dimension. This could lead the cure (that is, the incentive scheme) to be worse than the disease. As an example, they mention the case of a teacher who has to provide his students some qualifications that are measurable in tests ("basic skills"), and some other that are not measurable (*e.g.* creativity, curiosity): such an incentive scheme may lead the teacher to pay too much effort on the former at the expense of the latter. Another case is that of an agent who has to operate an infrastructure (owned by the principal) in order to produce an output (measurable task) but simultaneously has to maintain and improve this infrastructure (unmeasurable task). The operator is incited to overuse the asset in order to maximize his production, without considering its final value. This highlights the importance of ownership in an agency relationship, an issue that will be analysed deeply by the property rights theory (see below in Section 1.1). For the authors: *"This result may explain a substantial part of the puzzle of why incentive clauses are so much less common than one-dimensional theories would predict"*.

The Incentive Theory is mostly normative and has been the subject of quite few empirical verifications. Empirical literature include Lazear (2000), who considers the impact of performance pay on workers' productivity in a car windshields manufacture. They show that the replacement of hourly wages by piece-rate pay lead to an increase of the productivity of 44 percent. About one half of this effect is due to incentive effects, the other half to a positive workers selections (more productive workers have been hired). However, an adverse effect on quality has been observed. This last point is in line with the model of Holmstrom and Milgrom (1991): as the task had an observed part (the quantity) and an unobserved part (the quality), the agents sacrificed the latter for the former.

Another empirical study in line with Holmstrom and Milgrom's multi-tasking



model is that of Brickley and Zimmerman (2001), who consider the case of the introduction of a new incentive scheme in a top-tier business school at Rochester University in the 1990's. This incentive scheme consisted in linking the wage of the faculties with a set of measures of the quality of the teaching they provided. Consistently with Holmstrom and Milgrom's expectations, this led to an improvement of the quality of teaching, at the expense of the research output.

By its very nature, the Incentive theory still does not explain the *make-or-buy* decision, as it does not consider that there *is* a difference between *make* or *buy*. On the contrary, it limits itself to find a way to improve the efficiency, for a *given* organization. In other words, the issues raised by the Incentive theory are *subsequent* to the *make-or-buy* decision. Even though differences in the difficulty of providing the right incentives dramatically affects the relative efficiency of different organizational choices, which in turn should influence the *make-or-buy* decision, this important issue has not been considered by the incentive literature. As noted by Malin and Martimort (2000): *"Incentive theory has nothing to say about such things as the distribution of authority within an organization, the limits of the firm, the separation between the public and the private spheres of the economy, and more generally nothing to say about organizational forms and designs"*.

## 1.2 The Transaction Cost Theory

### 1.2.1 Coase: Why do firms exist ?

In the previous sections, we have seen that neither the neo-classical economics nor the incentive theory ask the very question of the existence of the firm. On the contrary, this question is at the heart of the Transaction Cost theory, whose foundations are however older than the incentive theory.

In his seminal paper, Coase (1937) asks three questions, namely: why do firms exist, what is a firm, and which trade-offs determine the boundaries of the firm. Doing so, he lays the foundations for what is to become the Transaction Cost Theory. He introduces the concept of transaction costs as a means to explain the existence and the boundaries of the firm. The cornerstone of this approach is that, as there exist frictions in physical systems, there also exist frictions in the market. These frictions — transaction costs — make it costly to recourse to the market price mechanism, and hence explain why it is profitable to integrate some activities in a formal structure, that is, a firm. The advantage of hierarchy is that it allows to avoid the transaction costs. Indeed, in a firm, the authority of the entrepreneur replaces the price mechanism as a coordination mode: *"If a workman moves from department Y to department X, he does not go because of a change in relative prices, but because he is ordered to do so."* Coase (1937). Every time a hierarchical superior orders a subordinate to do something, he has not to negotiate, or to write a specific contract for this task, which would generate transaction costs. Neither has he to anticipate the future evolutions

of the situation: if the situation changes, he can simply change his orders and impose them to the subordinate, to the extent that it corresponds to the employment contract.

According to Coase, transaction costs can be explained by several factors. First, relaxing the assumption of full and relevant information, the functioning of the market price mechanism (i.e. the *buy*) is costly, as it incurs a cost for the agents to get the relevant information they base their decisions on. Secondly, there are significant costs related to the process of negotiating a contract at each stage of the production. Moreover, these costs tend to increase along with uncertainty. Even in a world without uncertainty, the complexity of the available information is so huge that the agents are not able to use it appropriately; this issue is known as *bounded rationality* and will receive further attention by Simon (Simon, 1955; Simon, 1961; Simon, 1978). Finally, enforcing a contract is also costly, as each party has to monitor the activity of the other one.

However, if the *buy* generates transaction costs, the *make* also incur specific costs, that are internal to the firm. These governance costs are the costs related to the management of the firm, to the control of the efforts and the performance of the subordinates, but also the risks that the entrepreneur, who has bounded rationality, makes mistakes and takes bad decisions. As Coase (1937) notes: “*it may be that as the transactions which are organized increase, the entrepreneur fails to place the factors of production in the uses where their value is greatest, that is, fails to make the best use of the factors of production*”, and concludes that “*firm will tend to be larger the less likely the entrepreneur is to make mistake.*”

Hence, there is a trade-off between the integration (the firm, *make*) and the decentralization (the market, *buy*). Both coordination mechanisms are costly, and what determines the choice between market and integration will be the relative level of these two kinds of costs. For a given task, if the bureaucratic costs (the costs that occur within the firm) exceed the transaction costs (the costs of the market mechanism), it is profitable to integrate the activity in the firm. Otherwise, it is profitable to let the market performing this task.

Albeit Coase built the theoretical foundations of a transaction cost based analysis of the firm, thus opening the black box of the firm, it was only in the years 1970's that the literature explored the very nature of the transaction costs and of their determinants. This analysis is crucial, as the determinants of the transaction costs are *in fine* determinants of the *make-or-buy* decision.

## 1.2.2 Williamson: The Transaction-Cost Theory

### Underlying hypotheses

Coase's framework has been broadly extended by Oliver Williamson<sup>1</sup>, whose framework relies on human (behavioural) and environmental issues. The former are based first on bounded rationality and secondly on the concept of opportunism, i.e. a particular form of personal interest seeking characterised by a component of deceit, which

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<sup>1</sup>Above all Williamson (1975), Williamson (1981) and Williamson (1985).

can take the form of theft, cheating and/or lies, but also on mechanisms of adverse selection and moral hazard (Williamson, 1985).

Bounded rationality is not a problem *per se* when the world is certain. Indeed, bounded rationality is a limit in the ability of an individual to tackle the complexity of the environment. When the world is certain, the individuals do not reach the boundaries of their rationality (Williamson, 1975; Saussier and Yvrande-Billon, 2007).

By contrast, the presence of uncertainty and bounded rationality leads the contracts to be incomplete. Once again, the fact that a contract is incomplete is not a problem as long as the agents are benevolent: assuming boundedly rational but benevolent agents, it is not necessary to stipulate a perfect contract, since parties will not take profit from contractual loopholes but will fill in of contractual omissions without seeking an undue advantage. By contrast, assuming opportunistic but unboundedly rational agents, it won't be costly to fix binding rules in perfect contracts, that is, to tie the hands of opportunistic contractors. In other words, bounded rationality makes contractual complexity *costly* whereas opportunistic behaviour makes it *necessary*. However, the existence of a competitive market may allow to reduce these transaction costs, as it makes it possible to replace a contractor that behaves opportunistically, but also to use benchmarking or yardstick competition to compensate the bounded rationality. Hence, the fourth condition for the existence of transaction costs is the small number relationship. Small number relationship leads the contractual relationship to be specific, so that it is costly for one party to end up the contract. The consequence is that it is not possible to sanction a party for behaving opportunistically. It is only when these four conditions are present — bounded rationality, uncertainty, opportunism, and small number relationship — that transaction costs arise, and that it may be profitable to internalize rather than resorting to the market.

## Determinants of transaction costs

The next step of the analysis is then to operationalize these four factors and to identify the very determinants of transaction costs. Two main determinants are relevant, namely uncertainty, and asset specificity.

A higher level of uncertainty on the future evolutions of the world makes it impossible to stipulate a complete contract. Hence, this concept is closely related with the assumption of bounded rationality: if the world is uncertain, but the agents are perfectly rational, they are still able to evaluate all possible (contingent) evolutions of the world and to write a complete contract, so as to constraint the actions of the other party, whatever the state of nature. Uncertainty creates a typical principal-agent problem, relying on asymmetric information, namely the difficulty of measuring the outcome and assessing it. Uncertainty may cause contracting difficulties in so far it allows opportunistic agents to take profit from information asymmetries or from the result of changing circumstances. As a result of this, the transaction-cost theory expects every factor leading to an increasing uncertainty to foster the *make* decision, *ceteris paribus*. It follows that the more difficult it is for the principal to specify precisely *ex ante* in the contract relevant and measurable properties of the

outcome, the higher will be the incentive to adopt a dishonest behaviour (Alchian and Demsetz, 1972). Moreover, a weak measurability also means that *ex post* control mechanisms will be costly, while at the same time being necessary because of opportunism. As a consequence, measuring difficulty is a parameter which facilitates opportunistic behaviour, and thus increases transaction costs.

Whatever the ease or difficulty of measurement, the most important factor which facilitates opportunism in situations of small number relationship is the so-called *hold up problem* (Klein, Crawford and Alchian, 1978; Williamson, 1979; Williamson, 1985). This problem occurs when a party would incur a significant loss if the other party withdrew from the contract. In that case, the latter would be able to behave opportunistically, putting pressure on the former to obtain some advantages and threatening it to terminate the contract if it does not accept to renegotiate the conditions. This *ex post* asymmetry in bargaining power can occur when one party has done an important investment in specific assets, that is to say human or physical capital whose productivity would be significantly lower when used for purposes other than those initially intended. In this way, this investment will be a sunk cost for the firm which has made it. Asset specificity may include the following components (Williamson, 1981; Williamson, 1985):

1. **Site specificity** manifests itself when the production requires the use of one or several assets which cannot be relocated, or might only be relocated with exorbitant costs, and when the distance between the asset and the consumer or another infrastructure matters. That is the case for example when successive stages of production are concentrated in a limited area.
2. **Physical asset specificity** means that a physical asset, albeit possibly mobile, has properties specially designed for the purpose stated in the contract, meaning that the productivity gains due to those properties will be lost when using the asset for any other purposes. An example is specific purpose software or machines.
3. **Human asset specificity** means that employees developed specialised skills acquired by a training or by the experience but cannot use those skills when making another job. This concept of industry- or firm-specific human capital is very common in labour economics.
4. **Dedicated assets** are assets which are technically non specific, but were created for the production of a given good or service. If the production of this good or service were stopped, there would be a production overcapacity causing this asset not to be used any more, or to be used with a lower productivity. It is the case if an asset, for example a plant, is constructed or expanded to satisfy the demand of a unique customer.
5. **Temporal specificity** (Williamson, 1999b) occur when the different stages of the production process have to be synchronized.

6. **Brand name** (Williamson, 1993a) include the added value of all non-material elements that increase the value of the asset, as for example a good reputation.

Asset specificity constitutes barriers to entry and/or to exit which that lock the parties in a bilateral dependency that may allow one of the parties to capture a quasi-rent. Including safeguard clauses (contractual or not) may however limit the risk of such opportunistic behaviour based on asset specificity. Safeguard clauses consist in credible commitment and credible threats (“*unilateral efforts to preempt an advantage*” (Williamson, 1985)) that makes it profitable for the parties not to behave opportunistically. As an example of credible threat, the parties may stipulate a contractual penalty clause which deters a party to rescind the contract before its term<sup>2</sup>. On the contrary, credible commitments aim to create a relationship of trust and rely on “*a contract in which a promisee is reliably compensated should the promisor prematurely terminate or otherwise alter the agreement.*”(Williamson, 1996, p.377). Such is the case, for example, when both parties have invested in a specific asset: both have an incentive to maintain the contract until its term, and even to renew it, because both would incur sunk costs if the contract were terminated prematurely. With such an exchange of hostages, the contractual relationship moves from unilateral to bilateral dependency, in other words from a virtual monopsonistic market to a bilateral monopoly. Obviously, this however opens the field for strategical games. Safeguard clauses may also include bonuses for good performance, means of dispute resolution (*e.g* arbitration), or mechanisms of adaptation in case of unforeseen circumstances.

An alternative to safeguard clauses is the neoclassical contract (relational contract), whose goal is not to specify the transaction *per se*, but to specify how the contract will evolve. In the case of a neoclassical contract, a relationship of trust comes from the fact that the parties always acted fairly and honestly in the past, allowing the control mechanisms to be loosen, and thus the transaction costs to be reduced. In that case, as the identity of the parties matter, both parties would suffer from the termination of this trust-based contractual relationship. In this regard, the neoclassical contract can be considered as an hybrid solution between hierarchy (vertical integration) and market.

The empirical literature confirms the importance of these factors in the *make-or-buy* decision of firms<sup>3</sup>. In a study of a sample of tasks and components of a naval shipbuilder, Masten, Meehan and Snyder (1991) show a large impact of temporal specificity on the *make-or-buy* decision, but also a significant impact of human capital specificity. In addition, they show that outsourcing the production of a component that ought to be internalized (*misalignment*) leads to an increase of up to 70 percent of the organization costs.

Grady (1988) in the case of railroads in the 19th century in New Jersey, and Levy and Spiller (1994) in the case of telecommunications, show that credible commitment

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<sup>2</sup>However, in that case the bargaining advantage of the buyer still remains at the term of the contract. Long-term contracts can allow him to amortize the sunk costs, but they are also subject to more uncertainty (and bounded rationality), which in turn increases the transaction costs.

<sup>3</sup>See Masten and Saussier (2000) for a survey of empirical research on the way asset specificity influences the contractual design.

allows the agents to engage in a contractual relationship despite the existence of specific assets. In the same vein, Joskow (1985; 1987) show that firms in the coal industry — an industry marked by a strong site specificity, as well as physical capital specificity — prefer to stipulate longer contracts (rather than having to renegotiate frequently new contracts) when asset specificity is high.

Using data on the organizational choices of the automobile manufacturers Ford and General Motors in 1976 for 113 automotive components, Monteverde and Teece (1982) show that components that are specific to one manufacturer are more frequently integrated within the firm. They conclude that *“General Motors and Ford are more likely to bring component design and manufacturing in-house if relying on suppliers for pre-production development service will provide suppliers with an exploitable advantage.”*

### **Limits of the TCT**

Several limitations of the TCT can be highlighted. First, the hypothesis of opportunism, which is central in TCT, has been called into question, among others by Ghoshal and Moran (1996), who consider that the opportunism assumption made by Williamson is extreme, as it attributes too much weight on a rather phenomenon that is too seldom to justify the existence of transaction costs. Ghoshal and Moran (1996) suggest that: *“By incorporating opportunism as an attitudinal variable, which is conceptually separate and distinct from its behavioural manifestation, the predicted power of the theory can be broadened to cover more firms and different types of market.”*

The concept of bounded rationality has also been criticized. For Dow (1987), there is a hiatus between the between the fact that bounded rationality is a necessary assumption to explain transaction costs, and the fact that rational choices are made regarding the contracts and governance structures. In addition, as we have seen above, the TCT considers that bounded rationality is not a problem when there is no uncertainty. However, this hypothesis is restrictive, as bounded rationality may also have effects in a world that is certain, but very complex (Saussier and Yvrande-Billon, 2007). This can be illustrated by the game of chess: albeit the environment is certain, its huge complexity makes the bounded rationality of the players relevant.

Finally, TCT does not allow to explain the existence of some alternative organization forms, such as network organizations. In this kind of organizations, the coordination mechanism is neither the price (as in the *buy*), nor hierarchy (as in the *make*), but mutual trust. The economic exchange turns to a social exchange. An example of such networks is the *Keiretsu* conglomerates, which are a very important part of the industry in Japan. In these networks, the involved firms have incentives to maintain the relationship, not because it would be costly for them to end a contract, but because there is a more general, social interest that dominates and that fosters the search for compromises rather than disputes.

## 1.3 The Incomplete Contract Theory

The incomplete contracts theory has been built on the basis of the Transaction Cost Theory. According to Grossman and Hart (1986), its goal is to formalize the intuitions depicted of the TCT, and to provide an answer to the open question of why it is profitable to organize the transaction inside the firm<sup>4</sup>: *“In particular, given that it is difficult to write a complete contract between a buyer and seller and this creates room for opportunistic behavior, the transactions cost-based arguments for integration do not explain how the scope for such behavior changes when one of the self-interested owners becomes an equally self-interested employee of the other owner.”*

As an essential strand of the Incomplete Contracts Theory, the property rights theory aims to explain the existence and the boundaries of the firm by an optimal allocation of the ownership on assets. Ownership over an asset can be defined as: *“the residual control rights [i.e. the rights that cannot be specified in the contract] over that asset: the right to decide all usages of the asset in any way not inconsistent with a prior contract, custom, or law”* (Hart 1995). The firm is hence defined as a set of (non-human) assets. Three theoretical contributions built the foundations of this theoretical strand, namely Grossman and Hart (1986), Hart and Moore (1990), and Hart (1995).

The theoretical model of Grossman and Hart (1986) considers two firms, one of which sells a good to the other one. Both firms can realize a specific non-verifiable investment that increases the global surplus. However, the fact that a firm realizes this investment or not is not contractualizable ex-ante. The timing of the game is the following: (1) the contract is signed; (2) each firm decides its level of investment; (3) the contract can be renegotiated without costs (4) each firm realizes its production; (5) the surplus is shared according to the way stipulated in the contract. The goal of the model is hence to determine the optimal contract, studying the impact of the different possible structures of ownership on the investments and hence on the total surplus<sup>5</sup>.

The first-best optimum corresponds to the maximization of the total surplus (the surplus of both firms), which would be obtained if the levels of investment as well as the actions of both firms were contractualizable. Grossman and Hart show that this first-best optimum cannot generally be obtained, unless both investments only have a minimal impact on the surplus. When this is not the case, each firm chooses a level of investment that maximizes its own surplus, which leads to non-optimal investments at the Nash equilibrium. The ownership structure leading to a second-best equilibrium depends on the impact of each investment on the total surplus. When the investments realized by both firms have a quite similar impact on the surplus, the

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<sup>4</sup>In the same vein, Williamson (1993b) argues that: *“The need, plainly, was to develop formal models of incomplete contract. That got under way with the publication of the path-breaking paper by Sanford Grossman and Oliver Hart”*

<sup>5</sup>As an example, Grossman and Hart mention an electricity generating plant, buying the coal extracted from a mine. The mine can realize an investment that makes it possible to remove some impurities from the coal, which in turn increases the yield of the electricity plant. As there exist a large variety of impurities, it is not possible to write a contingent contract on the quality of the coal.

second-best optimum is obtained when the firms are not integrated. When on the contrary the investment of one firm has a significantly stronger impact than the other on the surplus, it is socially profitable that the former has the property rights<sup>6</sup>.

The figure 1.1 illustrates the predictions of the GH model (MacLeod, 2014). The x-axis shows the relative importance of the specific investments of two agents, namely the Principal (P), and the Contractor (C). This relative importance is measured by the parameter  $\lambda$ :  $\lambda = 1$  means that the principal's investment (Asset 1) is the only relationship-specific investment, whereas  $\lambda = 0$  means that the contractor's investment (Asset 2) is the only relationship-specific investment. The y-axis measures the welfare. The top dotted line represents the Coasean efficient solution in absence of transaction costs. The three other curves  $W_{NI}(\lambda)$ ,  $W_P(\lambda)$ , and  $W_C(\lambda)$  show the respective payoffs in the Grossman-Hart framework under non-integration, and under ownership by each of the agents. This figure shows that it is profitable that the residual control rights belong to the agent whose investment is the more specific to the relationship when the differences are substantial: at  $\lambda_1$ , the contractor has more relationship-specific assets than the principal, in this case, the residual control rights should belong to the contractor (C-integration). By contrast, at  $\lambda_3$ , the contractor has *less* relationship-specific assets than the principal, in this case, the residual control rights should belong to the principal (P-integration). Finally, when the relative importance of both investments is close (as it is the case at  $\lambda_2$ ), it is profitable not to integrate.

Hart and Moore refine this analysis, allowing the ownership to be shared between several agents, and considering the impact of ownership (i.e. the identity of the owner) on the employees' incentives. Their model consists in a set of assets, and a set of individuals who can (but have not to) make a specific, non-verifiable investment (*e.g* in human capital) at time 0. At time 1, the agents form *coalitions* to use the assets they own. At the end of the game, the surplus is shared between the members of the coalitions. The authors show that when only one agent makes an investment, he should own all the assets; similarly, an agent who makes no investment should own no asset. Another important result is that the control over an asset should not be shared between several agents. An agent should own the assets to which he is *indispensable*, that is, assets that do not increase the value of investment in a coalition the agent does not belong to. Finally, complementary assets should belong to the same agent or coalition.

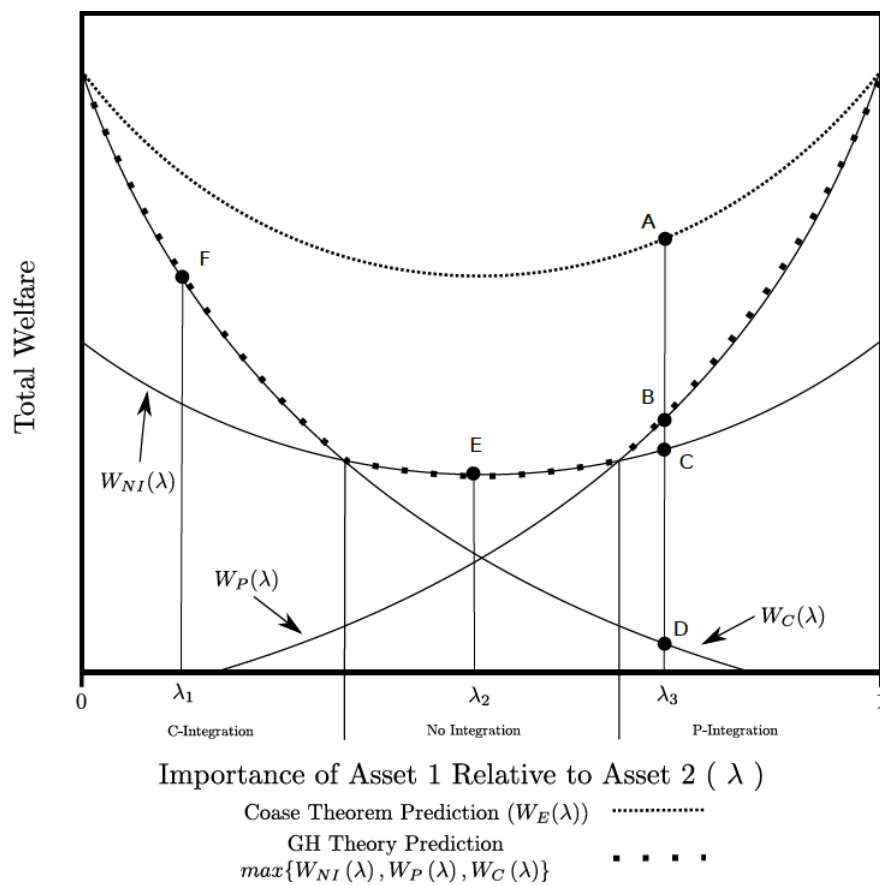
The property right literature considers that the governance of a firm is quasi identical to that of the market. For Hart and Moore (1990), the difference is that a firm that hires workers to perform a task (that is, a firm that integrates the task, *make*) can fire the only workers who do not their job properly, whereas if it stipulates a contract with another firm (non-integration, *buy*) it has no choice but firing the *entire* contractor firm.

Some criticisms have been addressed to the Incomplete Contracts Theory. Maskin and Tirole (1999) and Maskin (2002) call into question the existence of transaction

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<sup>6</sup>For a numeric example, see Aghion and Holden (2011).





Source: MacLeod (2014)

Figure 1.1: Predictions of the model of Grossman and Hart (1986)

costs sufficiently important to create contractual incompleteness. For them, even boundedly rational agents are sufficiently rational to make these transaction costs irrelevant. It should be sufficient for the agents to be able to specify *ex-ante* at least the *payoffs* of each contingency, without having to consider the possible physical contingencies. In other words, the so-called *irrelevance theorem*<sup>7</sup> states that a contract over the payoffs of each state of the world is feasible, and is equivalent to a complete contingent contract (see also Sappington and Stiglitz (1987)).

Tirole (1999) notes the lack of a clear definition of incomplete contracts in the literature: “*While one recognizes one when one sees it, incomplete contracts are not members of a well-circumscribed family; at this stage an incomplete contract is rather defined as an ad hoc restriction on the set of feasible contracts in a given model*”. He also notes that “*By lack of a better definition, we will say that a contract is incomplete if it does not exhaust the contracting possibilities envisioned in the complete contracting literature.*”

Finally, Williamson (2000) criticizes the fact that the Theory of Incomplete Contracts only considers maladaptations that result from ex-ante investments, while neglecting inefficiencies arising in the execution of the contract.

In addition to these fundamental criticism, another frequent criticism against the Incomplete Contracts Theory is that its propositions are much difficult to test than those from the Transaction-Cost Theory (Whinston 2003). For Williamson (2000): “*GHM makes very limited contact with the data whereas [...] TCE is an empirical success story*”. Among the few exceptions, we find the study of Hart et al. (1997) (see below in Section 1.5) on private prisons in the United States, and the article of Bajari, Houghton and Tadelis (2014) on paving contracts.

## 1.4 Synthesis

In the previous subsections, we discussed the different contract theories. Table 1.1 shows a synthesis of the theories presented above. The starting point was the neo-classical theory of production which supposes perfect, symmetric information, unboundedly rational agents and considers the firm as a *black box*.

The incentive theory relaxes the hypothesis of symmetric information and allows the existence of ex-ante (adverse selection) or ex-post asymmetries (moral hazard), yet the agents are still expected to be perfectly rational. The firm is now a “*legal fiction*”, that is, a node of contractual relationships between the *Principal* and the *Agent*. The issue is then to determine a menu of contracts or a remuneration scheme as well as performance measures that force the agents to reveal their private information, and to behave in the interest of the principal. However, the Incentive Theory does not provide a definition of the firm, nor does it explain its boundaries. As noted by Malin and Martimort (2000): “*Incentive theory has nothing to say about such things as the*

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<sup>7</sup> “*If parties can assign a probability distribution to their possible future payoffs, then the fact that they cannot describe the possible physical states (e.g, the possible characteristics of the good to be traded) in advance is irrelevant to welfare. That is, the parties can devise a contract that leaves them no worse off than were they able to describe the physical states ex ante.*” (Maskin, 2002)

*distribution of authority within an organization, the limits of the firm, the separation between the public and the private spheres of the economy, and more generally nothing to say about organizational forms and designs.”*

By contrast, the cornerstone of the transaction-cost theory is the so-called *make-or-buy* decision, that is, the delimitation of the boundaries of the firm. Amongst all theories of the firm we presented, the transaction-cost theory is the only one who considers the firm as a real (hierarchical) structure. As in the incentive theory, the TCT considers that the information is asymmetric. However, the TCT goes a step further, and considers that the information is also incomplete (uncertainty), and that the agents are boundedly rational. In addition, two other conditions are necessary for transaction costs to occur, namely agents’ opportunism, and small number relationship. This results in a trade-off between centripetal forces (transaction costs) that foster integration, and centrifugal forces (economies of scale, lower governance costs) that foster contracting-out.

Finally, the incomplete contract theory keeps the TCT hypotheses of bounded rationality and incomplete information, albeit the information may be symmetric. However, as in the Incentive theory, the firm does not exist as a structure. In the incomplete contracts theory, the firm is a set of intangible (non human) assets. The goal of the incomplete contracts theory is hence to determine which party of the contract should own these assets, that is, have the residual rights (all rights that are not specified in the contract) on these assets.

Albeit the bases of the Transaction-Cost Theory and of the Incomplete Contracts Theory are somewhat different (Kreps, 1996; Tirole, 1999), they do not necessarily exclude each other. On the contrary, Williamson (2000) argues that: *“It is noteworthy that Grossman and Hart (and related papers of this kind) work from transaction cost economics premises — albeit with terminological differences. Thus Grossman and Hart employ the terms noncontractibility and nonverifiability rather than bounded rationality. And they refer to ‘relationship-specific investments’ rather than asset specificity. Unanticipated state realizations, and the need to adapt thereto, are what pose contractual strains in their model. So uncertainty makes an appearance”*.

## 1.5 Specificities of the *make-or-buy* Decision for Public Services

Albeit the three contract theories presented above have originally been developed in the private sector, most of their concerns can easily be transposed to relationships involving the public sector. In particular, transaction cost issues are as much relevant in the case of the *make-or-buy* decision of a public authority for a public service as they are in the case of the *make-or-buy* decision of a firm. Contractual hazards are still the cornerstone of the *make-or-buy* decision (Williamson, 1979). In addition to the framework of the contract theories presented above, which is valid both in the private and in the public case, the analysis of the *make-or-buy* decision for public services is influenced by some factors that are more specific to the very case of the

Table 1.1: The theories of contracts

Theory	Objective	Information	Rationality	Nature of the firm	Coordination mechanism	Main contributors
<b>Neo-classical theory of production</b>	Set up the quantity of output to produce and the use of input factors, so as to maximize the profit.	Perfect, Symmetric	Unbounded	Black box	Price	Walras, Jevons, Marshall, Pareto
<b>Incentive theory</b>	Set up the best set of rewards and performance measures, so as to incite the agent to act in a way that maximizes the Principal's interest.	Complete, Asymmetric	Unbounded	Node of contractual relationships, "legal fiction"	Incentives	Jensen and Meckling (1976); Laffont and Tirole (1993); Holmström and Milgrom ;
<b>Transaction Theory</b>	<i>make-or-buy</i> decision, boundaries of the firm	Incomplete, Asymmetric	Bounded	Hierarchical governance structure	Hierarchy	Williamson
<b>Incomplete Contract Theory</b>	Optimal allocation of ownership	Incomplete, Symmetric between the agents but asymmetric with third-parties	Bounded	A set of intangible and physical assets	Property rights	Grossman and Hart (1986); Hart and Moore (1990)

public sector.

### 1.5.1 Specificities of the Public Sector

The first important issue that is relevant for the *make-or-buy* decision for public services is the specificities of the public sector and its internal organization. Several characteristics of the public sector affect the efficiency of the *make*, and hence may foster the *buy*.

First, the economies of scale and the lack of know-how that contribute to justify the *buy* in an industrial context are usually stronger in the case of public service, particularly at the regional and local levels. Indeed, public administrations are all-purpose structures, who deliver a very large amount of very different services. In this case, it is very difficult to be able to reach productive efficiency in such a large number of domains. By contrast, private firms are more specialized in a smaller number of tasks, which allow them to acquire a better know-how, as well as to generate economies of scales.

Secondly, the private sector is generally best able to manage (and to pool) some risks than the public sector. Competition in the private sector also allows to make it more efficient than public local monopolies.

Another specific feature of the public sector is the fact that its activities are more under scrutiny than the activities of the private sector. Political opponents and interest groups, but also the citizens, maintain a strong monitoring of the activities of the government and of the whole public sector. In particular, contracts between the public sector and the private sector (Spiller, 2008; Moszoro and Spiller, 2012; Moszoro and Spiller, 2014) — and even more public–public contracts (Moszoro and Spiller, 2014) — are more strongly monitored than private–private contracts. As Beuve, Moszoro and Saussier (2015) note: “*Public contracting [...] is characterized by formalized, standardized, bureaucratic, and rigid procedures, partly because politics must be secured against third-party opportunism.*”. In a study on 396 private–private and 141 private–public car park contracts signed between 1985 and 2009 in France, Beuve et al. (2015) show that political contestability lead the arrangements between the public and the private sector to be more rigid than pure private contracts.

Finally, another feature of the public sector is bureaucracy. In a general sense, Weber (1922) defines bureaucracy as an organizational mode characterized primarily by impersonality (duties are related to the position instead of the persons), hierarchy, division of labor, contractual relationships, a selection of officials based on technical qualification, fixed salaries, full-time employment, promotions in the hierarchy according to the achievements, a separation between office property and personal property and finally a strong discipline. Bureaucracy, from the perspective of Weber, is supposed to be an ideal, rational organizational mode. The bureaucracy and the associated hierarchy may be considered as a means of reducing principal-agent problems, by constraining the choices of the agent (Jensen and Meckling, 1976). Whereas Weber supposed the bureaucracy to improve the rationality and the efficiency of an organization, Crozier (1963) distinguishes the bureaucracy–rational organization and

the bureaucracy–dysfunction. The latter is a consequence of the so-called *bureaucratic vicious circles*<sup>8</sup>. One vicious circle, sketched out by Gouldner (1954), occurs when the presence of strict controls provokes a lower motivation of the officials, which in turn triggers stricter controls. Thus, the Weberian bureaucracy induces a strong rigidity of the management, which works against the objective of efficiency, slowing down the decision-making. Furthermore, the bureaucratic organization suffers from poor incentives to be efficient, as sketched out by Wildavsky (1964) and Warren (1975): bureaucratic systems, especially in public administrations, are subject to perverse incentives in their budgetary process. Indeed, the officials are incited to use every year the totality of their budget, knowing that if they do not so, the budget of the following year is susceptible to be cut back. This may lead to unnecessary expenditure. In addition to the drawbacks of an highly bureaucratic system, the public bureaucracy induces even lower incentives to be efficient, as it relies on a promotion scheme which, contrary to the ideal Weberian model, is not (only) based on performance but also, and mainly, on seniority. As a result, the provision of public services by State officials is supposed to be inefficient, as the public administration is by nature highly bureaucratic. However, even assuming that New Public Management measures increase the efficiency of public provision, and thus reduce the propensity to contract-out, this effect may be mitigated by the fact that the municipalities that privileges contracting-out for ideological reasons are to a certain extent the same that establish NPM policy. In addition to the transaction costs related issues presented above, another source of inefficiency may come from the lack of competition of the private market. A large empirical literature supports the intuitive fact that the degree of competition of the private market is a key issue affecting the relative cost-efficiency of public and private procurement. Numerous studies show that in the best case, a non-competitive market, even if it is regulated, does not provide the service at a lower cost than a public provider (Färe, Grosskopf and Logan, 1985; Atkinson and Halvorsen, 1986; Kay and Thompson, 1986; Parker, 1995; Wallsten, 2001; Zhang, Parker and Kirkpatrick, 2008). In the worst case, the private mono- or oligopolist is clearly less cost-efficient than the public provider. As sketched out by Werkman and Westerling (2000): “*The most important influence on the performance of an enterprise from the standpoint of efficiency is competition – not public or private ownership*”. Brown and Potoski (2003) included this factor in their analysis of the size of the cities and their urban status, regardless of the service. However, the degree of competition also depends on service characteristics: even small rural municipalities may have access to a very competitive market for certain services, whereas some other services face a monopolistic market even for large cities. This is particularly important in Switzerland, due to the smallness of the distances between municipalities.

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<sup>8</sup>“A bureaucratic organization is an organization which is based on the existence of a series of rather stable vicious circles, which develop from the climate of impersonality and centralization.” (Crozier, 1963, p.237)

## 1.5.2 Specificities of public deciders

When translating the *make-or-buy* framework from the industry to the public sector, the personality of the deciders becomes a critically important issue. In the case of the *make-or-buy* decision for a firm, it is reasonable to assume that there is a convergence of goals between the decider and the firm. When the decider is a political authority, this assumption becomes heroic. For Stigler (1971, p.3): “[P]olitics is an imponderable, a constantly and unpredictably shifting mixture of forces of the most diverse nature, comprehending acts of great moral virtue [...] and the most vulgar venality.”. Finally, Spiller (2008) considers that: “A fundamental difference between private and public contracts is that public contracts are in the public sphere, and thus, although politics is normally not necessary to understand private contracting, it becomes fundamental to understanding public contracting”.

### Ideology-driven decision making

The first source of deviation between the social optimum and the decisions taken by the authority comes from the fact that elected politicians may base their decisions not only on pragmatic efficiency considerations, but also on their ideological point of view. In this context, we still assume that politicians are benevolent social planners who do not move away *deliberately* from general interest objectives, but whose analysis of the pros and cons of policies is distorted by their political opinions. This can lead them to contract out public services despite significant risks and drawbacks, or on the contrary to refuse to contract-out a service albeit this would increase the efficiency and the social welfare. Consequently, the ideological bias may act towards public provision (*make*) as well as towards contracting out (*buy*).

### Rent seeking

The cornerstone of rent seeking theories rely on relaxing the assumption that civil servants and policy makers are benevolent agents who seek selflessly to serve the interests of the citizens. On the contrary, Public Choice advocates (Buchanan and Tullock, 1962; Niskanen, 1971) assume that elected politicians are selfish profit maximisers whose goal is to capture a rent while ensuring their reelection. From that perspective, policy makers may be alienated from contracting out public services, in so far they would lose the ability to hire political friends or relatives (the so-called *cronyism* or *nepotism*) or to use public policies to favour prospective electors (*clientelism* or *patronage*). This is supposed to cause policy makers to seek to maximize their sphere of influence (Boycko et al., 1996), which may induce a bias towards public provision (López-de-Silanes et al., 1997). The bias induced by rent-seeking may however also play in favour of contracting-out: policy makers may decide to contract-out in order to favour a particular firm, either for clientelism, or to receive bribes.

Finally, rent-seeking may be connected with the political agenda. As policy-makers want to be re-elected, they have incentives to develop new infrastructures, rather than to maintain existing infrastructures, as new realizations have usually a positive

impact on the image. This may lead the authorities to build *white elephants*, that is, infrastructure whose costs (building, maintenance, or operation) clearly exceed their social utility (Engel et al., 2009).

### 1.5.3 Specificities of public services

Finally, the last specificity of the *make-or-buy* decision for public services is the very nature of these services.

First, public services may be very complex. Most of the time, a public service consists in several tasks, that are more or less independent from each other. This complexity significantly increases the contractual difficulty. An example is provided by the study of Hart et al. (1997) in the case of prisons in the United States. Whereas the vast majority of prisons are publicly owned and provided, the number of private prisons has strongly increased during the years 1980s and 1990s, with a forty-fold increase of the capacity between 1985 and 1994. Private prisons generate huge cost reductions (about 10 percent per prisoner), mainly by hiring under-qualified warders. The corollary is that private prisons experience more problems than public ones, in terms of injuries to staff and prisoners, as well as uses of force. This suggests that prisons fit in with the hypotheses of the model presented above (incomplete contract, cost reduction at the expense of quality). Consistently with the fact that contracting should be preferred for less complex tasks, the authors observe that private prisons are mostly youth correctional facilities, where the adverse effects of cost reduction on quality are the lowest, and almost never high security prisons. By contrast, some public services may be quite easy to contract-out. Garbage collection is a good example: contrary to the case of prisons, it is unlikely that a cost reduction in the qualification of workers will affect significantly the quality of the service. It follows that contracting-out is more appropriate in this case.

Another characteristic of public services is the need for continuity. This gives an important power to a private contractor. This impact is increased by the fact that the nature of public service is often very sensitive. For some services (*e.g.* health), the consequences of an interruption of the delivery could have dramatic consequences. This makes the use of sanctions less likely, and hence decreases the credibility of threats.

In addition, the fact that contracts regarding the provision of public services are usually long-term contracts generate a need for adaptability, which in turn makes it impossible (and inefficient) to write rigid complete contracts. However, this need for flexibility also generates higher contractual risks (Athias, 2009; Athias, 2013b).

Finally, Williamson (1999a) develops the concept of probity to tackle the issue of sovereign tasks. Indeed, contrary to Wilson (1989), who considers that some tasks should be performed by the public sector, “[*not because*] the Government is cheaper or more efficient, but because it alone embodies the public authority”, Williamson shows that the rationale for the government to fulfil these tasks also relies on efficiency considerations. To do this, he uses a transaction-cost approach to explain why public procurement is the best way to pursue sovereign tasks. He illustrates this approach



with the case of Foreign affairs. For Williamson, the main element that created transaction costs in this case is the need for *probity*. Albeit probity is important in all kinds of transactions, it becomes particularly crucial in the case of Foreign affairs. Indeed, the consequences of a lack of probity in the fulfilling of these tasks would be particularly severe. For this reason, no pecuniary penalty would be sufficient to mitigate the risk of a lack of probity (*e.g.* inexcusable incompetence or betrayal). Hence, contracting-out for such tasks would lead to transaction costs so huge that public procurement is the only efficient way to provide these services.

In another vein, Hart et al. (1997) adapt the property rights framework to public services. They show that, when the quality is noncontractible, the private providers tend to over-reduce the costs, since they do not take into account the fact that reducing the costs leads to lowering the quality.

## 1.6 Empirical analysis of the *make-or-buy* decision of public authorities

We have seen above that the Transaction-Cost theory was, among the three theories of the firm, the one which was best suited for an empirical analysis of the *make-or-buy* decision of firms. For the same reasons, the TCT is also the most appropriate for an empirical analysis of the *make-or-buy* decision of public authorities. For these reasons, the largest part of the empirical literature considers either TCT determinants and/or Public choice determinants.

### 1.6.1 Transaction Cost Determinants and Efficiency Considerations

Williamson (1976) aims to study the consequences of franchise bidding as a means for providing a good that has characteristics of a natural monopoly. Studying the supply of cable television services (CATV) in the years 1970's, he shows that the recourse to franchise bidding to provide these services is highly problematic, insofar these services have characteristics (complexity of the service, strong uncertainty on the future demand, as well as on the future evolutions of technology) that are expected to generate high transaction costs. In the particular case of the contract for the provision of CATV services in the city of Oakland, California, the city faced a strongly opportunistic behaviour of the private firm that won the bid, and had to accept to renegotiate several points of the contract. Whereas the study of Williamson considered the ex-post consequences of transaction costs on contracts for the provision of public services, the first empirical study to apply a TCT approach to the (*ex-ante*) *determinants* of the *make-or-buy* decision of public authorities is that of Poudet (1996), who paid attention to specific assets and contracting difficulty (task difficulty, quality assessment). Their identification strategy consisted in regressing (for 10 services in 88 U.S. local governments) the share of the service that is privatized as a function of explanatory variables measuring asset specificity, contracting difficulty,

and uncertainty<sup>9</sup> as well as institutional variables (municipality control variables as the share of unionised employees, the fact that local managers are professionals and the fact that the municipality is member of a Conference of Municipalities), plus a set of control variables. Pouder's results show significant effects in line with the TCT regarding specific assets. The results regarding contracting difficulty are for their part not conclusive. Furthermore, this study mixes up specific human capital with high skills (which encompass both general and specific human capital), and physical specific assets with specialized equipment (which might be redeployed, contrary to specific assets). Finally, the use of OLS regression with a percentage — and thus truncated — dependent variable may provide biased results.

In a study based on a sample of 64 services in 1449 U.S. cities, Brown and Potoski (2003) use a multinomial-logit approach to explain the determinants of the choice between internal production and four possible modes of contracting (joint contracting, contract with other Governments, contract with private firms and contract with non-profits). As in Pouder's study, asset specificity and contracting difficulty (here proxied by service measurability) are measured using survey data: 75 randomly selected U.S. mayors and city managers had to evaluate, for each of the 64 considered services, the levels of asset specificity and service measurability (on a Likert-scale), after having read a short description of these two concepts. Like Pouder, Brown and Potoski found a negative relationship between the asset specificity related to a given service and the propensity of the cities to contract out with private firms the provision of the service in question. Moreover, they show that higher difficulties in measuring the quality of a service fosters a production by the public sector through an increase in the propensity to stipulate contracts with other governments.

Ménard and Saussier (2000) study the contractual arrangements made in 2109 Water Supplying Units (WSU) in France between 1993 and 1995, covering more than 70 percent of the total population. This study does not only aim to distinguish make and buy, but also to distinguish between types of contractual arrangements that give more or less power to the private sector, namely *lease contracts* (in which a private operator operates a publicly owned infrastructure and bears the operation risks, whereas the public authority still bears the financial risks) and *concessions* (in which the operator realizes the investments, and hence bears both risks). Some important features made the conditions of the delivery very different from one WSU to another. First, some WSUs had underground water, whereas the other had surface water. Secondly, the quality of the water strongly varied from one WSU to another. Underground water as well as bad quality water generate needs for specific assets. Whereas it was expected that bad quality sources should lead to less contracting-out

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<sup>9</sup>These variables have been constructed using a questionnaire sent to a panel of 19 respondents (local government managers, faculty members, management PhD students, and experts on local government). Asset specificity has been captured by four Likert-scale variables: specified human skills, specialized equipment, supplier competition, and supplier availability. Uncertainty has been captured by three Likert-scale variables: task difficulty (difficulty to describe and specify the task), quality assessment (difficulty for the local manager to define the quality of performance), and knowledge of service (knowledge and experience of the local manager about what is required to perform each service).

(due to higher asset specificity), Ménard and Saussier observe on the contrary that bad sources lead to resort to contracting forms that give more power to the private sector. They explain this result by the fact that local jurisdictions have not the required know-how to manage such complex cases. The efficiency gains hence more than compensated the transaction costs. The fact that a source is underground has for its part no impact.

In their study of municipal water services in France, Chong, Saussier and Silverman (2015) show for their part that the threat of contracting back-in the services — that is, not renewing the contract at its end — allows larger municipalities (the most attractive clients) to avoid opportunistic behaviours (excessive prices) from the franchisees. This partially explains why private provision is more expensive than public provision, and why this differential is larger in municipalities with less than 10'000 inhabitants.

Finally, in a study on the provision of water services in more than 5'000 French municipalities, Chong, Huet, Saussier and Steiner (2006) show that the characteristics of these services (weak competition for the field, possible collusion between operators, possible renegotiation, corruption) lead the prices of provision to be systematically higher in the case of PPPs than with in-house provision.

## 1.6.2 Public Choice Determinants

In a study based on 12 services in U.S. counties, López-de-Silanes et al. (1997) focused on the so-called *Clean Government Laws* (purchasing standards, merit system, prohibition of political activities for civil servants), labour market laws, budget constraints, as well as ideological issues (fraction of county votes for Republican governor). Using a probit regression approach (private contracting against in-house provision) and a multinomial-logit regression (private contracting and no provision against in-house provision), they find that clean government laws foster contracting out of public services. However, they acknowledge that these results are not sufficient to conclude that clean government laws actually act as a deterrent to political patronage and cronyism. The positive correlation between clean government laws and the propensity to contract-out may also be explained by the fact that these laws in fact increase the cost of the public procurement, making it less competitive against private procurement.

In their study of the delivery of water services in 734 municipalities in Andalusia (Spain), Picazo-Tadeo, González-Gómez, Wanden-Berghe and Ruiz-Villaverde (2012) aim for their part to refine the analysis of ideological motivations, firstly in taking into account the political variables when the decision of contracting-out was taken, instead of when the study was run, secondly in taking into account not only the political party which was in power in the municipalities, but also the fact that this party was in majority or in minority. In addition, they observe the effects of a misalignment between the political parties in power in the municipality and in the provincial governments, that is, if the right parties were in power in the municipality and the left parties were in power in the provincial government, and vice-versa. They also consider political cycles. This study shows that municipalities governed by center parties (center-right or center-left) are more prone to contract-out than municipalities gov-

erned by right-wing and left-wing parties. This result suggests that the policies of center-right and center-left parties converge for electoral motives, that is, to be able to control the center of the political chessboard. This impact does not depend on whether the governing party has the majority or not. They also show that political cycles matter: they observe that the probability of contracting-out is bigger in the second half of the term of office, meaning that the process of contracting-out is mostly initiated during the first half of the term. This study however lacks from controlling of the municipal characteristics. As they consider only one service (water delivery), it would have been useful to take into account technical and geographical parameters that affect the water distribution, in order to capture the complexity of the task of delivering water in a particular municipality. These technical determinants may bias the analysis of political determinants: supposing that in a particular region, the geographical constraints make the delivery of water particularly complex, and that at the same time most municipalities of the same region vote for the same party (which is something quite frequent), the impact of the omitted geographical constraints may be spuriously captured by the political variable, hence biasing the results.

In their meta-analysis of 32 studies on local government choices for the provision of public services, Bel and Fageda (2009) note for their part that, in small municipalities, direct interactions between elected officials and the citizens have a bigger impact than ideology *per se* and conclude that there is no evidence for a systematic impact of ideology on privatization decisions at the local level. They show that the impact of ideology is more important in bigger municipalities. In the Swiss case that interests us, these elements are important, as a large fraction of local executive members are not members of any political party, which means that the argument of direct interactions between the officials and the citizens will have a great importance, which means that ideological factors will be expected to have very few impact in the Swiss case. Finally, Bel and Fageda are rather critical about the empirical strategy used by most studies, as most studies consider the same geographical area (among the 32 studies considered, 24 concerned the U.S.) at the same period (the years 1980s and 1990s). These studies hence lack of external validity.

### **1.6.3 Levin and Tadelis (2010), a Comprehensive Study of Transaction-Cost and Public Choice Determinants**

Whereas Brown and Potoski (2003) focused their analysis of the *make-or-buy* decision of public authorities on efficiency considerations, mainly based on the transaction cost theory, and López-de-Silanes et al. (1997) and Picazo-Tadeo et al. (2012) focused on political considerations, Levin and Tadelis (2010) is the first empirical study on the *make-or-buy* decision of public authorities to consider both dimensions.

In order to sketch the hypotheses that will be tested in their empirical study, Levin and Tadelis construct a theoretical model. The basic framework of this model is that of a principal (city administrator) who delegated to an agent the delivery of one unit of a public service. If the principal care about the quality of the service  $q$  and the

costs of provision  $k$ , the Principal's net benefit will be defined as  $V(q, s) - k$ , where  $s$  is the principal's sensitivity to the quality. The principal's benefit increases with the quantity  $V_q(q, s)|_0$ , the marginal benefit is decreasing in the quantity  $(V_{qq}(q, s)|_0)$ , and a higher sensitivity increases the impact of quality  $(V_{qs}(q, s)|_0)$ . The quality is given by  $q = (\rho + e)t$  where  $\rho > 0$  is the baseline productivity,  $e \geq 0$  is the agent's effort intensity, and  $t \geq 0$  is the time spent by the agent on his job. The agent has an endowment of  $T$  units of time, which can be spent on working (without effort) on the labour market for a wage  $r$  per hour. He also receives a fixed wage  $w$  from the principal. The agent's utility is:  $w + (T - t)r - c(e)t$ .

A contract can contain 3 variables: a minimum amount of time  $\hat{t}$  that must be spent on job, a minimum quality  $\hat{q}$ , and a wage  $\hat{w}$  that is paid only if the time and quality standards are fulfilled, that is, if  $t \geq \hat{t}$  and  $q \geq \hat{q}$ .

The authors make the assumption that there are transaction costs  $d(\hat{q}, m)$ , to implement  $\hat{q}$ , with  $m$  capturing the contracting difficulty, there are no transaction cost if no standard is specified ( $d(0, m) = 0$ ). The transaction costs increase in  $m$  ( $d_m > 0$ ) and in  $\hat{q}$ . By contrast, the implementation of  $\hat{t}$  generates *almost* negligible transaction costs.

The authors show that an optimal contract either specifies the quality standard or a time requirement, but not both, and that for any quality level provided, the payment to the agent in an employment contract (time constraint) is higher than in a performance contract (quality standard).

Based on these two lemmas, Levin and Tadelis show that: (1) if contracting difficulty  $m$  increases, the principal will be more likely to use an employment contract (*make*); (2) if in addition the marginal cost of increasing the is positive then an increase in the sensitivity to the quality  $s$  will make the principal more likely to use an employment contract. These propositions are tested in the empirical part of their study.

This empirical analysis is based on a cross-section of 64 services 1,043 U.S. cities. As the dependent variable, three possible modes of provision are considered: in-house provision (the service is provided by public employees), private contracting (the service is provided by one or several firms), and public contracting (contracting with another public authority).

The first important explanatory variable considered by Levin and Tadelis (2010) is *Contracting difficulty*. Based on a survey of 23 city managers, this variable combines three dimensions: the difficulty of performance measurement, the need for flexibility (i.e. the necessity of future renegotiations), and the difficulty in replacing contractors (which increases the potential for a hold-up by an opportunistic contractor). In line with the transaction-cost theory, cities are expected to be less likely to contract privately services for which it is harder to specify, enforce, or adjust performance standards, i.e. services whose contracting creates high transaction costs. As small cities are expected to be less efficient in a traditional in-house procurement (due to economies of scale), it follows that small cities are expected to be more prone to contract with other public authorities. However, as they have a lower access to the

market, they also are expected to contract *less* with private authorities. These two reasons also lead the authors to assume that small cities are less responsive to contracting difficulties.

This paper also considers the sensitivity of the residents to the quality of the services, assuming that cities will be less likely to contract for services when the residents are very sensitive to their quality. This hypothesis relies on the assumption (in line with the theoretical model) that contracting necessarily lowers the quality.

The form of government is also expected to be a determinant of the *make-or-buy* decision. Indeed, cities run by an elected mayor are expected to be less likely to contract with the private sector than cities run by appointed managers. Indeed, elected mayors are expected to be more prone to keep the provision inside the administration in order to increase their ability to capture a rent. Similarly, cities run by an elected mayor are expected to react less strongly to differences in contracting difficulty.

Finally, younger cities (cities formed after 1950) and cities with a high indebtedness are expected to be more likely to privatize. The former because they have a less developed political infrastructure and less public union influence, the latter because they have more incentives to reduce the costs (provided that an assumption of the theoretical model of Levin and Tadelis is that contracting reduces the costs).

In addition, Levin and Tadelis also analyse the impact of the *Clean Government Laws* that already had been considered by López-de-Silanes et al. (1997), that is, purchasing standards, merit system, prohibition of political activities for civil servants), labour market laws, budget constraints, and ideological issues (fraction of county votes for Republican governor).

Using a multinomial logit model, Levin and Tadelis (2010) confirm that efficiency considerations drive the *make-or-buy* decision. In particular, contracting difficulties lead to less use of the private sector, and this effect is stronger for large cities. Contracting difficulties also lead to more use of public contracting: a one standard deviation increase in contracting difficulty leads to a decrease of about 40 percent of private contracting. Hence, public contracting acts as a substitute for private contracting when transaction costs are high. In addition, consistently with the theoretical expectations, a one standard deviation decrease of the sensitivity of the residents to the quality of the services leads to about one third less involvement of the private sector. Efficiency considerations also appear in the fact that large cities have a bigger propensity to contract with the private sector (due to a bigger experience) and a smaller propensity to contract with the public sector (as they have less incentives to use such contracts to take profit from economies of scale).

By contrast, the conclusions regarding political variables and clean government laws are quite mixed. If a merit system for hiring public employees as well as a prohibition of strike — two factors that are expected to increase the efficiency of in-house provision — lead to less private contracting, the strength of debt limits as well as the existence of financial audit laws exhibit no significant impact on the choice of a mode of provision. The negative impact of a merit system contradicts the previous results of López-de-Silanes et al.'s (1997) study. This may be explained by the fact

that the the merit system improves the efficiency of the in-house provision, and that this effect exceeds the fact that the merit system limits the ability of the public officials to use in-house provision as a mean to offer jobs to relatives or political supporters (cronyism).

Regarding ideological issues, whereas López-de-Silanes et al. (1997) found that the voting results obtained in a county by the Republican candidate at the last gubernatorial election is significantly correlated with the propensity of this county to contract out services, Levin and Tadelis (2010) find for their part no significant relationship between the make or buy decision in a city and the voting results in its county.

## 1.7 Conclusion

The goal of this chapter was to provide the theoretical framework for the *make-or-buy* decision, which will be used in the rest of the thesis. In presenting the different contractual theories (Incentive Theory, Incomplete Contracts Theory, and Transaction Cost Theory), it aimed to explain the differences between *make* and *buy*, and hence to determine which organizational choices should be chosen in which cases.

We have shown that, whereas the Incentive Theory and the Incomplete Contract Theory are important in the context of the *make-or-buy* in allowing to determine the optimal shape of the contractual relationship in the case of the *buy*, the Incentive theory does not provide an answer to the question of *make-or-buy*, and the Incomplete contract theory is essentially a theoretical approach. By contrast, the Transaction Cost Theory provides both a theoretical framework and the empirical tools that allow to answer to this question.

We also highlight that the *make-or-buy* question for public services is not only influenced by the transaction costs, but also by specific features of the public sector (lack of know-how, bureaucracy, limited ability to manage the risks), as well as characteristics of public deciders (ideology, rent-seeking, political agenda), and finally specificities of public services (complexity, need for continuity and adaptability).

Finally, we presented some of the most important recent empirical contributions to the *make-or-buy* literature. We show that this empirical literature corroborates to a large extent the efficiency predictions of the TCT. The evidence on public choice and political considerations is for its part quite mixed.

## Chapter 2

# Evidence from Swiss Municipalities

In the previous chapter, we have shown that the theoretical and empirical literature has mostly considered technical dimensions to explain government *make-or-buy* decisions.

As we have shown above (Section 1.6), there is only a very scarce empirical literature on the determinants of the *make-or-buy* decision for public services. Furthermore, to the best of our knowledge, no empirical study of the organizational choices has been conducted yet in the context of Swiss public authorities. The first goal of this chapter is hence to measure to what extent the predictions of the transaction-cost theory are verified in the Swiss case, but most importantly to identify specific features of the Swiss context that may interfere in the *make-or-buy* decision. To do this, we constructed a database of 22 services in 399 Swiss municipalities, in order to pursue an analysis *à la Levin and Tadelis (2010)* of the organizational choice for local public services in Switzerland.

However, the study mentioned above does not completely control for the unobserved individual heterogeneity; in particular, the cultural dimension. It is not an issue if this cultural dimension is constant across municipalities within a country, but we could think that it might vary across municipalities within a country that is multicultural, for instance multilingual. Language is an important vector of culture, as it captures the vertical and horizontal transmission of values Bisin and Verdier (2000; 2001). The vertical channel to the extent that the native language to which we are exposed during childhood and adolescence is likely to be an important predictor of our values during adulthood. The horizontal channel in the sense that language



is central to any type of social interaction. People sharing a common language are more likely to form a social network, and then, to share common values and common cultural traits.

The second goal of this chapter is hence to provide insights into this issue. We use the different languages in Switzerland to capture heterogeneity in terms of culture at the municipal level. However, as most policies in Switzerland are set at the state (rather than the federal) level, we have to adopt a within-state estimation strategy (state fixed effects). All states but three are monolingual; it is hence not suitable to include a language variable together with state fixed effects. Thus, our approach to the question consists in two steps: First, we run standard estimations to explain *make-or-buy* municipal decisions for the provision of their services, combined with a within-state estimation strategy. Second, using the predicted value of the latent variable of the first-step logit model, we run estimations to explain the mispredictions of this standard model, including a language variable.

The results show that the language systematically explains the mispredicted choices in the particular case of public provision: while the predicted outcome is private provision, French-speaking municipalities are 33 percent more likely to choose public provision than German-speaking municipalities. Interestingly enough, the language does not explain the mispredicted choices in the case of private provision. Thus, we highlight the necessity both to make the standard empirical model for government *make-or-buy* decisions more flexible so as to account for the cultural dimension, and to provide theoretical foundation for this cultural impact. This is what we do in the second part of this thesis.

The remainder of this chapter is structured as follows. We shall first shed light on some specific features of the Swiss context, in particular in terms of territorial structures and local politics. In Section 2.2, we shall describe our data. We shall then turn to our empirical analysis, which will be divided in two steps. First, in Section 2.3, we build up on the methodology of Levin and Tadelis (2010) to run an analysis of the technical determinants of the organizational choices of 399 Swiss municipalities for the provision of 22 public services. We then pursue in Section 2.4 an analysis of mispredicted outcomes in order to identify the presence of a cultural bias in the results of the first step. The last section (2.5) concludes the first part of the thesis and opens the door for the analysis pursued in the second part.

## 2.1 Particularities of the Swiss context

### 2.1.1 Territorial structures

Switzerland is composed of 26 Cantons, divided in 184 districts that are further divided in 2584 municipalities (in 2010). Compared to other European countries, Switzerland is one of the countries where the municipalities are amongst the smallest, with a median size of 1'152 inhabitants (Fig. 2.1). 26.7 percent of municipalities have less than 500 inhabitants and only 10 municipalities have more than 50'000 inhabi-

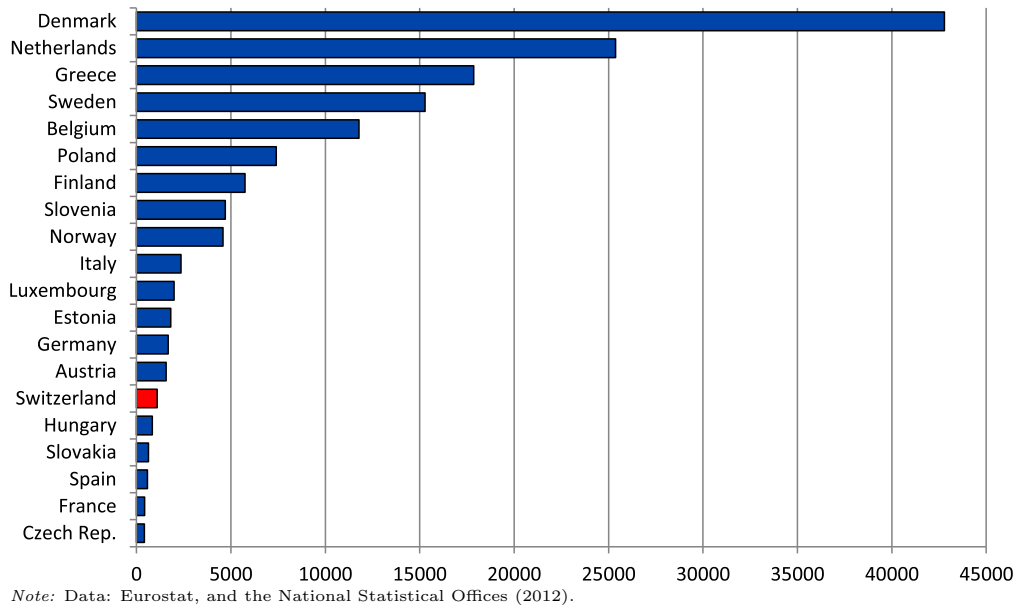


Figure 2.1: Median size of municipalities in European Countries

tants (Table 2.1)<sup>1</sup>. The smallest municipality (Corippo TI) has only 15 inhabitants, whereas the biggest, Zurich, has about 370'000 inhabitants.

Table 2.1: Size of the Swiss municipalities

Population	Municipalities				Inhabitants			
	Number	Cum. number	Percentage	Cum. percentage	Number	Cum. number	Percentage	Cum. percentage
0-100	82	82	3.17%	3.17%	5'163	5'163	0.07%	0.07%
101-200	143	225	5.53%	8.71%	21'305	26'468	0.27%	0.34%
201-500	466	691	18.03%	26.74%	160'631	187'099	2.04%	2.38%
501-1'000	504	1'195	19.50%	46.25%	374'739	561'838	4.77%	7.14%
1'001-5'000	1'057	2'252	40.91%	87.15%	2'468'734	3'030'572	31.39%	38.54%
5'001-10'000	194	2'446	7.51%	94.66%	1'344'092	4'374'664	17.09%	55.63%
10'001-50'000	128	2'574	4.95%	99.61%	2'154'508	6'529'172	27.40%	83.03%
50'001-100'000	4	2'578	0.15%	99.77%	256'668	6'785'840	3.26%	86.29%
> 100'000	6	2'584	0.23%	100.00%	1'078'172	7'864'012	13.71%	100.00%

Data: Swiss Federal Statistical Office (2012)

The territorial structures have remained essentially unchanged since the creation of the Federal State in 1848, with the exception of the creation of the Canton of Jura in 1979 (secession from the Canton of Berne). The number of municipalities has only slightly decreased since 1848, decreasing from 3'203 to 2'584, which means a reduction of less than 20 percent. Furthermore, the main part of this reduction is accounted by a couple of Cantons, especially Thurgau, Fribourg and Tessin. These cantons have pursued incentive policies to foster voluntary merger of municipalities. This voluntary policy contrasts with some countries who achieved ambitious reforms of the territorial structures, leading to a drastic reduction of the number of municipalities. This was

<sup>1</sup>Only 8 municipalities have more than 60'000 inhabitants, which corresponds to the average size of the municipalities in the study of Levin and Tadelis (2010).

the case for example in Belgium who virtually divided the number of its municipalities by four in 1977, as well as Denmark who divided this number by 2.7 in 2007.

In addition to the official municipalities (*commune politique*, *Einwohnergemeinde*, *Politische Gemeinde*), there exists a couple of local jurisdictions with some particular rationale and that independent from the municipalities, especially in the German-speaking Cantons. The *Schulgemeinden* are local jurisdictions in charge of the public primary school. In some Cantons, these school-municipalities raise their own taxes. One other form of municipalities is the so-called *Bürgergemeinde*, which is made up of people having their place of origin in the municipality. These municipalities have their origin in the XIXth Century, when the Constitution gave every Swiss citizen the right to freedom of establishment. The creation of the *Bürgergemeinden* allowed to separate the political rights, given to all Swiss Citizens established in the municipality, and the property of the municipal assets, reserved to the former Citizens of the city. Nowadays, these municipalities are still in charge of managing their own assets and must affect their revenue to public purposes. Finally, some types of municipalities are specific to one canton, namely the so-called *Fürsorge- und Armengemeinden* in Canton of Glaris (assistance to the poor) and the *Zivilgemeinden* in Canton of Zurich (water, gas and electricity distribution) (Steiner, 2002).

## 2.1.2 Autonomy and Importance of Municipalities

The consequence of this particularly small size of Swiss municipalities is that many of them are too small to provide services in-house efficiently and to take profit from economies of scale (Dafflon, 2000a). This creates a trade-off that may lead the municipalities to contract services even when the contractual difficulty is quite high. In practice, this leads the municipalities to collaborate with each other (Local Government Associations, LGA<sup>2</sup>), which can be considered as a particular form of public contracting. This is linked with an institutional framework (cantonal laws) that facilitates the constitution of such associations. Steiner (2001) notes that “*local governments associations are best suited for politically sensitive areas and sovereign tasks*”. He identifies 1359 LGAs — a number that increases year after year.

Municipalities account for about 22 percent of the public expenditure. In 2013, this corresponds to 44.9 billion Swiss Francs (7.1 percent of the GDP). Among the municipal expenditure, personal expenses account for 31.3 percent and the purchase of goods and services for 21.6 percent. 21.7 percent of the expenditure concern the schools, 20.5 the health, and 16.2 percent the social security. 30 percent of the expenditure of municipalities are transfers to other public jurisdictions, in particular inter-municipal equalization. 58 percent of the revenues come from taxes, and 12 percent from transfers. However, even if the municipalities account for a significant part of the total expenditure of the public sector, their autonomy is quite limited, as a large share of the expenditure (in particular social expenditures) are fixed by the State (Dafflon, 2000b)<sup>3</sup>.

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<sup>2</sup>French: *Associations de communes*; German: *Gemeindeverbände*

<sup>3</sup>Nevertheless, even when the State prescribes the provision of a service, the municipality still has

### 2.1.3 Political system at the local level

Four important elements constitute the administrative and political system in Swiss municipalities (Schedler, 2003): the executive body, the legislative organ, the political committees, and finally the administration. The executive power is exerted by an elected government<sup>4</sup>, which is headed by a mayor<sup>5</sup>. The number of members of the local governments depends on the population, but also on the State. As it is the case in the Federal government, the mayor has no extended decision power as compared with his colleagues. On the contrary, he acts as a *primus inter pares*, i.e. he conducts the meetings of the local government, and he takes on the external representation role. An important feature of Swiss municipalities is that it is frequent in municipalities — especially the small and medium ones — that local executive members are not elected as representatives of political parties. According to Geser et al. (2012), 39.6% of the 15'000 Swiss local executive members are not member of any political party, and 4.8 percent are members of political groups that only exist at the local level. The proportion of non partisan executive members reaches 80 percent in municipalities smaller than 500 inhabitants. Only one executive member of every two is member of one of the four biggest national parties<sup>6</sup>. Furthermore, the number of non-partisan executive members sharply increased between 1988 and 2005 (Ladner, 2011). This mitigates the impact of ideological choices, but more importantly this gives the policy makers a bigger independence and thus greatly reduces the risk of conflicts between the general interest and partisan interests. It has also to be noted that less than 2 percent of the members of the executives serve on a full-time basis, and 16.7 percent on a part-time basis, whereas more than 80 percent are non-professionals (Ladner, 2011; Geser et al., 2012).

The legislative power at the local level can take different forms. In some municipalities, the legislative power is exerted by an elected representative body (parliament) whereas in other ones this power is exerted by a full assembly, *i.e.* a more or less frequent meeting of all citizens of the municipality. Depending on the State, the choice of a legislative mode may be left to the municipalities or it may be imposed by the State. Full assemblies are the mode of legislative power in about 80 percent of the municipalities, but the share strongly varies from one State to another. In some cantons (Neuchâtel, Geneva), all municipalities have a local parliament, whereas in seven cantons, only full assemblies exist. In general, elected parliaments tend to exist in cities and in larger municipalities whereas full assemblies are more common in small to medium-sized municipalities. However, even in municipalities with elected parliaments, citizens may vote on some issues, through popular initiatives and referenda: if within a given period, a given number of citizens request it, the authority has to

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the choice of the mode of provision.

<sup>4</sup>The members of the government are elected by the citizens, except in State of Neuchâtel, where they are elected by the local parliament.

<sup>5</sup>The mayor can be elected by the citizens, by the other members of the executive, or by the local parliament, depending from the State.

<sup>6</sup>Swiss People's Party, Social Democratic Party, The Liberals, and Christian Democratic People's Party.

submit a project — *e.g.* the construction of a building, the modification of a municipal law, a tax increase, a.s.o. — to a vote of the People. The scope of these political rights (in particular the deadline, and the number of citizens required to instigate an initiative or a referendum) are decided at the State level.

In addition to the legislative and executive organs, the municipalities have some specialized political committees whose members can be elected either by the executive, the parliament, or the full assembly. These committees have competencies in a particular area, for example in public finance (to give recommendations on the budget, or on a specific investment), in territorial planning (to give recommendations on construction permits or land use plans), on the support for culture (to award grants to cultural actors), a.s.o.

Finally, the last important stakeholder is the administration. Overall, 17 percent of workers in Switzerland worked for the public sector (Confederation, Cantons, Municipalities) in 2010<sup>7</sup>. In 2005, the municipalities represented 38 percent of the employees of the public sector (51 percent for the States, 11 percent for the Confederation) (Koller, 2008). The important number of employees of Local governments is a proof of a high degree of decentralization at the municipal level<sup>8</sup>.

Both the small size of the municipalities, the extended democratic rights, and the weak importance of political parties at the local level provide the citizens with a large power of control on the functioning and the decision making of the municipality. As noted by Schedler (2003): *“On a scale which quantifies direct democratic influence by the citizens of European countries, all three tiers of government in Switzerland would achieve an number-one ranking”*. For Christoffersen (2014): *“In Switzerland, it is common wisdom that politicians and the state have to be constrained by effective institutions in order to prevent them from behaving selfishly. There is widespread consensus that politicians need to be controlled by giving the citizens effective direct democratic instruments and by intense jurisdictional competition. [...] Perhaps, this critical but realistic view of the behaviour of politicians is a consequence of Swiss institutions themselves.”*

#### 2.1.4 Languages in Switzerland

Finally, the last important feature that makes Switzerland interesting for the purpose of this thesis is that Switzerland hosts four languages that corresponds to very different cultures. Indeed, as highlighted by Bisin and Verdier (2000; 2001), language captures the vertical and horizontal transmission of values<sup>9</sup>. The vertical channel to the extent that the native language to which we are exposed during childhood and adolescence is likely to be an important predictor of our values during adulthood. The horizontal

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<sup>7</sup>Source: UNECE Database

<sup>8</sup>However, as seen above, the actual autonomy of the municipalities is more restricted than suggested by these statistics.

<sup>9</sup>Bisin and Verdier (2000) consider three transmission channels for cultural traits: (1) Vertical transmission (by the parents, and more generally the ancestors); (2) Horizontal transmission (homogeneity of values and cultural traits within communities and social groups: countries, regions a.s.o.); (3) Assortative mating (people sharing common values are more prone to interact).

channel in the sense that language is central to any type of social interaction. People sharing a common language are more likely to form a social network, and then, to share common values and common cultural traits. Finally, among the channels of transmission of cultural traits, language is the mostly inherited factor, which allows avoiding any problem of reverse causality. Thus, language is a good proxy for culture.

These cultural areas can be defined very precisely. The borders between the language areas, with the exception of the Romansh area, are quite sharp, as Fig. 2.2 shows. Switzerland was founded in 1291 by the alliance of the three States of Uri, Schwyz and Nidwalden, the so-called *Waldstätten* (literally *forest States*)<sup>10</sup>. The Swiss territory expended through successive enlargements but remains confined to the German-speaking area until several campaigns in the first decade of the 15th century leading to the annexation of some Italian-speaking territories in the actual state of Ticino as well as in the Lombardy and the Piedmont; however, these regions had a status of subject territories. The first territorial expansions in the French-speaking occurred as a result of Burgundian Wars (1474-1477) and the entry of Fribourg in the Confederation (1481). At the federal level, the Constitution of 1848 recognized German, French and Italian as the official national languages of the Swiss Confederation. Romansh is also considered as a national language (since 1938) but it is subject to a special status<sup>11</sup>. In year 2000, 72.5 percent of Swiss citizens were German-speaking, 21.0 percent French, 4.3 percent Italian and 0.6 percent Romansh. Amongst the 26 States (Cantons), 4 are French-speaking<sup>12</sup>, one is Italian-speaking and 17 are German-speaking. Three states are officially bilingual French-German (Bern, Fribourg and Valais) and one is trilingual (the Graubünden state: Romansh, German and Italian). If the French-German border does not correspond to important topological barriers, the Italian-speaking area for its part is clearly separated from the other language areas by mountain chains. Finally, in the trilingual Graubünden state, the language areas correspond mainly to valleys.

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<sup>10</sup>The informations provided in this historical part are taken from Büchi (2001) as well as Ducrey (1983).

<sup>11</sup>“*The official languages of the Confederation shall be German, French and Italian. Romansh shall also be an official language of the Confederation when communicating with persons who speak Romansh.*” (Art. 70§1 of the Federal Constitution)

<sup>12</sup>The Jura state is officially a French-speaking State, even if one of its municipalities is German-speaking.

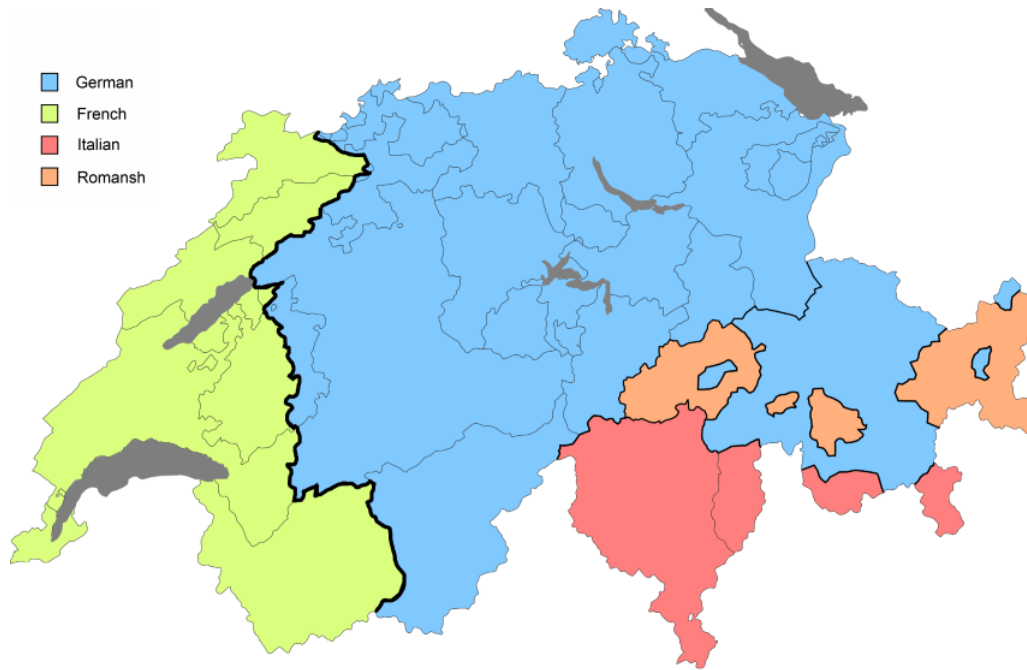


Figure 2.2: Administrative Language, by Municipality

*Source.* Own conception, Data from the Swiss Federal Statistical Office.

### 2.1.5 Corruption

Corruption can be defined as: *“the active or passive misuse of the powers of public officials (appointed or elected) for private financial or other benefits”*. However, *“no precise definition can be found which applies to all forms, types and degrees of corruption or which would be acceptable universally”* (Hough 2013). For the OECD: *“Corruption in the form of patronage (sometimes called favouritism, nepotism, clientelism) consists of the preferential treatment of firms and/or individuals by public officials regarding the compliance with government rules for the allocation of government contracts or transfer payments. The private sector counterpart consists of ‘special favours’ in the form of financial rewards or professional opportunities granted to the public official involved.”*

In most cross-country comparisons, Switzerland appears to be one of the least corrupted countries in the World. In 2016, Switzerland occupied the seventh place of the Corruption Perceptions Index of Transparency International (over 168 countries). Only Denmark, Finland, Sweden, New Zealand, the Netherlands and Norway received better scores. However, despite this very good ranking, corruption in Switzerland is known to be underestimated. Several polls show that hidden corruption, the share of probable cases of corruption that do not result in conviction, is between 97 and 99 percent. These cases take in particular two forms. The first occurs abroad, namely the fact that Swiss firms pay bribes when doing business in some foreign countries. The second case occurs within the country, and takes the form of nepotism, that is,

favouritism (e.g. towards relatives: friends, family, political colleagues) when hiring an employee or when awarding a contract. This form of corruption usually does not involve bribes.

To the best of our knowledge, no study ever highlighted any differences in terms of corruption between the French- and German-speaking areas, and there exist no measure of corruption at the level of Swiss municipalities. Verifying the existence of a *Roestigraben* for corruption would be beyond the scope of this thesis. However, as no evidence suggests the existence of such a bias, and as the factors explaining across-country variations of corruption are not expected to vary across municipalities of a same canton (keeping in particular in mind that religion — the main cultural determinant of corruption<sup>13</sup> — only varies across cantons, but not within cantons), it seems reasonable to assume that corruption affects municipalities on both sides of the language border in a same manner.

Furthermore, an eventual omitted variable bias induced by corruption can be ruled out by our analysis of public spendings. Indeed, if our result was explained by corruption fostering private contracting (for bribes), this logically would mean that corruption is higher in the German area. Hence, we should observe that private provision leads to higher spendings *per capita* in the German area, which is not the case. If on the contrary we expect corruption to foster In-House provision, for example in order to create opportunities of nepotism, we should expect In-House provision to be less efficient in the French-speaking municipalities. Once again, our results show that it is not the case. This allows us to conclude that our results are robust and cannot be explained by a corruption-bias.

## 2.2 Data

Public services can be provided in many different ways. In our survey, we considered ten different modes of provision, that we finally grouped in three categories for the purpose of our study.

**Internal:** First, the service can be provided by public employees, that is, people hired and paid by the public authority, without recourse to third parties. The municipality takes all the decisions and bears the responsibility of the procurement ; the coordination mechanism is hence hierarchy. This mode of traditional procurement fully corresponds to the *make* option in Williamson’s framework.

**Public company:** This can be done in creating an administratively autonomous entity whose ownership remains fully in the hands of the public authority. This entity can be an autonomous public corporation or a company (under public or private law) hold by the public sector. As the public authority keeps a full control over all characteristics of the provision, this case is in practice very similar to traditional procurement. **For this reason, we merged this mode and the Internal mode in a single mode *In-House*.**

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<sup>13</sup>La Porta, López-de-Silanes, Shleifer and Vishny (1997).



**Public contracting:** This way of providing public services consists in stipulating contracts between public entities (local or cantonal jurisdictions, public agencies) for the provision of one or several public services. Public contracting is part of the trend towards New Public Management, since the years 1980's. It can either take the form of a precise purchase contract, or of contracts that describe general objectives rather than giving a precise description of the expected outcome. An example of such a contract in Switzerland is the contract signed in 2008 between the Swiss Confederation and the Swiss Centre of Expertise in the Social Sciences (FORS), whose goals are to produce survey data, as well as to pursue research in empirical social sciences, with focus on survey methodology (Athias, 2013a).

**LGA:** Alternatively, the service can be provided by an *ad-hoc* entity under public law (e.g. a Local Governments Association). Contrary to the public contracting, in which the public authority gives up the most of its decision power, in the case of a LGA the municipality is represented in the executive bodies of the entity, which provides it with some decision and control power. This constitutes the traditional way of contracting with other public authorities in Switzerland, and it is anterior to the emergence of the New Public Management. **Henceafter, we will refer to these two cases (Public contract and LGA) as *Public Contract*.**

All the modes presented so far (traditional procurement, public company, contracting with other public authorities, local governments associations) compose a larger category of *Public provision*.

Contracting-out with the private sector (*Private provision*) can take the form of a service purchase contract, or of a lease contract. In this case, the public authority still keeps the ownership of the infrastructure but allows a private firm to exploit it. In our survey, we distinguished the classical **Private contract** — in which the service is bought to a private firm — from long term arrangements (**PPPs** and **Concessions**) involving a private partner in all stages of the provision (development, building, financing and operation). **Henceafter, PPPs, Concessions and Private provision will form the category *Private contracting*.**

Finally, some options that were present in the survey have been removed from our database. First, due to the particularly small occurrence of this option (46 cases, less than 1 percent of the observations), we do not consider the case in which the service is provided by volunteers or by a NPO. We do not either consider the case where the service is provided by another level of Government (Canton, District) without the municipality intervening in the provision. Indeed, this case does not correspond to a choice of the municipality, but to a unilateral decision of the upper tier. Finally, we also remove the observations in which the municipality does not provide the service, which means that the provision, if any, is made by the private market without the intervention of public authorities. In most cases, this is linked with the absence of demand for this service within the municipality, which makes it non-relevant for our analysis. The choice to ignore the *non-provided* cases is very common in the empirical literature (e.g. Hefetz and Warner (2004) and Levin and Tadelis (2010)).

Table 2.2 shows a synthesis of the organizational choices considered in our survey.

Table 2.2: Modes of provision in the Athias-Wicht survey

<b>In-House</b>	
Internal	The service is provided by public employees, that is, people hired and paid by the public authority, without recourse to third parties. The municipality takes all the decisions and bears the responsibility of the procurement.
Public company	The service is provided by a public agency or a firm hold in majority by the public sector. This entity has its own budget which is independent from the municipality budget. The public authority keeps a full control over all characteristics of the provision.
<b>Public contracting</b>	
Local Governments Association	The service is provided by a LGA, that is, an entity under public law created to provide one or several services. The municipality is represented in the leading organs of the association.
Public contract	The service is bought to another municipality or another public authority (e.g. the Canton).
<b>Private contracting</b>	
Private contract	The service is bought to a private firm. It is paid by the municipality which finances it through taxes or through a redevance.
PPP	The service is provided jointly by the municipality and a private firm. The private partner is involved in all stages of the process (development, building, financing and operation), still under the control of the municipality. It is remunerated by the municipality.
Concession	Identical to PPP, but the private operator is paid directly by the consumers.
<b>Not considered in the empirical analysis</b>	
Other level	The service is provided by another level of government, without any intervention of the municipality.
Not-for-profit	The service is provided by volunteers and/or by NPOs.
Non provided	The municipality does not provide the service, which may be provided by the market.

We collected data on the contracting choices of Swiss municipalities by survey (*Athias-Wicht Municipal Survey*). The municipal level is an interesting case to deal with contracting choices as many municipalities make decisions about service provision in parallel while they provide a wide range of services, from very simple to very complex ones. The survey asks city administrators to identify the mode of provision their municipality had chosen to provide each of the 22 services we were interested in (reported, with descriptive statistics, in Table 2.4). We chose to survey municipal secretaries as they are the best suited to provide us with precise and non ideological information, by contrast with policy makers. In addition, contrary to the vast majority of local policy makers, municipal secretaries are professionals, and are hence best able to provide us with reliable information<sup>14</sup>. For these reasons, surveying municipal secretaries is very common in studies regarding Swiss municipalities (e.g. Steiner (2000), Ladner and Steiner (2005), Ladner (2002), Steiner and Kaiser (2016).). As Kleindienst (1999) notes: *“The municipal secretary holds the leading management position in the municipal administration. In many local authorities this makes him or her the highest level civil servant. The municipal secretary has a key position because he or she works at the interface between politics and administration.”* However, we did not find it necessary to collect personal information on the municipal secretaries. Indeed, it seems us reasonable to consider that personal characteristics of the respondents are not likely to bias the results of our study. To the best of our knowledge, this assumption has implicitly been made so far by all the studies based on municipal secretaries surveys.

We selected the most important services at the local level, ranging from very simple ones (e.g. public works and office cleaning) to more complex ones (e.g. safety, education). These services have been selected after discussions with several specialists and public officials, who identified them as the most relevant at the local level. We collected data on the contracting choices of Swiss municipalities by a web-based survey, that asked city administrators (municipal secretaries) to identify the mode of provision their municipality had chosen to provide each of the 22 services we were interested in. Albeit the survey was Internet-based, it was however also possible to fill in the paper-based questionnaire (see Appendix) instead of using the web survey. No reminders have been sent to the municipalities that did not complete the survey. We obtained responses from 399 municipalities among which 56.4 percent are German-speaking and 43.6 percent are French-speaking<sup>15</sup>. Table 2.3 shows the number of municipalities by cantons in our sample and in all Swiss municipalities. In our sample, 53.6 percent of the services provided are provided in-house, 22.9 are provided through public contracting, and 23.5 percent through contracts with the private sector. We observe an important variation of contracting choices across services, even though the three procuring methods are used in all services.

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<sup>14</sup> *“In contrast to the mayors (who are often part-time politicians), the municipal secretaries have an in-depth knowledge of the community and are less likely to make party-political statements.”* (Steiner, 2000)

<sup>15</sup> In all Swiss municipalities, 68.4 percent are German-speaking and 31.6 percent are French-speaking.

Table 2.3: Number of answers to the Athias-Wicht survey by Canton

Nr	Canton	Own sample	All Swiss Mun.
1	Zürich	21	171
2	Bern / Berne	82	379
3	Luzern	9	83
4	Uri	3	20
5	Schwyz	4	30
6	Obwalden	2	7
7	Nidwalden	2	11
8	Glarus	0	3
9	Zug	2	11
10	Fribourg / Freiburg	41	164
11	Solothurn	10	118
12	Basel-Stadt	0	3
13	Basel-Landschaft	11	86
14	Schaffhausen	4	26
15	Appenzell Ausserrhoden	1	20
16	Appenzell Innerrhoden	0	6
17	St. Gallen	8	77
18	Graubünden / Grigioni / Grischun	6	158
19	Aargau	28	216
20	Thurgau	9	80
21	Ticino	21	147
22	Vaud	71	318
23	Valais / Wallis	19	135
24	Neuchâtel	18	37
25	Genève	14	45
26	Jura	13	57

Table 2.4: Descriptive statistics (Dependent variable)

Service	Private	Std. Dev.	Service	Private	Std. Dev.
Refuse collection	0.6488	0.4780	Animal carcasses removal	0.1524	0.3600
Street lights	0.5069	0.5006	Cemeteries	0.1417	0.3492
Maintenance of water facilities	0.4849	0.5005	Local parks and gardens	0.1349	0.3423
Road maintenance	0.4290	0.4956	Office cleaning	0.1324	0.3397
Public transportation	0.3353	0.4735	Child day-care centres	0.1237	0.3296
Security in public spaces	0.2705	0.4451	Parking control	0.1175	0.3224
Snow cleaning	0.2533	0.4355	Sewage treatment	0.1082	0.3113
Trimming of trees	0.2297	0.4212	School canteen	0.1011	0.3019
Solid waste disposal	0.2237	0.4173	Drinking water distribution	0.0995	0.3001
Road cleaning	0.2180	0.4134	Specialized services in school	0.0599	0.2376
Forests	0.1934	0.3956	Maintenance of school buildings	0.0519	0.2222
<b>All services</b>	<b>0.2364</b>	<b>0.4249</b>			

In this chapter, as well as in chapter 3, we have forgone to pursue a dynamic (panel) analysis of the organizational choices for several reasons. First of all, collecting information on organizational choices in the municipalities for several years would have considerably increase the time necessary to answer to our questionnaire, insofar it would have been made it necessary for the respondents to find information on past choices. This would probably have deterred many municipal secretaries to answer to our survey. Hence, panel data would have been collected at the expense of a lower response rate, but also at the expense of less precise data. In addition, it seems reasonable to consider that the organizational choices exhibit quite few variation over time. In addition, Levin and Tadelis (2010) show that the results of their study is not sensitive to considering different years. For these reasons, we considered that the rather small added value of a panel analysis did not compensate the losses in terms of number of municipalities and quality of the data.

A central prediction of efficiency-based theories is that difficulties in specifying and monitoring performance requirements are likely to reduce private provision. To quantify these difficulties, we surveyed ten city administrators as well as MBA students (to provide some external validity) asking them to assess the 22 services along four contracting dimensions: (1) the difficulty of specifying in the contract the expected service and the quality requirements (*ex-ante* contracting difficulty); (2) the difficulty of observing and measuring the quality of the service once provided (*ex-post* contracting difficulty); (3) the difficulty in replacing contractors due to knowledge or physical specificity; (4) the burden laid by the service on the municipal budget (to capture economies of scale when contracting the service provision). We standardized the answers of each respondent for all questions to have zero mean and unit variance. We then averaged the standardized responses to construct an average response to each question for each service. There was a tight correlation between the survey responses of different city administrators and MBA students, which corroborates our implicit assumption that dimensions of contracting difficulty are largely related to service characteristics rather than being idiosyncratic to a given municipality-service pair. However, the first three contracting dimensions turn out to be so highly correlated across services as to be nearly collinear in multivariate regression analysis. Therefore for the regression analysis we use a principal components approach to identify a single contracting difficulty variable, defining Contracting difficulty as the first principal component of this PCA. This first principal component explains 74 percent of the variation in our four survey variables. Table 2.5 reports in columns 2-5 the individual components of contracting difficulty (standardized means of the answers of 10 city administrators to the Athias-Wicht restricted survey), that is, ex-ante difficulty, ex-post difficulty, physical asset specificity, and knowledge specificity (see Appendix A.2 for more detail), and in column 1 the variable Contracting difficulty (first principal component of columns 2-5). The relative difficulties of contracting for some services are in line with our intuition. For instance, office cleaning and buildings maintenance are two of the easiest services to contract. These services are routine, easy to measure and monitor and do not involve a great deal of specialized equipment or knowledge.

Child day care centres and specialized services in school are two of the most difficult services to contract. For both services, performance is difficult to assess accurately and specialized knowledge can play an important role.

In addition to asking the set of ten city administrators about these four dimensions (which denote *Service* aspects), we included three questions in the survey sent to every city administrator to know the provision mode of services, in order to capture *Service*  $\times$  *Municipality* aspects. We asked them to assess (1) the sensitivity of residents to the quality of each service; (2) the uncertainty surrounding the future requirements of each service; (3) the level of competition for each service if they were considering contracting with a private sector firm the service provision. We assume hence that these three dimensions are idiosyncratic to individual municipality-service pairs. Indeed, the citizens of a large urban municipality have different needs for some services than the citizens of a mountain village or of a small municipality in the countryside. Hence, it is highly likely that their sensitivity is quite different. In the same way, uncertainty also changes from one municipality to another, due to, for instance, the fact that a municipality is experiencing strong demographic growth or increasing urbanization or not. Finally, municipalities of different sizes or in different regions face different transportation infrastructures and different markets, and hence face different degrees of competition. We standardized each variable (Sensitivity, Competition and Uncertainty) to have zero mean and unit variance.

The reason why we ran two different surveys are, first, that we expect that the dimensions of contracting difficulty — difficulty to describe the expected outcome and to monitor its quality, asset specificity — do not vary much across municipalities (contrary to the difficulty to provide the service), *a fortiori* if we control for the most important characteristics of the municipalities (in particular the size, urban, and mountain). Secondly, we expect that the concept of contracting difficulty could be difficult to apprehend for the respondents, hence leading to an important noise in the answers, but also to a lower rate of participation, and this noise could depend on cultural factors. Note that other empirical studies on the make-or-buy decision of public services (Brown and Potoski, 2003; Levin and Tadelis, 2010) also implicitly assume that contracting difficulty do not vary across cities.

For each municipality, we also collected information from official sources on the size of the population<sup>16</sup> (as municipalities may need to be a certain size to produce a given service in-house with any sort of efficiency), the area, the income (proxied by the local per capita yield of the Federal Direct Tax (FDT)), the municipal dependency ratio (as a proxy for investment needs), the municipality passive interests per capita (as a measure of indebtedness).

The repartition of the modes of provision for each service is provided in Fig. 2.3. We can observe that there is an important variation of contracting choices across services, even though the three procuring methods are used in all services. Some services such as maintenance of school buildings are provided by municipal employees in 91

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<sup>16</sup>As the number of large municipalities is quite low, we chose to cluster the size of population in three classes — small ( $\leq 1500$ ), medium (1501-5000), big ( $< 5000$ ) — instead of using it as a continuous variable, so as to avoid heteroscedasticity.

Table 2.5: Contracting difficulty

Service	Difficulty (PCA)	<i>Ex-ante</i> <i>diff.</i>	<i>Ex-post</i> <i>diff.</i>	<i>Physical</i> <i>specificity</i>	<i>Knowledge</i> <i>specificity</i>
Office cleaning	-3.1	-1.7	-1.5	-1.4	-1.1
Maintenance of school buildings	-2.3	-1.1	-0.9	-1.4	-1.0
Snow cleaning	-1.9	-0.9	-1.0	-0.3	-1.0
Refuse collection	-1.7	-0.8	-1.0	0.9	-1.1
Road cleaning	-1.3	-0.3	-0.6	-0.7	-0.9
Cemeteries	-1.2	-0.9	-0.2	-0.4	-0.7
Parking control	-1.2	-0.9	-0.4	-0.7	-0.2
Trimming of trees	-0.6	-0.2	-0.4	-0.6	-0.1
Local parks and gardens	-0.6	-0.5	0.4	-0.5	-0.7
Animal carcasses removal	-0.5	0.1	-0.4	-0.6	-0.2
Solid waste disposal	-0.3	-0.2	-0.3	1.1	-0.6
Road maintenance	-0.2	0.3	-0.3	0.2	-0.4
Forests	0.0	0.2	-0.3	-0.4	0.2
Sewage treatment	0.9	0.2	-0.1	1.6	0.7
Security in public spaces	1.0	1.6	0.1	-1.3	0.4
Maintenance of water facilities	1.1	-0.2	0.9	0.7	0.8
Street lights	1.1	0.5	0.3	1.2	0.4
Drinking water distribution	1.4	0.5	0.4	1.4	0.6
School canteen	1.5	0.3	1.1	0.6	0.6
Public transportation	2.3	1.2	0.8	1.4	0.9
Specialized services in school	2.5	1.0	1.2	-0.6	1.9
Child day-care centres	3.4	1.6	2.3	-0.3	1.6

Columns 2-5 report the individual components of contracting difficulty (standardized means of the answers of 10 city administrators to the Athias-Wicht restricted survey). Column 1 reports the variable Contracting Difficulty, which is the first principal component of the four individual variables. The questions related to columns 2-5 are shown in Appendix A.2.

Table 2.6: Descriptive statistics for our explanatory variables

	Mean	Std. Dev.	Min	Max	Source of the data
<b>Service characteristics</b>					
Contracting Diff.	0	1	-3.129	3.423	Athias Wicht Restricted Survey
Budget Weight	0	1	-1.194	2.475	Athias Wicht Restricted Survey
<b>City × Service characteristics</b>					
Sensitivity	0	1	-2.089	1.308	Athias Wicht Municipal Survey
Uncertainty	0	1	-1.173	2.570	Athias Wicht Municipal Survey
Competition	0	1	-1.282	2.375	Athias Wicht Municipal Survey
<b>City characteristics</b>					
Income [1000 CHF]	1.159	1.407	0.125	12.250	Federal Tax Administration
Dependency Ratio	0.639	0.08	0.222	0.509	Swiss Federal Statistical Office
Mountain	Yes	No			Swiss Federal Statistical Office: “Niveaux géographiques de la Suisse 2012”
	0.417	0.583			
Size	Small	Medium	Big		Swiss Federal Statistical Office: “Niveaux géographiques de la Suisse 2012”
	0.435	0.379	0.185		
Urban	Urban	Rural			Swiss Federal Statistical Office: “Niveaux géographiques de la Suisse 2012”
	0.382	0.618			

percent of the municipalities of our sample. Other services such as refuse collection are privately contracted over 65 percent of the time. Specialized services in school, sewage treatments, forests maintenance and animal carcasses removal services are in a majority of municipalities publicly contracted. The service with the lowest share of municipalities resorting to the private provision is specialized services in school (*e.g.* school psychologists, logopaedics).

Fig. 2.4 shows a comparison of the share of private contracting for each service between our data and Levin and Tadelis (2010). Services in the upper white triangle are more often privately contracted in our Swiss data than in the U.S. data of Levin and Tadelis (2010), whereas services in the gray triangle are more often privately contracted in the U.S. than in Switzerland. This figure shows that 5 services out of the 13 that are present in both studies are more often contracted-out in Switzerland, including the services related to water (sewage treatment, drinking water distribution).

In order to control for the fact that some services are not provided in each city, and to consider that the *make-or-buy* decision is affected by municipality-specific characteristics, we regress a dummy variable *Private*, taking the value 1 if the service is privately contracted on municipality fixed-effects (dummies). Then, we consider the average residual by service as a measure of the frequency of private contracting for each service. The same method is used, *mutatis mutandis*, for Public contracting and In-house provision<sup>17</sup>. Figure 2.5 suggests a very weak impact of contracting difficulty on private contracting. Whereas we might have expected a negative correlation, some services with a high level of contracting difficulty are often contracted-out (*e.g.* public transportation, maintenance of water facilities, street light). Figure 2.6 shows a strong positive correlation between contracting difficulty and public contracting. In this case, we do not observe any significant outlier. Finally, Figure 2.7 shows a strong negative correlation between contracting difficulty and in-house provision. The only outlier is refuse collection, with a low contracting difficulty and a very low frequency of in-house provision. These results which at first glance may appear divergent with the rest of literature, suffer however from the lack of control variables.

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<sup>17</sup>The same methodology is used in Levin and Tadelis (2010).



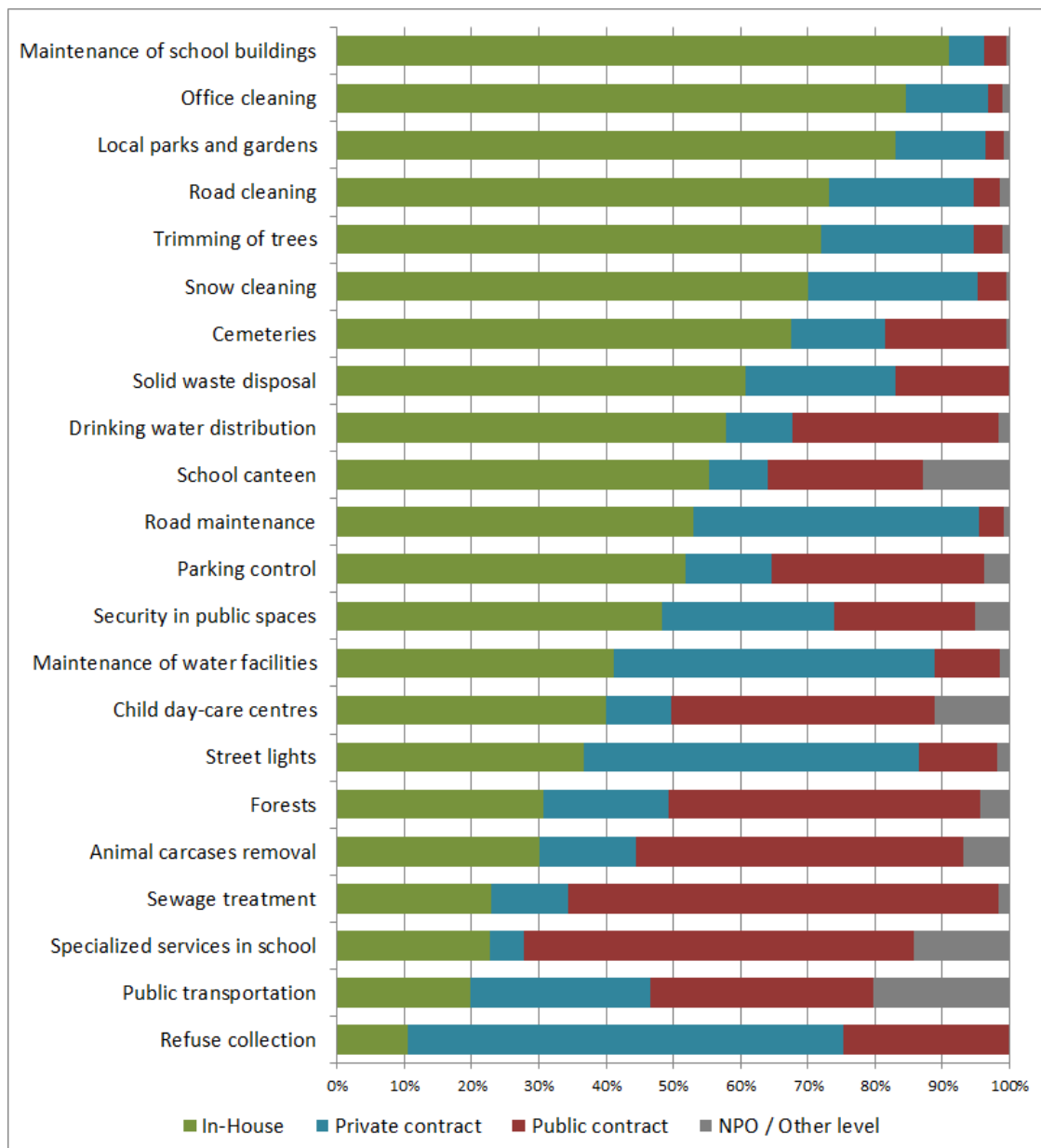


Figure 2.3: Modes of provision by services

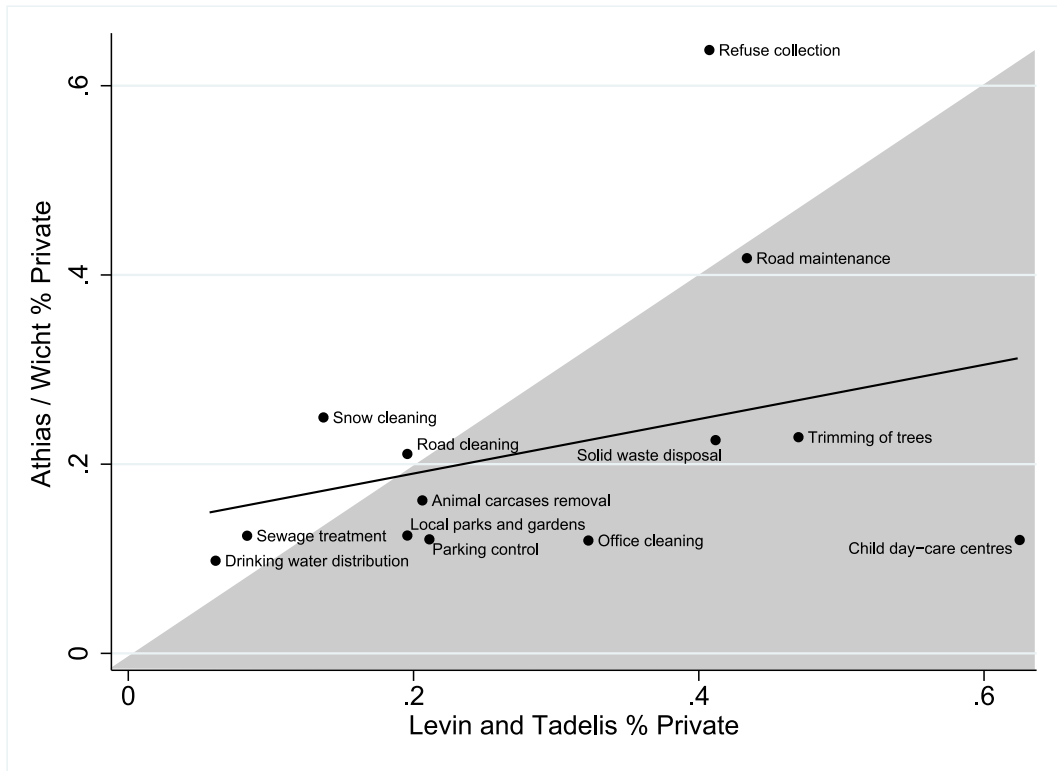


Figure 2.4: Share of private contracting in our data and in Levin and Tadelis (2010)

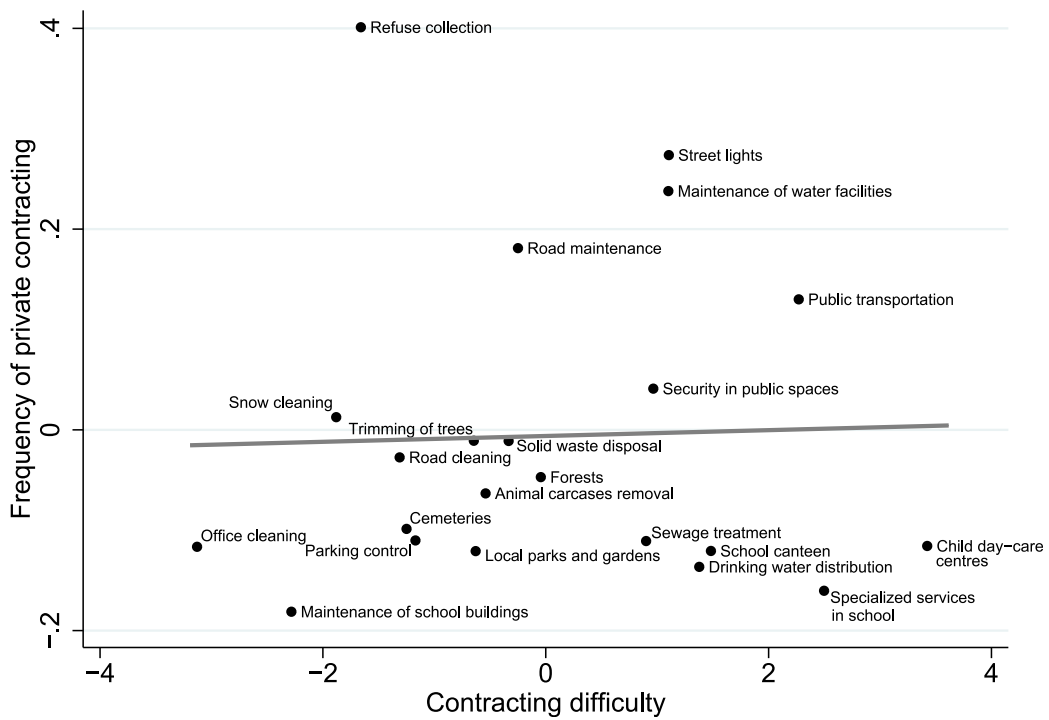


Figure 2.5: Private contracting and contracting difficulty

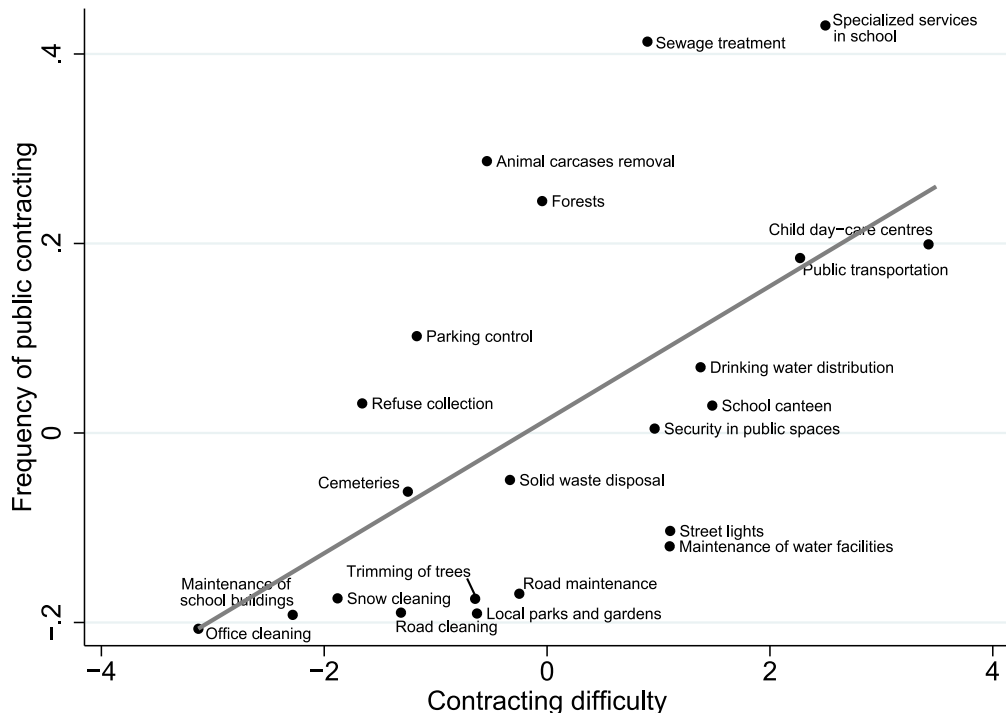


Figure 2.6: Public contracting and contracting difficulty

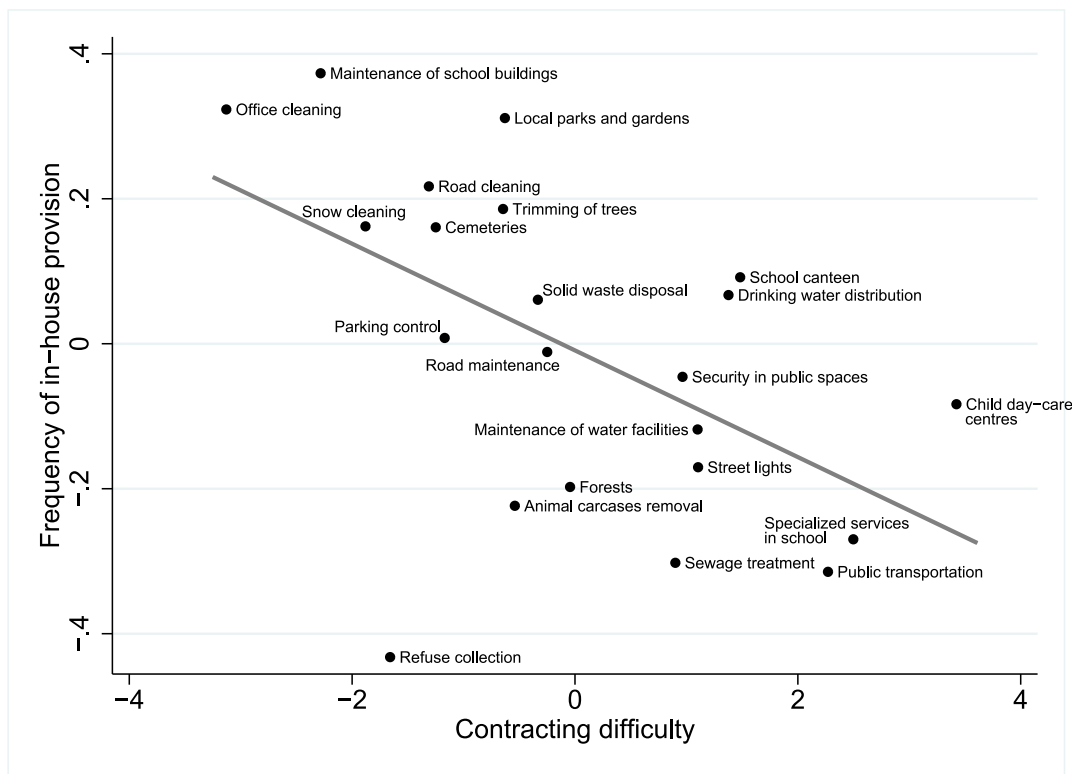


Figure 2.7: In-house provision and contracting difficulty

## 2.3 Determinants of the Organizational Choices of Swiss Municipalities

### 2.3.1 Empirical strategy

Our analysis is based on a multinomial-logit model. We consider the relationship :

$$Mode_{ij}^* = \mathbf{X}_i \cdot \alpha_i + \mathbf{Y}_j \cdot \beta_j + \mathbf{Z}_{ij} \cdot \gamma_{ij} + \mathbf{C}_i \cdot \zeta_i + \epsilon_{ij} \quad (2.1)$$

where  $Mode_{ij}^*$  is an unobserved latent variable of the mode of provision (public contracting, private contracting, or in-house) of the service  $j$  in the municipality  $i$ ,  $\mathbf{X}_i$  is a vector of municipal characteristics (Size, Urban, Mountain, Income, Demographic Dependency Ratio<sup>18</sup>),  $\mathbf{Y}_j$  is a vector of service variables (Contracting difficulty, Budget Weight), and  $\mathbf{Z}_{ij}$  is a vector of parameters that vary both across municipalities and across services (Uncertainty, Sensitivity, Competition). Switzerland is a federal country, in which the States (Cantons) have a rather large autonomy. All tasks resort *a priori* to the Cantons, unless expressly specified in the Federal Constitution<sup>19</sup>. This implies that no power can be transferred from the Cantons to the Federal State without the agreement of both the majority of the people and the majority of the States. It follows that most policies in Switzerland are set at the State (rather than the Federal) level. For this reason, we have to adopt a within-state estimation strategy (vector  $\mathbf{C}_i$  of Canton fixed effects).

This identification strategy has several advantages. First, considering only the bilingual cantons allows us to use Canton fixed effects. Doing this, we are able to compare municipalities facing the same institutional framework. Problems of differential laws and institutions across Cantons can hence be avoided. In addition, restricting the study to municipalities close to the language border allows us to consider that the unobserved heterogeneity in terms of structure of the market is similar on both sides of the border. Due to the small distances, and to the fact that the *Roestigraben* does not correspond to geographical barriers, the municipalities located close to the border have an access to firms located in both language areas without additional costs, and the firms located at the border have the necessary local knowledge to work on both sides of the border<sup>20</sup>. However, this unobserved heterogeneity in terms of geographical market structure might not be similar anymore further from the language border, and we expect more heterogeneous sample further from the border. Finally, it is a common (at least implicit) assumption in the literature (e.g. Brülhart and Jametti (2006)) that the quantity of provided public services, but also their quality, is homogeneous across Swiss municipalities.

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<sup>18</sup>The demographic dependency ratio is computed by dividing the number of inhabitants below 16 or above 65 (“dependents”) by the number of inhabitants between 16 and 65 (“active population”).

<sup>19</sup>Article 3 of the Swiss Constitution: “*The Cantons are sovereign except to the extent that their sovereignty is limited by the Federal Constitution. They exercise all rights that are not vested in the Confederation.*”

<sup>20</sup>For example, many municipalities in the French part of Canton Fribourg contracted-out the waste removal to a firm located at a couple of kilometers of the border, in the German area.

### 2.3.2 Results

Throughout this section, rather than reporting hard-to-interpret coefficients from the multinomial logit model, we shall report the marginal effects on the choice probabilities.

Table 2.8 report the results of multinomial logit regressions considering three modes of provision: in-house provision (base category), public contracting, and private contracting. The first two columns report the results of the model without State fixed effects, whereas we added State dummies in the last two columns.

Our main empirical findings can be summarized as follows. In line with the transaction-cost theory, and consistently with Brown and Potoski (2003) and Levin and Tadelis (2010), we observe that greater contracting difficulty — services for which it is harder to write and administer performance contracts — is associated with more public contracting and less private sector contracting. The impact of contracting difficulty on public contracting might be explained by the fact that public contracting is a substitute for in-house provision for a municipality that wishes to take advantage of economies of scale while retaining more control over provision for services for which the contracting difficulty is high. However, the marginal impact is rather low and much lower than in Levin and Tadelis (2010) : A one standard deviation increase in contracting difficulty is associated with a change in the probability of being contracted with the private sector of 3 percent. Second, we find a striking effect of competition. Municipalities facing a strong competitive private sector market for a given service are significantly more prone to contract it with private firms, which is in line with our expectations. More precisely, a one standard deviation change in the perceived degree of private sector competition is associated with 22 percent increase in the likelihood of private contracting. This is the variable which has the most important effect on the likelihood of private contracting. The fact that we observe a negative impact of competition on public contracting suggests that public contracting acts as a substitute for private contracting when the degree of competition is low.

Third, we observe that services for which future requirements are difficult to anticipate (variable *Uncertainty*) are more often contracted with private sector firms. In-line with the theoretical TCT literature which postulates that asset specificity *and* uncertainty must be met at the same time for transaction costs to occur, we observe that the effects of Contracting difficulty (that includes in particular asset specificity) and Uncertainty reinforce each other (Table 2.7). In addition, this result may suggest that municipalities try to outsource to a third part the risks associated with uncertainty (*e.g* the risk of having an over- or under-capacity in the future). This might however improve productive efficiency if the third part is best able to manage this risk at the lowest cost, *i.e.* is best able to affect the risky outcome and minimise any negative impact of the underlying uncertainty on the project (Debande, 2002; Väililä, 2005). Our results suggest that municipalities think that private firms have more skills to manage the risks happening during the operation phases. This effect is in line with the fact that Swiss municipalities are particularly small (see above in Section 2.1), which makes it particularly difficult for them to manage this risk. The fact that we

also observe a positive impact of Uncertainty on public contracting (and not only on private contracting) tends to confirm this hypothesis. If this interpretation is true, we should observe a bigger impact of Uncertainty for small municipalities and/or a smaller impact for big municipalities. Indeed, considering that bigger municipalities are expected to be best able to manage the demand risk (i.e. to have a better pooling of this risk), the impact of the demand risk should be smaller for big municipalities<sup>21</sup>. In order to verify this hypothesis, we add to our model interaction terms between uncertainty and municipal characteristics, in particular with the size. The results reported in Table 2.9 show that the interaction term *Uncertainty*  $\times$  *Big* has a significant negative impact, meaning that the effect of uncertainty decreases with the size of municipalities. This tends to confirm the validity of our explanation.

Table 2.7: Uncertainty and Contracting difficulty

	Public Contr.	Private Contr.
Uncertainty $\times$ Contr. Diff.	-0.0019 (0.0033)	-0.02*** (0.0039)
Contr. Diff.	0.0598*** (0.0045)	-0.0066 (0.0043)
Uncertainty	0.0107 (0.0069)	0.0321*** (0.0073)
Competition	-0.0758*** (0.0062)	0.0562*** (0.007)
Sensitivity	-0.0159*** (0.0047)	0.0157*** (0.0055)
Big	-0.0648*** (0.015)	-0.0342* (0.0198)
Small	0.042*** (0.0157)	0.0101 (0.0174)
Urban	0.0271* (0.0154)	-0.0279* (0.0165)
Mountain	-0.0205 (0.0134)	-0.0314* (0.0164)
Dep. Ratio	-0.0025*** (0.0008)	0.0023** (0.0011)
Income	-0.0025 (0.006)	0.0186*** (0.0048)
Budget Weight	0.0015 (0.0078)	0.043*** (0.0081)
Canton FE	Yes	Yes
Municipalities	399	399
Observations	7395	7395

*Notes:* Multinomial Logit; In-house provision is the base outcome. Reported coefficients are marginal effects on probability of different modes of service provision. Standard errors are clustered at the municipality level. All regressions include State dummies. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Contrary to Levin and Tadelis (2010) who observed a negative impact of residents' sensitivity on private contracting, we observe a significant positive impact of

<sup>21</sup>On the sharing of the demand risk between a public authority and a private provider, see Athias (2009).

this variable on private contracting, and a significant negative impact on public contracting. Sensitivity can affect the *make-or-buy* decision by several means. The first one is based on the transaction-cost theory: when the sensitivity is high, the risk of opportunism is higher because the private contractor has a larger negotiation power. Indeed, contractual penalties cannot be applied without jeopardizing the continuity of the provision. This channel leads sensitivity to have a negative impact on private contracting.

But the opposite effect can be explained by the fact that Swiss municipalities, due to their small size, lack experience and know-how in order to provide public services in an efficient way, which may lead the policy-makers to expect the private sector to be best able to provide high quality public services. This should foster the buy, particularly when the residents' sensitivity is high, that is, when the quality of the services is the most important. Indeed, the more the quality of the service is important, the more an increase of the quality can compensate the transaction costs, and hence foster the *buy*. Boycko et al. (1996) and López-de-Silanes et al. (1997) have shown that there are private benefits for politicians of keeping service provision inside the government, because this allows them to keep a large control over the provision of the services, which give them more leeway to satisfy personal interest. However, external constraints can force them to contract-out with the private sector in the interest of the municipality and at the expense of their own interest: a high sensitivity of the residents can be such a constraint. This explanation is also coherent with the fact that the positive impact of sensitivity is lower for bigger municipalities, insofar the control exerted by the citizens is usually weaker in larger municipalities. In line with this interpretation, we observe a significantly negative impact of the interaction term Sensitivity  $\times$  Big (Table 2.10).

Regarding control variables, we find a striking pattern in municipality size. We observe that, compared to medium-sized municipalities, large municipalities are significantly less prone to contract both with the private and the public sector. Small municipalities for their part are more prone to contract with other public entities, but exhibit no significant impact towards private contracting. These results are to be explained by the fact that large municipalities have the critical size to provide local public services by themselves whereas medium-sized and small municipalities have to contract to take advantage of economies of scale. Moreover, small municipalities do not always dispose from sufficient means and competencies to manage efficiently certain services.

Table 2.8: Multinomial Logit model

	(1)		(2)	
	Public	Private	Public	Private
Contracting diff.	0.0604*** (0.0045)	-0.0089** (0.0041)	0.0603*** (0.0045)	-0.0084** (0.0042)
Uncertainty	0.011* (0.0066)	0.0326*** (0.0072)	0.0132** (0.0066)	0.032*** (0.0069)
Competition	-0.0759*** (0.0062)	0.0557*** (0.007)	-0.0769*** (0.0062)	0.0539*** (0.007)
Sensitivity	-0.0156*** (0.0046)	0.02*** (0.0054)	-0.0154*** (0.0046)	0.0191*** (0.0053)
Big	-0.065*** (0.015)	-0.0334* (0.0198)	-0.0688*** (0.0151)	-0.033 (0.0205)
Small	0.042*** (0.0156)	0.0101 (0.0173)	0.0475*** (0.0158)	-0.0011 (0.0176)
Urban	0.0272* (0.0154)	-0.0278* (0.0164)	0.0328** (0.0155)	-0.0377** (0.0165)
Mountain	-0.0205 (0.0134)	-0.0304* (0.0164)	-0.0245 (0.0174)	0.0148 (0.0219)
Dependency ratio	-0.0025*** (0.0008)	0.0022** (0.0011)	-0.0019** (0.0009)	0.0013 (0.0011)
Income	-0.0025 (0.006)	0.0181*** (0.0048)	0.0025 (0.0067)	0.0115** (0.0055)
Budget weight	0.0018 (0.0079)	0.0444*** (0.0081)	0.0014 (0.0079)	0.0445*** (0.0081)
Canton FE	No	No	Yes	Yes
Municipalities	399	399	399	399
Observations	7395	7395	7395	7395

*Notes:* Reported coefficients are marginal effects on probability of different modes of service provision. In-house provision is the base outcome. Standard errors are clustered at the municipality level. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .



Table 2.9: Uncertainty and municipal characteristics

	(1)		(2)	
	Public	Private	Public	Private
Uncertainty	0.0014 (0.0097)	0.0407*** (0.0106)	-0.0914** (0.0463)	0.0486 (0.0561)
Uncertainty x Big	0.0083 (0.0169)	-0.0336** (0.0171)	0.0119 (0.0176)	-0.036* (0.0185)
Uncertainty x Small	0.023* (0.0139)	-0.0062 (0.0143)	0.0222 (0.0149)	-0.0074 (0.0148)
Uncertainty x Urban			-0.0023 (0.0142)	0.0055 (0.0148)
Uncertainty x Mountain			0.0018 (0.0131)	0.0302** (0.0145)
Uncertainty x Dep. Ratio			0.0014** (0.0007)	-0.0004 (0.0009)
Uncertainty x Income			0.0023 (0.0048)	0.0016 (0.0039)
Canton FE	Yes	Yes	Yes	Yes
Municipalities	399	399	399	399
Observations	7395	7395	7395	7395

Additional controls: Contracting difficulty, Competition, Sensitivity, Big, Small, Urban, Mountain, Dependency ratio, Income, Budget weight.

*Notes:* Reported coefficients are marginal effects on probability of different modes of service provision. In-house provision is the base outcome. Standard errors are clustered at the municipality level; \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Table 2.10: Sensitivity and municipal characteristics

	(1)		(2)	
	Public	Private	Public	Private
Sensitivity	-0.0211*** (0.0075)	0.0224*** (0.0078)	-0.0347 (0.033)	0.1153*** (0.0441)
Sensitivity x Big	-0.0018 (0.0135)	-0.0306** (0.0133)	0.0071 (0.0137)	-0.0347** (0.0136)
Sensitivity x Small	0.0126 (0.0094)	0.0051 (0.0106)	0.0037 (0.0097)	0.0059 (0.0114)
Sensitivity x Urban			0.0136*** (0.0052)	-0.0053 (0.0056)
Sensitivity x Mountain			0.0026 (0.0091)	0.0018 (0.0102)
Sensitivity x Dep. Ratio			-0.0005 (0.0005)	-0.0011 (0.0007)
Sensitivity x Income			0.0013 (0.0031)	-0.0066*** (0.0025)
Canton FE	Yes	Yes	Yes	Yes
Municipalities	399	399	399	399
Observations	7395	7395	7395	7395

Additional controls: Contracting difficulty, Competition, Uncertainty, Big, Small, Urban, Mountain, Dependency ratio, Income, Budget weight.

*Notes:* Reported coefficients are marginal effects on probability of different modes of service provision. In-house provision is the base outcome. Standard errors are clustered at the municipality level; \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Table 2.11 reports the estimations of a model with fixed effects. In the first regression, we replace all the service variables (including city  $\times$  service variables) by service fixed effects. Model 2 reports the results of an estimation in which the service fixed effects are replaced by *sector* fixed effects. We consider four sectors, based on the official accounting plan of Swiss municipalities, namely Education (4 services: Child day-care centres, School canteen, Specialized services in school, Maintenance of school buildings), Environment (7 services: Refuse collection, Solid waste disposal, Animal carcasses removal, Drinking water distribution, Maintenance of water facilities, Sewage treatment, Cemeteries), Traffic (6 services: Snow cleaning, Road cleaning, Road maintenance, Parking control, Street lights, Public transportation), and Green and Nature (2 services: Local parks and gardens, Trimming of trees). In both cases, the results are in line with the results of the baseline model.

Finally, the results of a Multinomial Logit model in which the city variables are replaced by city fixed effects (estimations reported in Table 2.12) are also totally in line with the results of the baseline model.

Table 2.11: Multinomial Logit with service / sector FE

	(1)		(2)	
	Public Contr.	Private Contr.	Public Contr.	Private Contr.
Big	-0.067*** (0.0152)	-0.0401** (0.0204)	-0.0735*** (0.0146)	-0.0372* (0.0225)
Small	0.0566*** (0.0151)	-0.0017 (0.0178)	0.055*** (0.0164)	-0.0037 (0.0195)
Urban	0.0529*** (0.0147)	-0.0464*** (0.0172)	0.0372** (0.0157)	-0.0415** (0.0187)
Mountain	-0.033* (0.0173)	0.0166 (0.0221)	-0.0311* (0.0181)	0.0116 (0.0252)
Demographic Dep. Ratio	-0.0012 (0.0009)	0.001 (0.0011)	-0.0017* (0.0009)	0.0015 (0.0012)
Income	0.0032 (0.0066)	0.0114* (0.0063)	0.0037 (0.0068)	0.0121* (0.0064)
Municipalities	399	399	399	399
Observations	3795	3795	3795	3795
Additional controls	Service FE		Sector FE	

*Notes:* Multinomial Logit; In-house provision is the base outcome. Reported coefficients are marginal effects on probability of different modes of service provision. Standard errors are clustered at the municipality level. All regressions include State dummies. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Table 2.12: Multinomial Logit with City FE

	Public Contr.	Private Contr.
Contr. Diff.	0.0595*** (0.0046)	-0.0096** (0.0041)
Uncertainty	0.0114* (0.0067)	0.0335*** (0.0072)
Competition	-0.0763*** (0.0063)	0.0559*** (0.007)
Sensitivity	-0.0172*** (0.0047)	0.0205*** (0.0052)
Budget Weight	0.0012 (0.0079)	0.044*** (0.008)
Municipalities	399	399
Observations	7395	7395
Additional controls	City FE	

*Notes:* Multinomial Logit; In-house provision is the base outcome. Reported coefficients are marginal effects on probability of different modes of service provision. All regressions include State dummies. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

### 2.3.3 Robustness checks

To check the robustness of our results, we also run a logit regression, merging the categories *Public contracting* and *In-House provision*, thus directly opposing private and public provision, with an identical specification. In this case, we are able to estimate the model with robust standard errors clustered at both the *municipal* and *service* levels. We also consider two models in which we include respectively service and municipality fixed effects (Columns 2 and 3).

This analysis shows no significant impact of contracting difficulty on contracting, which is due to the fact that contracting difficulty increases public contracting and decreases private contracting. Hence, these two effects cancel each other out when considering contracting in general. A similar pattern can be observed regarding the residents' sensitivity. In addition, in line with the fact that Uncertainty increased both public and private contracting in the Multinomial Logit model, the logit model logically exhibits a significant positive impact of Uncertainty on contracting. Also in line with the results of the Multinomial Logit, we observe that the bigger the municipality is, the less it contracts.

We finally run an ordered logit, considering a qualitative index of contracting, that is, a dependent variable that takes the values 0 for in-house provision, 1 for public contracting and 2 for private contracting (Table 2.14). In other words, we assume that there is an increasing degree of contracting from in-house (the lowest degree of contracting) to private contracting (the highest degree). We observe that the municipalities tend to choose higher degrees of contracting when the contracting difficulty is high. This result is in line with the results of the multinomial logit model, who shows that contracting difficulty increases public contracting, and that this effect is bigger than the negative effect on private contracting. As in the multinomial logit, Sensitivity and Uncertainty are positively correlated with higher degrees of contract-

Table 2.13: Logit model: Contracting vs. In-House

	(1)	(2)
Contr. Diff.	0.0544 (0.0412)	0.055 (0.0417)
Uncertainty	0.0438*** (0.015)	0.0451*** (0.015)
Competition	-0.0175 (0.0204)	-0.0195 (0.0207)
Sensitivity	0.0034 (0.0252)	0.0033 (0.0254)
Big	-0.1024*** (0.0277)	-0.1072*** (0.0282)
Small	0.0526* (0.0307)	0.0467* (0.0266)
Urban	0.0007 (0.0209)	-0.0035 (0.0207)
Mountain	-0.0516** (0.0227)	-0.0109 (0.0262)
Dep. Ratio	-0.0005 (0.0014)	-0.0007 (0.0012)
Income	0.0171*** (0.0063)	0.0142** (0.007)
Budget Weight	0.0432 (0.0671)	0.0424 (0.0676)
Canton FE	No	Yes
Municipalities	399	399
Observations	7395	7395

*Notes:* Logit model. Dependent variable: dummy with value 1 for contracting (public and private) and value 0 for In-House provision. Reported coefficients are marginal effects on probability of contracting (publicly or privately). Standard errors are clustered at the municipality and service levels. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

ing. Services that account for a larger part of the municipal budget are also more prone to contracted at a higher degree. Regarding municipal characteristics, we logically observe that the bigger the municipality, the less the services are contracted. By contrast, municipalities with a higher income choose higher degrees of contracting. This is also in line with the results of the multinomial logit, that showed that income is positively correlated with private contracting, and that there is no significant relationship between income and public contracting.

Table 2.14: Ordered Logit

	(1)	(2)	(3)	(4)
Contracting diff.	0.123*** (0.0181)			0.140*** (0.0206)
Uncertainty	0.159*** (0.0329)			0.157*** (0.0329)
Competition	0.0478 (0.0326)			0.0696** (0.0296)
Sensitivity	0.0546** (0.0233)			0.0727*** (0.0238)
Budget weight	0.164*** (0.0287)			0.181*** (0.0341)
Big	-0.341*** (0.0951)	-0.359*** (0.105)	-0.325*** (0.0946)	
Small	0.147* (0.0785)	0.178** (0.0880)	0.170** (0.0792)	
Urban	-0.0425 (0.0755)	-0.0274 (0.0842)	-0.0287 (0.0759)	
Mountain	-0.166** (0.0731)	-0.246*** (0.0824)	-0.218*** (0.0739)	
Dep. Ratio	0.00216 (0.00440)	0.00640 (0.00497)	0.00426 (0.00448)	
Income	0.0784*** (0.0242)	0.0948*** (0.0272)	0.0803*** (0.0247)	
Additional controls	No	Service FE	Sector FE	City FE
Observations	7,395	7,395	7,395	7,395
Municipalities	399	399	399	399

*Notes:* \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . Ordered Logit. Dependent variable takes the values 0 for in-house provision, 1 for public contracting and 2 for private contracting. Reported coefficients are log odd ratios. Columns 1-3: Robust standard errors are clustered at the municipality level Column 4: Robust standard errors. The sectors considered in column 3 are: Education, Environment, Traffic, Green and Nature. All regressions contain Canton fixed effects.

## 2.4 Unobserved Heterogeneity: Culture and Analysis of Mispredicted Outcomes

The second part of our analysis aims to shed light on the importance of culture on the organizational choices. To do this, we use an original identification strategy to capture the unobserved heterogeneity and to find factors that explain the mispredicted outcomes, that is, observations (service–municipality pairs) for which we observe a public provision whereas the model predicts a private provision (what we shall call henceafter *False Public*), and the observations for which we observe a private provision whereas the model predicts public provision (*False Private*). Analysing the mispredicted outcomes is interesting, as the fact that an outcome is mispredicted suggests a gap between the expectations of the theoretical framework (operationalized in the model) and the results observed in the practice.

Our analysis consists in two steps: first, we run a standard logit model combined with a within-Canton estimation strategy in order to explain *make-or-buy* municipal decisions for the provision of their services. Second, using the predicted value of the latent variable of the first-step logit model, we run estimations to explain the mispredicted outcomes in this standard model, including a language variable.

The use of this methodology based on false public and false private rather than “simply” including a dummy *French* to our baseline model is justified by the fact that, on the one hand, this cultural dummy would be highly multicollinear with the Canton fixed effects, whereas on the other hand a model without Canton fixed effects would not allow to disentangle the effects of culture and the effects of the cantonal institutional framework. Hence, the only way of measuring the impact of culture while considering the cantonal institutional framework is to consider only the municipalities in bilingual cantons, which is what we are going to do in Chapter 3.

### First-step estimation: *make-or-buy* model

In order to make the analysis of mispredictions possible, we will now turn to a binary (logit) model. For the purpose of this study, as our concern is on cultural issues, we restrict our sample to the 377 municipalities in the French- and German-speaking areas.

We consider the relationship :

$$Private_{ij}^* = \mathbf{X}_i \cdot \alpha_i + \mathbf{Y}_j \cdot \beta_j + \mathbf{Z}_{ij} \cdot \gamma_{ij} + \mathbf{C}_i \cdot \zeta_i + \epsilon_{ij} \quad (2.2)$$

where  $Private_{ij}^*$  is an unobserved latent variable of the mode of provision (public or private) of the service  $j$  in the municipality  $i$ ,  $\mathbf{X}_i$  is a vector of municipal characteristics (Size, Urban, Mountain, Income, Dependency Ratio),  $\mathbf{Y}_j$  is a vector of service variables (Contracting difficulty, Budget Weight), and  $\mathbf{Z}_{ij}$  is a vector of parameters that vary both across municipalities and across services (Uncertainty, Sensitivity, Competition). As in the previous section, we adopt a within-state estimation strategy (vector  $\mathbf{C}_i$  of Canton fixed effects) in order to account the fact that all tasks resort *a*

*priori* to the Cantons (see above in Section 2.1). Again, rather than reporting hard-to-interpret coefficients from the logit models, we report the marginal effects on the choice probabilities. The estimations are reported in Table 2.15. These results are in line with those obtained in the previous section with the multinomial-logit approach.

Table 2.15: Determinants of private contracting

	(1)	(2)
Difficulty	-0.0135*** (0.004)	-0.0135 (0.0313)
Uncertainty	0.0258*** (0.0068)	0.0258** (0.0117)
Competition	0.0548*** (0.007)	0.0548*** (0.0158)
Sensitivity	0.0234*** (0.0052)	0.0234 (0.0164)
Big	-0.0355* (0.0194)	-0.0355* (0.0199)
Small	-0.0038 (0.0175)	-0.0038 (0.0158)
Urban	-0.0336** (0.0161)	-0.0336*** (0.0116)
Mountain	0.018 (0.0212)	0.018 (0.0133)
Dep. Ratio	0.0008 (0.0011)	0.0008 (0.0006)
Income	0.0117** (0.0056)	0.0117*** (0.0028)
Budget Weight	0.0397*** (0.0078)	0.0397 (0.0481)
Canton FE	Yes	Yes
Clustered SE	Municipality	Service
Municipalities	377	377
Observations	6992	6992
Pearson $\chi^2$	6963.74	6963.74
Hosmer-Lemeshow p-value	0.4952	0.4952

*Notes:* Logit model. Dependent variable: Private contracting. Reported coefficients are marginal effects on probability of private provision (against in-house provision and public contracting). Standard errors clustered at the municipality level (1st column) and at the service level (2nd column) in parentheses. All regressions include Canton fixed effects (dummies); \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

## Second-step estimation: An analysis of Mispredictions

We want to observe, for each pair municipality–service, the discrepancies between the mode of provision predicted by the model and the actual mode of provision. In order to determine the predicted outcome, we compute the probability of a private outcome of our Logit model. This estimated probability is defined as:

$$\hat{\Pr}(\text{Private} = 1|\mathbf{w}) = \Lambda(\mathbf{w}\hat{\delta}) \quad (2.3)$$



where  $\Lambda$  is the cumulative distribution function of the standard logistic distribution, and  $\mathbf{w}\hat{\delta}$  is the predicted value of the latent variable ( $Private_{ij}^*$ ) for a given set of values  $\mathbf{w}$  of the independent variables.

Then, we attribute the predicted outcome “Private” to the observations for which the probability of the outcome “Private” is greater or equal to a threshold  $\mu$  :

$$\hat{y} = \begin{cases} 1 & \text{if } \hat{\Pr}(\text{Private} = 1|\mathbf{x}) > \mu \\ 0 & \text{if } \hat{\Pr}(\text{Private} = 1|\mathbf{x}) \leq \mu \end{cases} \quad (2.4)$$

The value of  $\mu$  has been fixed in such a manner that the proportion of predicted “Private” corresponds to the proportions of Private actually observed in our data. This analysis shows that 70.1 percent of the observations are aligned (*i.e.* the predicted outcome corresponds to the observed outcome), 14.7 percent are False-Public (“Public” observed and “Private” predicted), and 15.2 percent are False-Private (“Private” observed and “Public” predicted). We observe a significant gap between the French and German-speaking municipalities (Fig. 2.8): whereas the proportion of False-Public is 20.8 percent in the French area, it is only 9.3 percent in the German area ( $p$ -value =  $1.49 \cdot 10^{-42}$ ). The difference in terms of False-Private is somewhat smaller, but still significant, as 16.1 percent of the observations in German-speaking municipalities and 14.1 percent in the French-speaking municipalities are False-Private ( $p$ -value = 0.021).

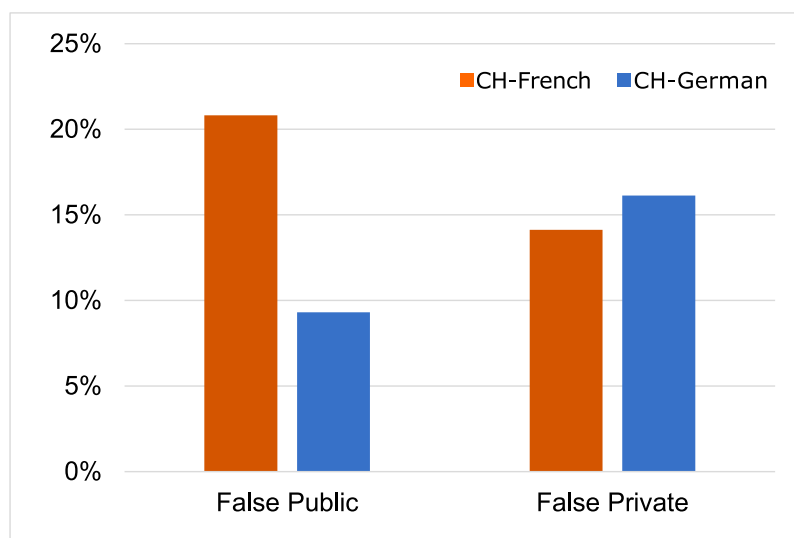


Figure 2.8: Misspecified observations in both language areas

In order to be sure that the language is a driver of mispredictions, we then run Logit regressions of the dummy variables *False Private* and *False Public* on service and municipal variables (the variables used in our previous model plus a dummy variable *FRENCH*). To do this, we split our data into two subsamples, namely one sample with the observations for which the predicted outcome is *Private*, and one sample with the observations for which the predicted outcome is *Public*. We use the former for the regressions regarding False-Public, and the latter for regressions regarding

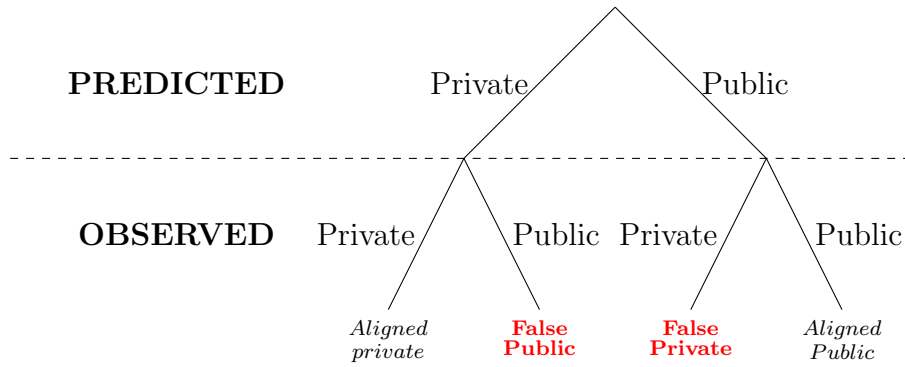


Figure 2.9: Aligned observations, False-Private, and False-Public

False-Private. The reason why we do this is that, when the predicted outcome is *Private*, the only choice for the municipality is between *Aligned-Private* and *False-Public*: *Aligned-Public* and *False-Private* are not possible choices (Fig. 2.9). Hence, as our concern is on misprediction, observations for which the predicted outcome is *Private* are not relevant to explain *False-Private*. Similarly, observations for which the predicted outcome is *Public* are not relevant in the study of *False-Public*. In the subsample of *Private* predicted outcome, 63.5 percent of the observations are False-Public; in the subsample of *Public* predicted outcome, 19.8 percent of the observations are False-Private. These proportions are in line with the true proportions of observed Public and Private in the whole sample.

The regression results are reported in the Table 2.16. As in the first step model, we show the estimations with standard errors clustered at the municipal level (columns 1 and 2) and at the service level (columns 3 and 4). We observe that the language dummy *FRENCH* has a very significant positive impact on False-Public. This result is robust across estimations. More specifically, we find that, while the predicted outcome is *Private*, French-speaking municipalities are 33 percent more likely to provide publicly public services than German-speaking municipalities (recall that on average 63.5 percent of private predicted outcome are False-Public and the estimated probability change is around 21 percentage points). By contrast, we do not observe a robust evidence of an impact of the language on the mispredicted choices in the case of private provision. The fact that the variables *Big*, *Small*, *Urban*, and *Mountain* are dummies, as *FRENCH* is, allows for a direct comparison of the marginal effects: the marginal effect of *FRENCH* is much higher than the marginal effects of *Big*, *Small*, *Urban*, and *Mountain*, which points out that *FRENCH* explains a much larger part of the False-Public misspecifications than these variables.

## 2.5 Conclusion

The goals of this chapter were, first, to observe to what extent the classical predictions of the *make-or-buy* for public services (in terms of efficiency as well as political issues) are verified in the Swiss case, in order to determine to what extent specific features of

Table 2.16: Determinants of False-Private and False-Public

	(1)	(2)	(3)	(4)
	False Private	False Public	False Private	False Public
French	-0.0126 (0.0271)	0.2085** (0.1028)	-0.0126 (0.0292)	0.2085*** (0.0569)
Difficulty	-0.0068 (0.0043)	0.0397*** (0.0116)	-0.0068 (0.0271)	0.0397 (0.0464)
Uncertainty	0.0207*** (0.007)	-0.0482*** (0.017)	0.0207* (0.0113)	-0.0482*** (0.0164)
Competition	0.057*** (0.0078)	-0.0635*** (0.0209)	0.057*** (0.017)	-0.0635** (0.0262)
Sensitivity	0.0238*** (0.0054)	-0.0172 (0.015)	0.0238* (0.0139)	-0.0172 (0.0282)
Big	-0.0348* (0.0182)	0.0723 (0.0453)	-0.0348* (0.0205)	0.0723* (0.0395)
Small	-0.0235 (0.0175)	-0.0758** (0.0335)	-0.0235 (0.0169)	-0.0758** (0.0364)
Urban	-0.0466*** (0.0159)	-0.0159 (0.0412)	-0.0466*** (0.0131)	-0.0159 (0.0409)
Mountain	-0.0036 (0.0187)	-0.1195** (0.0525)	-0.0036 (0.0146)	-0.1195*** (0.0203)
Dep. Ratio	0.0012 (0.0011)	-0.001 (0.0023)	0.0012 (0.0007)	-0.001 (0.0015)
Income	0.0082 (0.0101)	-0.0226*** (0.0077)	0.0082 (0.0052)	-0.0226*** (0.0034)
Budget Weight	0.0328*** (0.0078)	-0.0608** (0.0256)	0.0328 (0.0463)	-0.0608 (0.0611)
Clustered SE	Municipality	Municipality	Service	Service
Observations	5368	1622	5368	1622

Notes: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ ; Logit model. Dependent variables: False private (dummy, cols 1 and 3), False public (dummy, cols 2 and 4). Reported coefficients are marginal effects on the probability of False-Private conditional on a public predicted outcome, and False-Public conditional on a private predicted outcome, respectively.

the Swiss context may interfere in the *make-or-buy* decision, and secondly to capture, for the first time, the impact of culture on organizational choices, using the different languages in Switzerland to capture heterogeneity in terms of culture at the municipal level.

To do this, we built an original, self-constructed database of 22 services in 399 Swiss municipalities.

Regarding the classical determinants of the *make-or-buy* decision, we observe first that, the higher the contracting difficulty, the less the public services are contracted-out to the private sector, and the less it will be contracted-in with other public authorities. Secondly, we observe a significant impact of size on public contracting, namely that big municipalities are less prone to contract-in. By contrast, we do not observe any impact of the size on private contracting. Regarding uncertainty, we observe that a higher level of uncertainty fosters the resort to both the private and the public sectors, and that Uncertainty and Contracting difficulty reinforce each other.

We explain the positive relationship between uncertainty and contracting-out by the fact that Swiss municipalities, due to their small size, are not in a position to manage efficiently the demand risk, which leads them to externalize this risk. Finally, we observe a positive impact of residents' sensitivity on private contracting. We explain this result by the fact that the policy makers expect that the private sector will be best able to provide high quality services, and that sensitivity may act as an external constraint that force the policy-makers to contract-out when necessary, rather than keeping the provision in-house in order to capture a rent.

The main insight of this analysis is then that Swiss municipalities, due to their small size, lack experience and know-how in order to provide public services in an efficient way. In the context of the *make-or-buy* decision, this increases the gap in terms of productive efficiency in favour of private provision, which leads to foster the *buy*.

Hence, the results regarding uncertainty and sensitivity suggest that small municipalities are less sensitive to transaction cost arguments due to a lack of competencies. An important policy implication is hence that an increase of the size of the municipalities would allow to increase their productive efficiency in the delivery of public services. This makes a case for strengthening the policy of incentives aiming to foster mergers of municipality.

The results of the analysis of the mispredictions of the standard empirical model for *make-or-buy* decisions suggest that this standard model might be misspecified due to the omission of the cultural dimension in this decision. This opens the way to further studies in order to make the standard empirical model for government *make-or-buy* decisions more flexible, and to provide theoretical foundation for this cultural impact. This is what is done in the second part of this thesis, in which we shall use the discontinuity at the Swiss language border at identical actual set of policies and institutions to analyze the causal effect of culture on the choice of how public services are provided.

In addition, we observe a significant self-selection in our data, with an over-representation of French-speaking municipalities (43.6 percent, whereas the proportion in all Swiss municipalities is 29 percent) (Table 2.17). This difference vanishes when we restrict our sample to the municipalities of the three bilingual cantons of Berne, Valais, and Fribourg (Table 2.18). Hence, this is an additional argument suggesting that the strategy that we shall develop in the next part of this thesis will allow us to get a more robust evidence.

We can observe that the explanatory power of this model is quite low. Indeed, a pure random assignment of the organizational modes would have lead to a share of 67 percent of aligned observations, whereas our analysis of misalignment shows that our model leads to 70 percent of aligned observations. This represents a further argument that an important determinant lacks in our analysis and that the "classical" determinants of the make-or-buy decision highlighted by the literature are not sufficient to explain the organizational choices in the Swiss context.

Table 2.17: Comparison between our sample and all Swiss municipalities

	All municipalities			Our sample			Difference
	Big	Medium	Small	Big	Medium	Small	
Size	14.6	30.0	55.4	18.3	38.1	43.6	***
French	Yes	No		Yes	No		***
	29.0	71.1		43.6	56.4		
Urban	Urban	Rural		Urban	Rural		0
	42.25	57.75		38.6	61.4		
Mountain	Yes	No		Yes	No		0
	48.24	51.76		44.86	55.14		
	Mean	Std Dev		Mean	Std Dev		
Dep. Ratio	64.04	9.72		64.06	8.21		0
Income	1.05	1.35		1.17	1.40		*

Table 2.18: Comparison between our sample (only bilingual cantons) and all municipalities

	All municipalities			Our sample			Difference
	Big	Medium	Small	Big	Medium	Small	
Size	8.4	27.8	63.8	14.08	38.73	47.18	***
French	Yes	No		Yes	No		0
	35.3	64.8		40.85	59.15		
Urban	Urban	Rural		Urban	Rural		**
	39.18	60.82		30.28	69.72		
Mountain	Yes	No		Yes	No		0
	52.21	47.79		51.41	48.59		
	Mean	Std Dev		Mean	Std Dev		
Dep. Ratio	65.24	0.37		64.80	0.74		0
Income	0.63	0.02		0.69	0.05		0

# A

## Appendices

### A.1 Questions in the municipal survey

<p><b>Mode of Provision</b></p> <p>Please indicate which way your municipality provides each of following services. <i>(22 services, 10 modes)</i></p>
<p><b>Uncertainty</b></p> <p>How difficult is it for the authorities to anticipate what the needs of the citizens will be in the next five years ? <i>(1 = very easy; 2 = rather easy; 3 = moderately difficult; 4 = rather difficult; 5 = very difficult)</i></p>
<p><b>Sensitivity</b></p> <p>How much importance do the citizens of your municipality assign to the quality of each of following services ? <i>(1 = very little importance; 2 = rather little importance; 3 = moderate importance; 4 = rather much importance; 5 = very much importance)</i></p>
<p><b>Competition</b></p> <p>Assuming that your municipality decides to provide the service with a private contract or a concession contract, will there be a large number of competing firms, or on contrary will the choice be very narrow ? <i>(1 = very few competitors; 2 = rather few competitors; 3 = moderate number 4 = rather many competitors; 5 = many competitors)</i></p>

## A.2 Questions in the restricted survey

### **Ex-ante difficulty**

For some services, it is quite easy for the authorities to describe precisely in the contract the expected characteristics of the service or the way the service must be provided. For other services on contrary, such a description is difficult to do, which can lead the contract to be incomplete and the service to be quite different from what was expected by the authorities. In your opinion, to what extent is it difficult for the authorities to stipulate a contract that describes precisely what has to be done ?

*(1 = very easy; 2 = rather easy; 3 = moderately difficult; 4 = rather difficult; 5 = very difficult)*

### **Ex-post difficulty**

To what extent is it difficult for the authorities to observe and to measure the quality of a service provided by an external provider?

*(1 = very easy; 2 = rather easy; 3 = moderately difficult; 4 = rather difficult; 5 = very difficult)*

### **Knowledge specificity**

The production of some services needs specific skills that would be difficult for the employees to use when working for another employer (*e.g.* knowledge about specific equipments or softwares), whereas other services need only more general knowledge. This aspect is independent of the degree of education and depends more on experience or specific training. In what extent does the production of following services need that the employees have skills they would not be able to use if they were employed on other duties.

*(1 = very weak specificity; 2 = rather weak specificity; 3 = moderate specificity; 4 = rather high specificity; 5 = very high specificity)*

### **Physical specificity**

In your opinion, to what extent does the provision of this service need equipment (machines, buildings, softwares a.s.o) that could not be used for other tasks ?

*(1 = very weak specificity; 2 = rather weak specificity; 3 = moderate specificity; 4 = rather high specificity; 5 = very high specificity)*

## A.3 Athias-Wicht survey (French version)



Institut de hautes études en administration publique  
Swiss Graduate School of Public Administration

A l'attention du secrétaire communal

Lausanne, le 1er décembre 2012

Madame, Monsieur,

La Suisse est l'un des pays au monde où les régions (cantons) et les communes disposent de la plus grande autonomie. Cette autonomie se manifeste, entre autres, dans la manière dont les communes distribuent des services publics à leur population. En Suisse, si certains services publics, à l'exemple de la collecte des déchets, sont fréquemment et depuis longtemps externalisés à des entreprises privées, certains autres services sont presque toujours fournis directement par les collectivités publiques. En outre, il existe de nombreuses entreprises publiques dont le mode de gestion tient principalement de celui de l'économie privée. D'autre part, la plupart des communes collaborent en matière de services publics soit par des contrats de vente de services, soit par le biais d'associations de communes ou de syndicats intercommunaux. Les enjeux de ces choix sont fondamentaux car ils affectent souvent la vie quotidienne des citoyens, mais aussi la qualité de la gouvernance publique et le rapport qu'entretient la population avec ses autorités.

Ces questions importantes n'ont à l'heure actuelle jamais fait l'objet d'études approfondies à l'échelle des communes suisses. C'est la raison pour laquelle nous avons choisi de consacrer une recherche à ce thème. Plus précisément, il s'agit d'étudier quels sont les facteurs qui guident les communes au moment de choisir de produire elles-mêmes un service public ou d'externaliser la production de celui-ci à d'autres entités publiques ou privées. Cette recherche menée au sein de l'unité d'économie de la régulation de l'IDHEAP s'inscrit dans le cadre d'un projet du Fonds National Suisse de la Recherche Scientifique (FNS). Ce projet repose sur une démarche scientifique tout en ayant une portée pratique pour les collectivités publiques de notre pays. En cela, elle est originale et contribuera à l'élargissement des connaissances en matière de production des services publics dans un contexte fédéraliste, ceci dans le but d'une bonne gouvernance.

Ce thème n'ayant jamais été étudié en Suisse, il nous est indispensable de constituer une base de données qui servira de fondement à notre étude. Il est important que cette base de données soit la plus large possible afin que des enseignements pratiques puissent être tirés de nos résultats. C'est pour cette raison que nous avons l'avantage de vous soumettre le présent questionnaire en vous remerciant de bien vouloir y répondre. Nous vous garantissons que notre base de données sera anonymisée et que les résultats publiés ne permettront en aucun cas d'identifier les réponses individuelles de chaque commune. Si nous vous demandons malgré tout d'identifier votre commune au début du questionnaire, c'est uniquement afin de mettre vos réponses en lien avec des données statistiques issues d'autres sources (par exemple le chiffre de la population légale).

En vous remerciant d'avance de votre précieuse collaboration, nous vous adressons, Madame, Monsieur, nos plus cordiales salutations

Prof. Dr. Laure Athias, Professeure assistante

Pascal Wicht, assistant-doctorant



Pour chacune des questions suivantes, veuillez cocher une seule réponse. Si plusieurs réponses paraissent correspondre, veuillez choisir celle qui convient le mieux. Veuillez également répondre à toutes les questions : seuls les questionnaires remplis intégralement pourront être utilisés. Sauf précision contraire, toutes les questions s'entendent au 1er janvier 2012.

## Identification de la commune

Nom de la commune :

Canton :

## Fourniture des services publics

**Interne** : Le service est fourni aux administrés par la commune, c'est-à-dire par des employés communaux, sans recours à des tiers. La commune est seule à décider et à assumer la responsabilité de ce service. Il s'agit du mode traditionnel de fourniture des services publics.

**Association** : Le service est fourni par une association de commune (syndicat intercommunal), c'est-à-dire un organisme de droit public constitué pour la fourniture d'un ou plusieurs services. La commune est représentée dans les organes dirigeants de l'association.

**Régie** : Le service est fourni par un établissement public autonome (services industriels) ou une entreprise appartenant en majorité aux pouvoirs publics.

**Contrat public** : Le service est acheté à une autre commune ou à une autre collectivité publique (par exemple le canton).

**Contrat privé** : Le service est acheté à une entreprise privée qui fournit le service. Le fournisseur est payé par la commune qui finance le service par une taxe ou par le budget public (c'est-à-dire par l'impôt).

**Partenariat public-privé** : Le service est fourni conjointement par la commune et une ou plusieurs entreprises privées. Les responsabilités et les risques sont partagés entre le secteur public et le secteur privé.

**Concession** : La commune ne fournit pas elle-même le service, elle autorise une ou plusieurs entreprises à fournir ce service et à le vendre aux administrés. La différence fondamentale avec le « contrat privé » est que dans le cadre de la concession, c'est le consommateur et non pas la commune qui paie directement le service au fournisseur.

**Autre niveau** : Le service est fourni par un autre niveau gouvernemental (canton, cercle, district) sans que la commune n'intervienne dans la fourniture du service.

**Bénévolat** : Le service est fourni par des bénévoles et/ou par des associations à but non lucratif.

**Non fourni** : La commune ne fournit pas le service. La fourniture de celui-ci est, cas échéant, laissée au marché privé sans intervention des pouvoirs publics.

**1. Veuillez nous indiquer de quelle manière votre commune fournit chacun des services suivants, selon les définitions ci-dessus.**

*Si plusieurs réponses semblent convenir, veuillez cocher celle qui correspond le mieux.*

	Interne	Association	Régie	Contrat public	Contrat privé	Partenariat public-privé	Concession	Autre niveau	Bénévolat	Non fourni
Nettoyage des bureaux de l'administration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Service d'hiver (déneigement des rues, salage)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Voirie, nettoyage des rues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contrôle du stationnement des véhicules sur le domaine public	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Collecte des ordures ménagères	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Déchetterie	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Enlèvement des cadavres d'animaux	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eclairage public	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Distribution d'eau potable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Entretien des canalisations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Epuration des eaux usées	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accueils extrascolaires (pour enfants scolarisés, c'est-à-dire hors crèches et garderies)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cantine scolaire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Services scolaires spécialisés (logopédie, psychomotricité, psychologie scolaire)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Entretien des bâtiments scolaires (conciergerie)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Surveillance de lieux sensibles (places publiques etc.), lutte contre le vandalisme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Parcs et jardins (parcs publics, plates-bandes etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cimetières	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Entretien et taille des arbres	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forêts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**2. Selon vous, à quel point est-il difficile pour les autorités de votre commune (exécutif communal) d'anticiper quels seront les besoins des citoyens de la commune concernant ce service dans les cinq prochaines années ?**

	1. Très facile	2. Plutôt facile	3. Ni l'un ni l'autre	4. Plutôt difficile	5. Très difficile
Nettoyage des bureaux de l'administration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Service d'hiver (déneigement des rues, salage)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Voirie, nettoyage des rues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contrôle du stationnement des véhicules sur le domaine public	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Collecte des ordures ménagères	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Déchetterie	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Enlèvement des cadavres d'animaux	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eclairage public	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Distribution d'eau potable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Entretien des canalisations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Epuration des eaux usées	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accueils extrascolaires (pour enfants scolarisés, c'est-à-dire hors crèches et garderies)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cantine scolaire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Services scolaires spécialisés (logopédie, psychomotricité, psychologie scolaire)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Entretien des bâtiments scolaires (conciergerie)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Surveillance de lieux sensibles (places publiques etc.), lutte contre le vandalisme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Parcs et jardins (parcs publics, plates-bandes etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cimetières	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Entretien et taille des arbres	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forêts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**3. Selon vous, quelle importance les citoyens de votre commune accordent-ils à la qualité du service fourni, pour chacun des services suivants ?**

	1. Une importance très faible	2. Une importance plutôt faible	3. Ni l'un ni l'autre	4. Une importance plutôt grande	5. Une très grande importance
Nettoyage des bureaux de l'administration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Service d'hiver (déneigement des rues, salage)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Voirie, nettoyage des rues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contrôle du stationnement des véhicules sur le domaine public	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Collecte des ordures ménagères	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Déchetterie	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Enlèvement des cadavres d'animaux	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eclairage public	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Distribution d'eau potable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Entretien des canalisations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Epuración des eaux usées	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accueils extrascolaires (pour enfants scolarisés, c'est-à-dire hors crèches et garderies)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cantine scolaire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Services scolaires spécialisés (logopédie, psychomotricité, psychologie scolaire)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Entretien des bâtiments scolaires (conciergerie)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Surveillance de lieux sensibles (places publiques etc.), lutte contre le vandalisme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Parcs et jardins (parcs publics, plates-bandes etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cimetières	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Entretien et taille des arbres	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forêts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**4. En supposant que votre commune décide de fournir les services suivants au moyen d'un contrat privé ou d'une concession, jugez-vous qu'elle serait en mesure de choisir entre de nombreuses entreprises ou qu'au contraire ce choix serait très restreint (peu de concurrents) ?**

	1. Nombre très restreint	2. Nombre plutôt restreint	3. Ni l'un ni l'autre	4. Nombre plutôt élevé	5. Nombre très élevé
Nettoyage des bureaux de l'administration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Service d'hiver (déneigement des rues, salage)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Voirie, nettoyage des rues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contrôle du stationnement des véhicules sur le domaine public	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Collecte des ordures ménagères	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Déchetterie	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Enlèvement des cadavres d'animaux	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eclairage public	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Distribution d'eau potable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Entretien des canalisations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Epuration des eaux usées	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accueils extrascolaires (pour enfants scolarisés, c'est-à-dire hors crèches et garderies)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cantine scolaire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Services scolaires spécialisés (logopédie, psychomotricité, psychologie scolaire)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Entretien des bâtiments scolaires (conciergerie)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Surveillance de lieux sensibles (places publiques etc.), lutte contre le vandalisme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Parcs et jardins (parcs publics, plates-bandes etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cimetières	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Entretien et taille des arbres	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forêts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## A.4 Athias-Wicht survey (German version)



Institut de hautes études en administration publique  
Swiss Graduate School of Public Administration

An den Gemeindeschreiber

Lausanne, den 8. Januar 2013

Sehr geehrte Damen und Herren

Die Schweiz geniesst eine hohe Selbständigkeit der Gemeinden und der Kantone. Dies zeigt sich unter anderem in der Art und Weise, wie die Gemeinden ihre Aufgaben wahrnehmen. Während Dienste wie die Abfallentsorgung oft und seit langem an privatrechtliche Unternehmen ausgelagert werden, werden andere Dienstleistungen fast immer durch die Gemeinde selber wahrgenommen. Dafür bestehen oft gemeindeeigene Unternehmen, die wie privatrechtliche geführt werden. Zudem werden viele Dienstleistungen durch Absprachen, Verträge und Arbeitsgemeinschaften zwischen Gemeinden oder im Verbund mehrerer Gemeinden erbracht. Die Wahl und das Zusammenspiel dieser Vorgänge spürt der Bürger in Form der Qualität und der Kosten der täglichen Leistungen. Diese sind eine wesentlicher Massstab für das Vertrauen des Bürgers in seine Behörden.

Bis anhin wurde diese Thematik in keiner schweizweiten Studie untersucht. Deshalb haben wir beschlossen, die grosse Vielfalt im Bereich der öffentlichen Dienstleistungen auf Gemeindeebene in einer Studie aufzuzeigen und näher auszuleuchten. Welche Überlegungen werden in der Gemeinde gemacht? Was sind die Fakten die dazu führen, dass eine Dienstleistung selber erbracht oder eben ausgelagert wird? Diese Forschungsarbeit wird im Rahmen eines Projekts des Schweizerischen Nationalfonds (SNF) unter dem Schirm von IDHEAP (Hochschulinstitut für öffentliche Verwaltung) und des Departements für Volkswirtschaftslehre der Universität Freiburg ausgeführt. Naturgemäss wird dieses Projekt mit wissenschaftlichen Methoden verfolgt, andererseits aber rechnen wir mit einem nachhaltigen praktischen Wert für die Gemeinden selber.

Das Thema der Studie ist absolut neu. Darum brauchen wir eine breite Basis an Grundinformationen. Damit wollen wir sicherstellen, dass unsere Studie praktische Hinweise und Schlussfolgerungen ergibt, welche von den Gemeinden genutzt werden können. Darum erlauben wir uns, sehr geehrte Damen und Herren, Ihnen den folgenden Fragebogen zukommen zu lassen. Wir bitten Sie diesen bis zum 31. Januar 2013 auszufüllen. Um die Fragen auszufüllen, benötigen Sie ungefähr 20 Minuten. Die Daten werden anonym behandelt und erlauben keinen Rückschluss auf ihren Ursprung. Trotzdem bitten wir Sie, den Namen ihrer Gemeinde am Anfang des Fragebogens zu nennen. Dies dient allein dazu, die Informationen mit bestehenden statistischen Daten zu vernetzen (zum Beispiel mit der Einwohnerzahl).

Wir danken Ihnen, sehr geehrte Damen und Herren, ganz herzlich für Ihre Mitarbeit an diesem Projekt und verbleiben

mit freundlichen Grüssen,

Prof. Dr. Laure Athias, Assistenzprofessorin (IDHEAP)  
Pascal Wicht, Diplomassistent (IDHEAP)

Kreuzen Sie für die folgenden Fragen bitte jeweils eine einzige Antwort an. Falls mehrere Antworten in Frage kommen, wählen Sie bitte die zutreffenste. **Beantworten Sie bitte alle Fragen** : nur vollständig ausgefüllte Fragebögen können verwendet werden. Alle Fragen beziehen sich auf die Situation am 1. Januar 2012.

## Identifizierung der Gemeinde

Name der Gemeinde:

Kanton:

## Bereitstellung der öffentlichen Dienstleistungen

### **Begriffserklärungen :**

**Intern:** Die Leistungen werden von den Angestellten der Gemeinde erbracht. Die Gemeinde trägt die Verantwortung. Dies ist die übliche Form der Erbringung öffentlicher Dienstleistungen.

**Verbund:** Die Leistungen werden über eine interkommunale Gemeinschaft (Gemeindeverband), das heisst über einen öffentlich rechtlichen Betrieb mit definiertem Leistungsauftrag erbracht. Die Gemeinde ist im Verwaltungsrat vertreten.

**Regie:** Leistungen werden von einem selbständig handelnden Unternehmen erbracht (z.B. Industrielle Betriebe), welches mehrheitlich im Besitz der beteiligten Gemeinde ist. Dieses Unternehmen hat ein eigenes Budget, unabhängig von der Gemeinde.

**Öffentlicher Dienstvertrag:** Leistungen werden von einer anderen Gemeinde oder von einer anderen öffentlichen Verwaltung (zum Beispiel Kanton) eingekauft.

**Unternehmensvertrag:** Die Leistungen werden von einem privatrechtlichen Unternehmen eingekauft und vom Staat bezahlt (über die Steuern oder über Abgaben).

**Public Private Partnership (PPP):** PPP ist die partnerschaftliche Zusammenarbeit zwischen der öffentlichen Hand und privater Wirtschaft. Der von der Gemeinde bezahlte private Partner ist in alle Phasen (Planung, Bau, Finanzierung, Nutzung der Infrastrukturen) involviert. Damit unterscheidet sich PPP vom Unternehmensvertrag, wo der Unternehmer nur eine definierte Tätigkeit ausführt.

**Konzession:** Wie PPP, mit dem Unterschied, dass das involvierte private Unternehmen seine Leistungen direkt an den Verbraucher verrechnet.

**Andere Leistungsebene:** Die Leistungen werden von einer höheren Stufe erbracht (Kanton, Distrikt, Kreis.)

**Freiwillig:** Die Leistung wird von Freiwilligen oder von einem Verein ohne Gewinnziel erbracht.

**Keine Leistung:** Die Gemeinde erbringt diese Leistung nicht und überlässt diese privatrechtlichen Unternehmen.

**1. Bitte sagen Sie uns, wie Ihre Gemeinde jeden der folgenden Dienste anbietet (nach oben erwähnten Definitionen)**  
*Treffen mehrere Antworten zu, so kreuzen Sie diejenige an, die am besten übereinstimmt.*

	Interne	Verbund	Regie	Öffentlicher Dienstvertrag	Unternehmensvertrag	Public Private Partnership	Konzession	Andere Leistungsebene	Freiwillig	Keine Leistung
Reinigung der Verwaltungsbüros	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Schneeräumarbeiten, Salzstreuen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Straßenreinigung	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Strassenunterhalt (Ausbesserung)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Parkkontrolle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kehrichtabfuhr	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Abfallsammelstelle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Entsorgung von Tierkadavern	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Straßenbeleuchtung	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trinkwasserversorgung	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reparaturen der Wasserleitungen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Abwasserreinigung	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ausserschulische Betreuung (für Kinder im Schulalter, d.h. ausser Krippen)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mittagstische	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Schuldienste (Logopädie, Psychomotorik, Schulpsychologie)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Abwärtsdienst Schulhäuser	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Überwachung öffentlicher Plätze, Kampf gegen Vandalismus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stadtgärtnerei	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friedhof	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Baumschnitt, Baumpflege	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Waldarbeiten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Öffentlicher Stadtverkehr	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



**2. Wie schwierig ist es für die Behörden Ihrer Gemeinde (Gemeindeexekutive) Ihrer Meinung nach, das Bedürfnis der Bürgerinnen und Bürger Ihrer Gemeinde nach den folgenden Dienstleistungen in den nächsten fünf Jahren abzuschätzen?**

	1. Sehr einfach	2. Ziemlich einfach	3. Mässig schwierig	4. Eher schwierig	5. Sehr schwierig
Reinigung der Verwaltungsbüros	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Schneeräumarbeiten, Salzstreuen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Straßenreinigung	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Strassenunterhalt (Ausbesserung)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Parkkontrolle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kehrichtabfuhr	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Abfallsammelstelle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Entsorgung von Tierkadavern	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Straßenbeleuchtung	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trinkwasserversorgung	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reparaturen der Wasserleitungen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Abwasserreinigung	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ausserschulische Betreuung (für Kinder im Schulalter, d.h. ausser Krippen)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mittagstische	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Schuldienste (Logopädie, Psychomotorik, Schulpsychologie)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Abwartsdienst Schulhäuser	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Überwachung öffentlicher Plätze, Kampf gegen Vandalismus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stadtgärtnerei	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friedhof	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Baumschnitt, Baumpflege	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Waldarbeiten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Öffentlicher Stadtverkehr	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**3. Wie wichtig ist Ihrer Meinung nach die Dienstleistungsqualität der folgenden Dienste für die Bürgerinnen und Bürger Ihrer Gemeinde?**

	1. Sehr unwichtig	2. Eher unwichtig	3. Mittelmässig wichtig	4. Eher wichtig	5. Sehr wichtig
Reinigung der Verwaltungsbüros	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Schneeräumarbeiten, Salzstreuen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Straßenreinigung	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Strassenunterhalt (Ausbesserung)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Parkkontrolle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kehrichtabfuhr	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Abfallsammelstelle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Entsorgung von Tierkadavern	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Straßenbeleuchtung	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trinkwasserversorgung	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reparaturen der Wasserleitungen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Abwasserreinigung	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ausserschulische Betreuung (für Kinder im Schulalter, d.h. ausser Krippen)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mittagstische	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Schuldienste (Logopädie, Psychomotorik, Schulpsychologie)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Abwärtsdienst Schulhäuser	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Überwachung öffentlicher Plätze, Kampf gegen Vandalismus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stadtgärtnerei	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friedhof	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Baumschnitt, Baumpflege	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Waldarbeiten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Öffentlicher Stadtverkehr	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Gehen Sie unter der Annahme, dass sich Ihre Gemeinde entscheidet, folgende Dienste mittels eines privaten Vertrags oder einer Konzession anzubieten, davon aus, dass die Gemeinde in der Lage sein wird, mehrere Bewerber in Konkurrenz zu setzen oder dass die Wahl im Gegenteil sehr beschränkt sein wird (wenige Mitbewerber)?

	1. Sehr wenige Mitbewerber	2. Eher wenige Mitbewerber	3. Mittelmässig viele Mitbewerber	4. Eher viele Mitbewerber	5. Sehr viele Mitbewerber
Reinigung der Verwaltungsbüros	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Schneeräumarbeiten, Salzstreuen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Straßenreinigung	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Strassenunterhalt (Ausbesserung)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Parkkontrolle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kehrichtabfuhr	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Abfallsammelstelle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Entsorgung von Tierkadavern	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Straßenbeleuchtung	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trinkwasserversorgung	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reparaturen der Wasserleitungen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Abwasserreinigung	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ausserschulische Betreuung (für Kinder im Schulalter, d.h. ausser Krippen)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mittagstische	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Schuldienste (Logopädie, Psychomotorik, Schulpsychologie)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Abwärtsdienst Schulhäuser	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Überwachung öffentlicher Plätze, Kampf gegen Vandalismus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stadtgärtnerei	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friedhof	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Baumschnitt, Baumpflege	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Waldarbeiten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Öffentlicher Stadtverkehr	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## A.5 Athias-Wicht survey (Italian version)



Institut de hautes études en administration publique  
Swiss Graduate School of Public Administration

Alla cortese attenzione del  
Segretario comunale

Losanna, 3 dicembre 2012

Egregio Signore  
Gentile Signora

La Svizzera è uno dei paesi al mondo in cui i cantoni e i comuni hanno una maggiore autonomia, osservabile soprattutto nel modo in cui i comuni distribuiscono i servizi pubblici alla popolazione. Se alcuni servizi, come la raccolta dei rifiuti, sono da qualche tempo affidati a società private, gli altri servizi sono comunemente forniti direttamente dagli enti pubblici stessi. Inoltre, ci sono molte aziende pubbliche la cui modalità di gestione è sostanzialmente basata su quelle in uso nel settore privato. D'altronde, la maggior parte dei comuni collabora fra loro in materia di servizi, sia tramite contratti di prestazione, sia tramite associazioni comunali o consorzi intercomunali.

Le conseguenze di queste scelte sono fondamentali perché spesso incidono sulla vita quotidiana dei cittadini ma anche sulla qualità della gestione pubblica e sul rapporto tra popolazione e autorità. Si tratta di questioni importanti che finora non sono mai state approfondite al livello dei comuni svizzeri. È per questo che abbiamo scelto di svolgere un'attività di ricerca su quest'argomento. Più in particolare, vogliamo studiare i fattori che portano i comuni a scegliere fra la fornitura diretta di un servizio pubblico oppure la sua esternalizzazione verso altri enti pubblici o privati. Questa ricerca si svolgerà all'interno delle unità di Economia della regolamentazione dell'IDHEAP e della Facoltà di Economia politica presso l'Università di Friburgo, ed è sostenuta da un progetto di ricerca del Fondo nazionale svizzero (FNS). Il progetto si basa su un approccio scientifico, pur avendo rilevanza pratica per le autorità pubbliche del nostro Paese. Come tale, è originale e contribuirà alla diffusione della conoscenza nella fornitura di servizi pubblici in un contesto federalista, con l'obiettivo di una loro efficiente gestione.

Poiché questo tema non è mai stato studiato in Svizzera, è essenziale creare una banca dati che servirà come base per il nostro studio. È importante che la banca dati sia la più completa possibile affinché dai nostri risultati possano essere tratti insegnamenti utili. Abbiamo quindi il piacere di sottoporle il seguente questionario, e Le chiediamo di volerlo compilare e ritornare entro il 20 dicembre. Il tempo necessario per rispondere a tutte le domande è di circa venti minuti. Noi garantiamo che le informazioni immesse nella banca dati saranno rese anonime, e che la pubblicazione dei risultati non permetterà in alcun modo di individuare le risposte dei singoli comuni. La richiesta di identificare il nome del comune all'inizio del questionario serve solo per mettere le risposte in relazione ai dati statistici provenienti da altre fonti (ad esempio, il numero della popolazione legale). Una volta concluso il nostro studio, sarà oltremodo nostra premura inviarLe una sintesi dei risultati.

La ringraziamo sin d'ora per la gradita e preziosa collaborazione e Le porgiamo in nostri migliori saluti.

Dr. Laure Athias, professore assistente, IDHEAP  
Pascal Wicht, dottorando-assistente, IDHEAP

Per ciascuna delle seguenti domande indicare una sola risposta. Se più risposte sembrano rispondere meglio a una domanda, si prega di scegliere quelle più adatte. Si prega inoltre di **rispondere a tutte le domande**, poiché solo i questionari debitamente compilati potranno essere utilizzati. Tutte le domande fanno riferimento alla data del 1° gennaio 2012.

## Identificazione del Comune

Nome del Comune:

Cantone:

## Prestazione di servizi pubblici

### **Definizioni:**

**Interno:** il servizio è fornito ai cittadini da parte del Comune, ossia dai dipendenti comunali, senza l'intervento di terzi. Il Comune è il solo a decidere e ad assumersi la responsabilità per il servizio. Questo è il modo tradizionale di fornitura di servizi pubblici.

**Associazione:** Il servizio è fornito da un'associazione intercomunale (Consorzio), vale a dire un organo statutario di diritto pubblico istituito per la fornitura di uno o più servizi. Il Comune è rappresentato negli organi direttivi del Consorzio.

**Azienda municipalizzata:** Il servizio è fornito da un ente pubblico autonomo (per es. i servizi industriali) o da un'azienda con capitale a maggioranza pubblica. Tale ente ha un proprio bilancio, indipendente da quello del Comune.

**Appalto pubblico:** Il servizio è fornito da un altro Comune o a un'altra autorità pubblica (ad esempio il Cantone).

**Contratto privato:** Il servizio è fornito da una società privata direttamente al cittadino. Il prestatore del servizio è pagato dal Comune che si finanzia tramite una tassa specifica oppure con il bilancio pubblico (vale a dire con le imposte).

**Partenariato pubblico-privato (PPP):** Il servizio è fornito congiuntamente dal Comune e da una o più aziende private. In un PPP il partner privato è pagato dal Comune ed è coinvolto in tutte le fasi del processo (sviluppo, costruzione, finanziamento, gestione delle infrastrutture). Questa è la differenza fondamentale fra PPP e contratto privato in cui l'operatore privato interviene unicamente nella fase operativa.

**Concessione:** Questo modello è identico al PPP, con la differenza che l'operatore privato è remunerato direttamente dai cittadini-consumatori.

**Altro livello:** Il servizio è fornito da un altro livello di governo (Cantone, Circondario, Distretto) senza che il Comune intervenga nella fornitura del servizio.

**Volontariato:** Il servizio è fornito da volontari e/o da associazioni senza scopo di lucro.

**Non fornito:** Il Comune non fornisce il servizio poiché lasciato interamente al settore privato senza alcun intervento dell'autorità pubblica.

**1. Vogliate indicare con quale modalità il Suo Comune fornisce i seguenti servizi, in base alle definizioni suggerite.**

*Se risposte multiple sembrano più opportune, si prega di scegliere quelle più pertinenti.*

	Interno	Associazione	Azienda municipalizzata	Appalto pubblico	Contratto privato	Partenariato pubblico-privato (PPP)	Concessione	Altro livello	Volontariato	Non fornito
Pulizia degli uffici amministrativi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Servizi invernali (spazzaneve, spargimento sale, ecc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rete viaria, pulizia strade	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manutenzione strade comunali (cantieri)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Parcheggi comunali	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Raccolta rifiuti domestici	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discariche	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eliminazione cadaveri animali domestici	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Illuminazione pubblica	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Distribuzione acqua potabile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manutenzione delle canalizzazioni	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Depurazione acque	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Servizi doposcuola (per bambini in età scolastica, esclusi quindi asili e asili nido)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mensa scolastica	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Servizi scolastici specializzati (logopedia, psicomotricità, sostegno psicologico nelle scuole)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manutenzione edifici scolastici (custodia)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sorveglianza zone sensibili (luoghi pubblici), lotta contro il vandalismo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Parchi e giardini pubblici	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cimiteri	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manutenzione forestale	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boschi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trasporti pubblici urbani	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**2. A Suo avviso, quanto sarà difficile per l'autorità locale (Esecutivo comunale) prevedere le esigenze dei cittadini del Suo Comune per i seguenti servizi nei prossimi cinque anni?**

	1. Molto facile	2. Abbastanza facile	3. Con qualche difficoltà	4. Difficile	5. Molto difficile
Pulizia degli uffici amministrativi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Servizi invernali (spazzaneve, spargimento sale, ecc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rete viaria, pulizia strade	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manutenzione strade comunali (cantieri)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Parcheggi comunali	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Raccolta rifiuti domestici	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discariche	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eliminazione cadaveri animali domestici	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Illuminazione pubblica	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Distribuzione acqua potabile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manutenzione delle canalizzazioni	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Depurazione acque	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Servizi doposcuola (per bambini in età scolastica, esclusi quindi asili e asili nido)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mensa scolastica	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Servizi scolastici specializzati (logopedia, psicomotricità, sostegno psicologico nelle scuole)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manutenzione edifici scolastici (custodia)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sorveglianza zone sensibili (luoghi pubblici), lotta contro il vandalismo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Parchi e giardini pubblici	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cimiteri	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manutenzione forestale	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boschi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trasporti pubblici urbani	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**3. Secondo Lei, quanto è importante per i cittadini del Suo Comune la qualità di ciascuno dei seguenti servizi?**

	1. Poco importante	2. Abbastanza importante	3. Importante	4. Molto importante	5. Fondamentale
Pulizia degli uffici amministrativi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Servizi invernali (spazzaneve, spargimento sale, ecc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rete viaria, pulizia strade	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manutenzione strade comunali (cantieri)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Parcheggi comunali	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Raccolta rifiuti domestici	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discariche	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eliminazione cadaveri animali domestici	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Illuminazione pubblica	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Distribuzione acqua potabile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manutenzione delle canalizzazioni	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Depurazione acque	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Servizi doposcuola (per bambini in età scolastica, esclusi quindi asili e asili nido)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mensa scolastica	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Servizi scolastici specializzati (logopedia, psicomotricità, sostegno psicologico nelle scuole)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manutenzione edifici scolastici (custodia)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sorveglianza zone sensibili (luoghi pubblici), lotta contro il vandalismo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Parchi e giardini pubblici	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cimiteri	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manutenzione forestale	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boschi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trasporti pubblici urbani	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



**4. Nell'ipotesi che il Suo Comune decida di fornire i seguenti servizi attraverso un contratto di diritto privato o di una concessione, a Suo parere il Comune sarebbe in grado di scegliere tra un numero elevato di aziende oppure, al contrario, la scelta sarebbe limitata a pochi concorrenti?**

	1. Pochi concorrenti	2. Numero limitato di concorrenti	3. Numero rilevante di concorrenti	4. Numero elevato di concorrenti	5. Molti concorrenti
Pulizia degli uffici amministrativi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Servizi invernali (spazzaneve, spargimento sale, ecc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rete viaria, pulizia strade	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manutenzione strade comunali (cantieri)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Parcheggi comunali	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Raccolta rifiuti domestici	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discariche	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eliminazione cadaveri animali domestici	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Illuminazione pubblica	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Distribuzione acqua potabile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manutenzione delle canalizzazioni	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Depurazione acque	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Servizi doposcuola (per bambini in età scolastica, esclusi quindi asili e asili nido)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mensa scolastica	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Servizi scolastici specializzati (logopedia, psicomotricità, sostegno psicologico nelle scuole)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manutenzione edifici scolastici (custodia)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sorveglianza zone sensibili (luoghi pubblici), lotta contro il vandalismo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Parchi e giardini pubblici	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cimiteri	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manutenzione forestale	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boschi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trasporti pubblici urbani	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Part II

# Culture and Make-or-Buy Decisions for Public Services

## Chapter 3

# Does Culture Matter for Public Service Delivery ?

In the first part of this thesis, and more particularly in Chapter 2, we have highlighted the fact that cultural differences may help to explain the differences that can be observed across jurisdictions on their *make-or-buy* decisions. Indeed, as beliefs and values, that are transmitted fairly unchanged from generation to generation, affect individual and group behaviours, they are a central determinant of institutional arrangements.

The goal of this chapter is to use interesting features of the French-German language border in Switzerland (*Roestigraben*) to provide a robust causal evidence of the importance of culture in explaining the organizational choices of Swiss local Governments.

To do this, we shall use a Regression-Discontinuity Design (RDD) approach, combined with a within-canton identification strategy on a sample of municipalities in the three bilingual cantons of Berne, Fribourg, and Valais in order to show that municipalities on both sides of the language border and facing identical economic and institutional frameworks make significantly different organizational choices.

The results show a very large impact of the language border on the modes of provision of public services in Swiss municipalities. We find that French-speaking

border municipalities are 60 percent less likely to contract with the private sector than their German-speaking adjacent municipalities, pointing out that the cultural factor is the most important one in municipalities' *make-or-buy* decisions

Analysing the expenditure of Swiss municipalities, we finally show significant differences in the efficiency of the organizational choices in both language areas. We show that in-house provision is more efficient in the French-speaking area, and that contracting (public or private) increases the public spending differential between the French- and German-speaking areas. These results suggest that mission-matching might be the channel of transmission between culture and the organizational choices.

The outline of this chapter is as follows. In Section 3.1, we shall provide an overview of the main features of the *Roestigraben*, in order to show why this language border will allow us to provide causal inference. In Section 3.2, we shall present our identification strategy. Section 3.3 provides a detailed description of the data we use Section while Section 3.4 presents our estimation results. Section 3.5 will present our analysis of public expenditure. Finally, Section 3.6 will conclude.

### 3.1 The Roestigraben

The language border between French and German areas is called *Roestigraben*<sup>1</sup>, emphasizing the fact that this language border is a cultural border (Büchi, 2000). In addition, as highlighted in Eugster et al. (2011), Novembre, Johnson, Bryc, Kutalik, Boyko, Auton, Indap, King, Bergmann, Nelson, Stephens and Bustamante (2008) find that genetic markers differ more strongly between people living in Latin (that is, French, Italian, and Romansh) Swiss areas and the German Swiss area than within those regions. In addition, Novembre et al. (2008) find that genetic markers differ more strongly between people living in Latin (that is, French, Italian, and Romansh) Swiss areas and the German Swiss area than within those regions. The term *Roestigraben* first appeared in the media in the years 1970s. However, cultural differences between the French- and German-speaking areas already existed in the beginning of the 20th Century<sup>2</sup>, and peaked during World War I, where the French-speakers supported mostly France and the Triple Entente whereas the German-speakers mostly supported the German-speaking countries of the Triple Alliance (Germany, Austria). The appointment of the notoriously pro-German General Wille as the Commander-in-Chief of the Swiss Army, as well as a huge espionage scandal in which some (German-speaking) General officers only received lighter penalties for having transmitted confidential information to the German High Command, created important tensions.

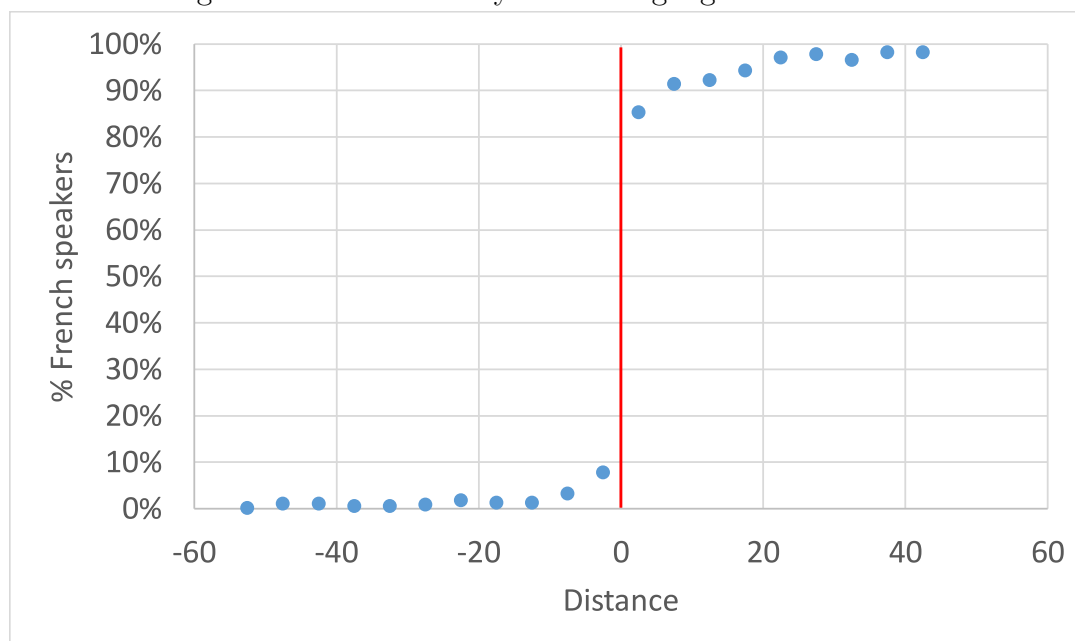
This *Roestigraben* is all the more interesting that it is a *sharp* border, insofar the fraction of French native speakers falls from 85 percent to 8 percent within a distance of 5 kilometers across the border. Between 5 and 10 kilometers, the respective shares

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<sup>1</sup>Referring to Roesti, a popular potato-dish in the German area (but not in the French part) of the country.

<sup>2</sup>The most important cultural gap until the mid-19th Century was not between the language areas, but more between the religion areas, that is between the (conservative) Catholic cantons and the (liberal) Protestant cantons, which in particular provoked the *Sonderbund* civil war (1847).

Figure 3.1: Discontinuity of the languages at the border



Notes: Percentage of French-speakers in the cities of our dataset (5km bins) as a function of the distance to the border (positive distance for French-speaking cities). Languages other than French and German are not considered. The vertical line indicates the language border.

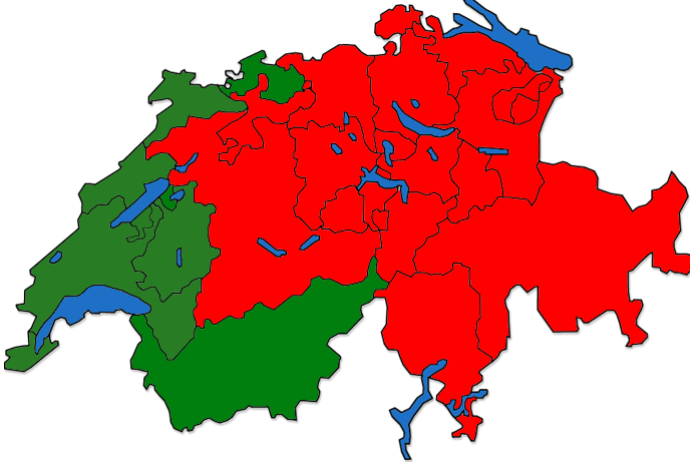
are 92 percent and 3 percent (Fig. 3.1). It seems reasonable to assume that these minorities are too small to impact significantly the choices made by the authorities. Furthermore, when considering the official (administrative) language, the fraction of French-speaking municipalities falls from almost 100 percent to 0 percent within a distance of 5 kilometers across the border (and vice versa for administratively German-speaking municipalities), suggesting the existence of a sharp cutoff. Note also that the administrative language of municipalities have not changed over time<sup>3</sup>. Furthermore, there is no associated change in geography at this language border, and large parts of the language border run *within* Swiss States (Cantons).

Secondly, it is a well-known fact that this language border is also a cultural border. This cultural difference manifests itself frequently regarding voting outcomes, for example in the vote for the adhesion of Switzerland to the European Economic Area (1992), where 75 percent of the French-speakers voted in favour of the adhesion, whereas 57 percent of the German-speakers refused it. All French-speaking cantons voted Yes whereas all German-speaking cantons but two voted No (Fig. 3.2). Another example, more recent, is the vote on the Federal Initiative “Against Mass Immigration” (introduction of immigration quotas) that had been refused in all French speaking cantons (59 percent of the voters voted No), whereas all German-speaking cantons but three accepted the Initiative (52 percent of Yes-votes) (Fig. 3.3). Hence, particularly in Switzerland, the language of a municipality or an individual is an excellent proxy for its cultural identity.

The Figure 3.4 displays a map of Switzerland shaded according to the official lan-

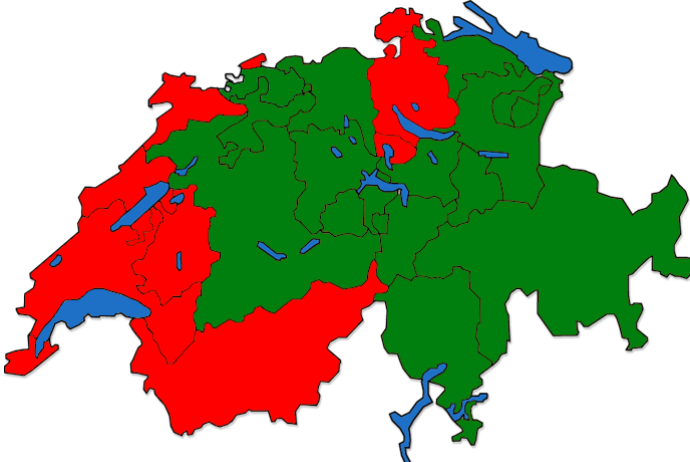
<sup>3</sup>To be completely precise, we are aware of one municipality in the French part, called Mont Tramelan, which administrative language is German since 1952.

Figure 3.2: Vote on the adhesion of Switzerland to the European Economic Area



Notes: Vote on the adhesion of Switzerland to the European Economic Area (December 6, 1992). Cantons in green voted Yes, Cantons in red voted No.

Figure 3.3: Vote on the Initiative "Against Mass Immigration"



Notes: Vote on the Initiative "Against Mass Immigration" (February 9, 2014). Cantons in green voted Yes, Cantons in red voted No.

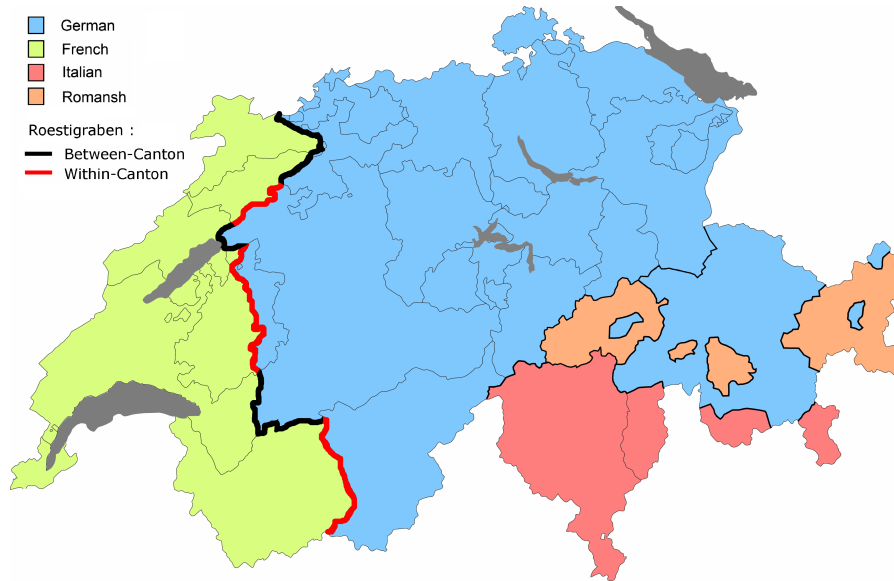


Figure 3.4: The Roestigraben

*Source:* Swiss Federal Statistical Office.

guage of each municipality. The thick line represents the *Roestigraben*. The black segments represent the portions that run *between* two cantons, whereas the red segments represent the portions of the *Roestigraben* that run *within* cantons.

This is important since most policies in Switzerland are set at the state (rather than the federal) level. Thus, within these bilingual states, municipalities of different sides of the language border face the same regional set of policies and institutions and the same economic conditions, which includes in particular the set of public services that municipalities have to provide, as well as qualitative requirements. For example, in the case of schools, the size of the classes and the qualifications of the teachers are set at the Cantonal level. In addition, the political environment, as for example the budgetary rules, the mode of legislative power (elected parliament or assembly of all citizens) or the scope of the rights of initiative and referendum, are decided at the State level are mainly set at the Cantonal level. Within-state contrasts on either side of the border measure therefore to what extent public authorities make different *make-or-buy* decisions for public-services delivery even if they face identical levels of policy guidelines. From an econometric point of view, these features call for a spatial regression discontinuity design (RDD), using the *Roestigraben*, combined with a within-state estimation strategy (state fixed effects), *i.e.* we contrast *border* municipalities on either side of the segments of the language border that run *through* states. The assumption is that within-state municipalities that are just of either side of the border are very similar (firms and individuals' location decisions are likely to be balanced) so that the unobserved heterogeneity is assumed to be the same across the border<sup>4</sup>. Thus, this Roestigraben approach strikes us as a near-to-ideal object of

<sup>4</sup>This *Roestigraben* identification strategy is followed by some studies, *e.g.* Eugster et al. (2011),

inquiry in order to capture the causal effect of culture on public service delivery.

## 3.2 Identification Strategy: Regression Discontinuity Design

We want to quantify the relationship between the alternative forms of service provision and technical factors as well as cultural factors. In order to describe the choice between the three alternatives, we use a standard multinomial logit approach combined with a spatial regression discontinuity design<sup>5</sup>. In the following model, we compare the probability that municipality  $i$  provides service  $j$  using the provision mode  $m \in \{\text{Private contracting, Public contracting}\}$  against the base category *In-House*:

$$\ln \left[ \frac{Pr(Y_{ij} = m)}{Pr(Y_{ij} = InHouse)} \right] = \alpha_{lm} + \delta_m \cdot F_i + \sum_{k=1}^2 \beta_{lkm} \cdot D_i^k + \sum_{k=1}^2 \beta_{rkm} \cdot D_i^k \cdot F_i + \gamma'_m \cdot \mathbf{Tech}_{ij} + \eta'_m \cdot \mathbf{X}_{ij} + \epsilon_{ijm}, \forall m, \quad (3.1)$$

with  $F_i$ , for *French*, being a dummy taking the value 1 for French-speaking municipalities. The running variable  $D_i$ , for *Distance*, which measures the distance to the closest cross-border municipality, takes positive values for French-speaking municipalities (at the right,  $r$ , of the language border) and negative values for municipalities in the German side (at the left,  $l$ , of the language border)<sup>6</sup>. We allow for different spatial trends. When the variable  $D_i$  takes the value 0, our measure of culture changes discontinuously at the language border.  $\mathbf{Tech}_{ij}$  is a vector of technical variables, and  $\mathbf{X}_{ij}$  is a vector of additional controls, including State fixed effects (dummies).

The key parameter in this regression is  $\delta_m$ . Indeed,  $\delta_m$  estimates the contrast in the probability of contracting choices at the border, that is, the difference in the mean probability of contracting choices between French and German-speaking municipalities at the border (i.e., when  $D_i = 0$ ).  $\alpha_{lm}$  measures the mean of the outcome variable in French-speaking border municipalities if they were German-speaking. The parameters  $\beta_{lkm}$  measure the spatial trend in contracting choices outcomes in the Swiss German area, whereas the parameters  $\beta_{rkm}$  allow for a completely different spatial trend in the French area.

In order to capture the pure effect of the language, we focus on the three bilingual States (Bern, Fribourg and Valais) to the extent that French and German-speaking municipalities of a same State face the same institutional framework, which we capture through State fixed effects. We confine the analysis on the municipalities located not

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Eugster and Parchet (2013),(Eugster et al., 2016).

<sup>5</sup>For a presentation of some technical considerations on this method, see the Introduction.

<sup>6</sup>To implement the local border contrast, we determined each municipality's distance to the language border. To do so, we computed the Euclidian distance, using geodata provided by the Swiss Federal Office of Topography, to proxy for economic distance between pairs of cross-border municipalities. We then took the nearest cross-border neighbour as the value for the distance to the language border.



more than 40 km from the language border. In order to check for the robustness of our results, we run our regressions with different bandwidths of 20, 25, 30 and 40 km, with both a linear spatial trend for all distances and a quadratic spatial trend at 40 km. This model is estimated with robust standard errors clustered at the municipal level.

To check the robustness of our results, we also run a logit regression, merging the categories *Public contracting* and *In-House provision*, thus directly opposing private and public provision, with an identical specification. In this case, we are able to estimate the model with robust standard errors clustered at both the *municipal* and *service* levels.

The key identifying assumption of our RDD is that factors other than culture — that potentially influence municipalities’ *make-or-buy* decisions — do not change discontinuously at the language border. In other words, the assumption boils down to conditional independence of outcome and potential language group membership at the language border.

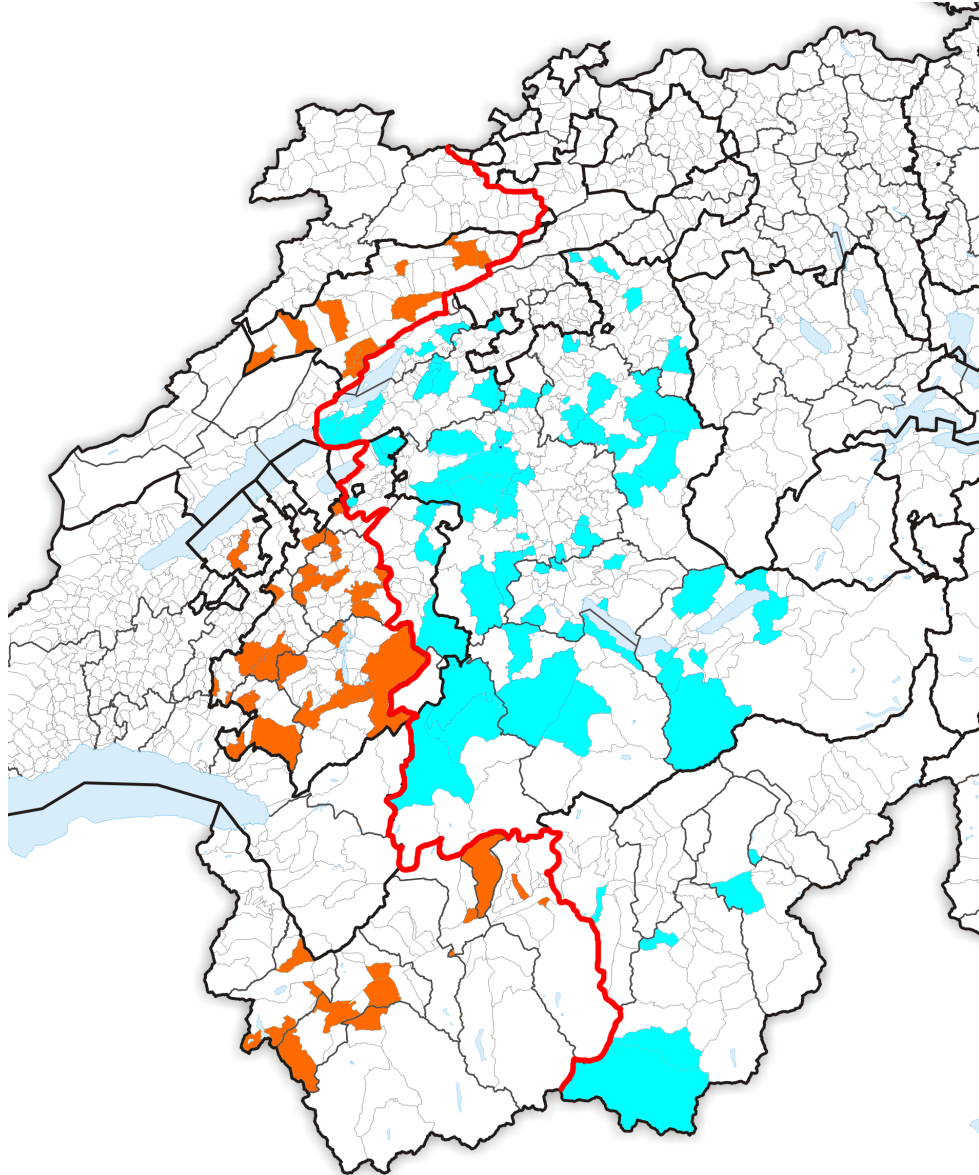
This assumption is plausible for the segments of the language border that run through States. As already highlighted above (Section 3.1), States have much discretion in setting legal and policy rules. But the within-State segments allow us to adopt a within-State estimation strategy, that is, to add State fixed effects. Appendix B.4 provides evidence that is consistent with this assumption.

### 3.3 Data

In this chapter, we shall use our self-constructed dataset on public services in the municipalities, that we have already used in the first part of the thesis (see Section 2.2 to have a description of the methodology that we have used to construct this dataset). However, in order to run within-canton estimations, we extract from this database a subsample of the three bilingual Cantons (Berne, Fribourg and Valais), which represents 142 municipalities among which 84 are German-speaking and 58 are French-speaking.

Fig. 3.5 shows a map of the municipalities — in the three bilingual cantons — that answered to our survey. The red line indicates the language border. French-speaking municipalities are represented in orange and German-speaking municipalities are represented in blue. This map suggests that, given the way the responding municipalities are scattered, there are too much missing municipalities to be able to perform a spatial analysis of mimetism with accuracy.

Figure 3.5: Municipalities of our sample (bilingual cantons)



*Notes:* Municipalities available in the Athias-Wicht database. The red line indicates the language border. French-speaking municipalities are represented in orange and German-speaking municipalities are represented in blue.

In the three bilingual cantons, 84 percent of the municipalities are located at a distance lower than 20 kilometers of the language border, whereas the percentage is 87 percent within the municipalities of our sample. This difference of 3 percentage points is however non significant<sup>7</sup>.

As is the first part, the dependent variable is a categorical variable that measures the mode of provision of a given service in a given municipality. This variable takes three possible values, namely *in-house provision*, *public contracting*, and *private contracting*. Table 3.1 reports the descriptive statistics for our dependant variable. In our sample, 54 percent of the services provided are provided in house, 21 percent through contracts with the private sector and 22 percent through contracts with other public entities. The distribution within French-speaking municipalities is quite similar (52 percent in-house, 22 percent public contracting, 22 percent private contracting), as well as within German-speaking municipalities (55 percent in-house, 22 percent public contracting, 20 percent private contracting).

Table 3.1: Descriptive statistics of the modes of provision

	All		German		French	
	Mean (Std dev.)	Min Max	Mean (Std dev.)	Min Max	Mean (Std dev.)	Min Max
Services provided	18.592 (2.782)	0 22	18.250 (2.212)	10 22	19.088 (2.081)	13 22
– In House	10.021 (3.568)	0 18	10.095 (3.284)	2 18	9.914 (3.971)	0 16
– Public contract	4.134 (2.304)	0 13	4.012 (2.300)	0 10	4.281 (2.328)	0 10
– Private contract	3.880 (2.380)	0 22	3.655 (2.352)	0 10	4.158 (2.396)	0 10
– Other	0.556 (0.911)	0 6	0.488 (0.814)	0 3	0.667 (1.041)	0 4
Observations	2640		1533		1107	
Municipalities	142		84		58	

We capture the technical determinants of the *make-or-buy* decision using the same variables as in the first part of this thesis, namely Contracting difficulty, Uncertainty, and Sensitivity. We also use the same set of Control variables, that is, the size (3 classes), Urban, Mountain, the Dependency Ratio, the Income (FDT yield *p.c.* ), and the Budget Weight (for a complete description of these variables and the way we measure them, see above in Section 2.2). In addition, we are then able to include an additional variable *Debt*, that we proxy using the passive interests as a share of the tax receipts<sup>8</sup>.

As we want to consider cultural factors, it would seem reasonable to consider the dominant religion in the municipality (catholic or protestant). However, as Table 3.2 shows, the distribution of the majority religion in the municipalities of each canton.

<sup>7</sup>*p*-value of the  $\chi^2$  test: 0.35.

<sup>8</sup>We did not use this variable in the first part, as the data were not available for all Cantons.

It points out that Protestant and Catholic areas mostly correspond to canton borders. For this reason, we do not control for religion, as it is captured by canton fixed effects. Including a variable *Religion* would be subject to a strong multicollinearity with the canton fixed effects. Table 3.3 presents the descriptive statistics for all the right hand side variables in the municipalities in the bilingual cantons, that is, in the sub-sample of municipalities that we use in this chapter.

Table 3.2: Majority religion in the municipalities of the bilingual cantons

	BE	FR	VS
Protestant	98.77%	9.76%	0%
Catholic	1.23%	90.24%	100%

Table 3.3: Descriptive statistics for RHS variables

	Mean	Std Dev	Min	Max	Source of the data
<b>City × Service characteristics</b>					
Sensitivity	0.00	1.00	-1.10	1.75	Athias Wicht Municipal survey
Uncertainty	0.00	1.00	-1.17	2.57	Athias Wicht Municipal survey
<b>City characteristics</b>					
Language	French 0.41	German 0.59			Athias Wicht Municipal survey Swiss Federal Statistical Office
Distance (absolute)	20.02	12.76	1.68	52.07	Swisstopo
Size	Small 0.44	Medium 0.38	Big 0.18		Swiss Federal Statistical Office
Urban	Urban 0.39	Rural 0.61			Swiss Federal Statistical Office: “Niveaux géographiques de la Suisse 2012”
Income [kCHF]	1.17	1.40	0.13	12.2	Federal Tax Administration
Dependency ratio	64.79	8.79	22.2	85.3	Swiss Federal Statistical Office
Debt	0.03	0.02	0.00	0.13	State and municipal Finance Offices
Mountain	Yes 0.49	No 0.51			Swiss Federal Statistical Office: “Niveaux géographiques de la Suisse 2012”
<b>Service characteristics</b>					
Budget weight	0.00	1.00	-1.19	2.47	Athias Wicht Restricted survey
Competition	0.00	1.00	-1.28	2.38	Athias Wicht restricted survey

The main novelty in the data used in this chapter is the variables that we use in order to capture the impact of culture. Our explanatory variable capturing culture is a dummy variable taking the value 1 if the official (administrative) language of the municipality is French and 0 if this language is German. For the purpose of our RDD analysis, we also shall consider a variable measuring the distance to the language border. This variable has been constructed using geodata and is defined as the distance to the closest municipality on the other side of the border. This running variable takes positive values for municipalities in the French area, and negative values for German-speaking municipalities.

We also consider the (political) ideological orientation of the municipalities. As already highlighted, a large part of the elected members of local executives do not represent a political party. In our sample of municipalities, 58.3 percent of the members of local executives do not represent a party, that is, they have been elected either as independents or as members of a local non-partisan coalition. In 45 percent of the municipalities, the local executive is composed *exclusively* of non-partisan members.

This strongly reduces the impact of ideology at the local level. As Table 3.4 shows, the party that holds the more mandates is *The Liberals* (21 percent of all seats), followed by the *Swiss People’s Party* (7 percent), the *Christian Democratic Party* (6 percent), and the *Socialist Party* (4 percent). None of the other parties hold more than 2 percent of the seats.

Table 3.4: Political affiliation of the members of local executives

Party	Ideology	Number	Percentage
Non partisan		588	58%
The Liberals (FDP – PLR)	Right	209	21%
Swiss People’s Party (SVP – UDC)	Right	68	7%
Christian Democratic Party (CVP – PDC)	Center-Right	64	6%
Socialist Party (SP – PS)	Left	41	4%
Christian Social Party (CSP – PCS)	Center-Left	25	2%
Conservative Democratic Party (BDP – PBD)	Center-Right	5	0.5%
Evangelist Party (EVP – PEV)	Center-Left	4	0.4%
Federal Democratic Union (EDU – UDF)	Right	2	0.2%
The Greens	Left	3	0.3%

Sample: Municipalities that are present in the Athias-Wicht Survey. Data: Ladner municipal database, completed with other official sources (municipalities and Cantons).

These results show that the relative strength of the parties in local executives strongly diverges from their strength in Federal elections, where the two strongest parties are the *Swiss People’s Party* (29.4 percent of voters) and the *Socialist Party* (18.8 percent of voters). This tends to confirm that the results of the Federal elections are not a suitable proxy for the ideology at a local level. Hence, a measure of the political position of a local executive should integrate the actual composition of the executive, and in particular the fact that it is composed of partisan and/or non-partisan members. In order to account for this fact, we construct a measure that encompasses the actual political affiliation of local executive members.

Information about the party affiliation of the local executive members has been collected from Ladner’s municipal database<sup>9</sup>, and the data that were missing in this database have been completed with data provided by the municipalities and the Cantons.

Ideology of each party is measured using the *Parlarating* data. *Parlarating* is a yearly ranking (constructed by academic scholars) of the ideology of all the members of the National Council based on their roll-call votes. This scale is frequently used by political scientists to quantify the ideology of political parties in Switzerland and is constructed as follows. A set of on topics are selected among all roll-call votes that had been made in the National Council during a given year. Criteria used to select the votes that will be considered are, first, their importance, and second the existence of a clear left-right pattern, that is, the fact that it is possible to attribute the choice made by each councillor to the left or the right. Finally, the most often a councillor chose the left proposition, the most he is considered to be left-winged, and vice-versa. The councillors are ranked on a scale between -10 (left) to +10 (right),

<sup>9</sup>www.andreasladner.ch

and the value 0 corresponds to the center (Hohl and Jeitziner, 2002). Averaging the scores of the members of a same party allows to compare the actual position of the parties (based on votes rather than on slogans or promises), but also to observe across-cantonal differences between the members of a same party. Indeed, in Switzerland, the positions of the members of some parties may significantly differ from one Canton to another<sup>10</sup>.

For the purpose of our study, we consider the rating for the year 2011. We compute for each municipality a score that corresponds to the mean of the Parlarating scores of all members of the local executive. To do this, we attribute to each member of a local executive a value that corresponds to the Parlarating score of her party in her Canton (Table 3.5). We do not differentiate between the mayor and the other members of the executive, as the former has no extended decision power than the other members: his role only consists in presiding the meetings of the executive and representing the municipality. When such a score is not available, which is the case for the smallest parties, we consider instead the Parlarating score for her party in the whole Switzerland. Local executive members that do not represent any political party are not considered and hence do not affect the score of their municipality<sup>11</sup>.

Table 3.5: Parlarating ranking of the parties in each Canton

	Berne	Fribourg	Valais	Switzerland
The Greens	-8.1			-8.2
Socialist Party	-7.0	-7.7	-7.4	-7.8
Evangelist Party	-2.9			-2.7
Christian Democratic Party	0.4	-0.8	0.5	0.4
Christian Social Party	0.4	-7.7	0.5	0.4
Conservative Democratic Party	1.3			1.0
The Liberals	2.3	1.9	1.7	2.2
Swiss People's Party	7.3	7.8	6.9	7.8
Swiss Democratic Union	7.3			7.8

Reported values are the means of the Parlarating scores of the National Councilors that are members of the party. The scale is between -10 (left) and +10 (right), and 0 corresponds to the center.

Finally, we transform this municipal ranking into a categorical variable that takes three possible values: RIGHT if the ranking is bigger than 0, LEFT if the ranking is smaller than 0, and NON-PARTISAN if none of the members of the executive represents a party (which means that the municipal ranking cannot be computed). Summary statistics are reported in Table 3.6. We can observe that about the half of the municipalities have no partisan member. Among the municipalities with partisan executive members, a large majority are right-wing (76 percent of the partisan municipalities). Only 13 percent of the municipalities in our sample (that is, 24 percent of the partisan municipalities) are left-wing.

<sup>10</sup>We are able to consider cantonal variations for members of the Federal Parliament, since the electoral districts are the Cantons.

<sup>11</sup>In 36 percent of the municipalities, the executive is composed of both partisan and non partisan members.

Table 3.6: Distribution of the political variable across the cantons

	Left	Right	Non Part.
<b>Berne</b>	0.098	0.512	0.390
<b>Fribourg</b>	0.122	0.171	0.707
<b>Valais</b>	0.316	0.526	0.158
<b>TOTAL</b>	0.134	0.416	0.451

The reported values are the share of the municipalities of each canton whose position corresponds to each category. All rows sum to 1.

## 3.4 Results

### 3.4.1 RDD Results

Throughout the section, rather than reporting hard-to-interpret coefficients from the logit and multinomial logit models, we report the marginal effects on the choice probabilities.

Figure 3.6 shows a preliminary graphical evidence of the existence of a significant gap at the language border in terms of organizational choices. The figure reports a polynomial fit of the residuals of the OLS regression of the percentage of private contracting on City variables (including Canton fixed effects, without the cultural variable French) as a function of the distance to the language border, as well as 95 percent confidence intervals. This approach allows us to control for municipal characteristics and provides a graphical evidence of the existence of a significant gap at the language border in terms of organizational choices. We can observe a very strong discontinuity at the border, that however tends to vanish when moving further away from the border. This suggests that municipalities located further from the border face more unobserved heterogeneity.

Table 3.7 reports results from the fully specified RDD multinomial logit with different spatial specifications, that is, bandwidths of 20, 25, 30 and 40 km with a linear spatial trend, and 40 km with a quadratic trend.

Our main empirical findings can be summarized as follows. The RDD approach allows us to observe the effect of the language border at *identical* actual set of policies and institutions and at *identical* actual relative efficiency of public and private provision. This effect is substantial: French-speaking border municipalities are around 60 percent less likely to contract with the private sector than their German-speaking adjacent municipalities (recall that on average about 21 percent of services are contracted privately and the estimated probability change is between -11 and -17 percentage points depending on the specification). We do not observe a robust evidence of an impact of the language border in the propensity to contract with the public sector.

Table 3.8 shows the results (coefficient on the French variable) of Logit and Ordered Logit regressions. The first row shows the results of a Logit analysis using Private contracting as the dependent variable (against In-house provision and Public Contracting), hence opposing public provision to private provision. In the second row, we estimate Logit models opposing contracting (public and private) to In-house

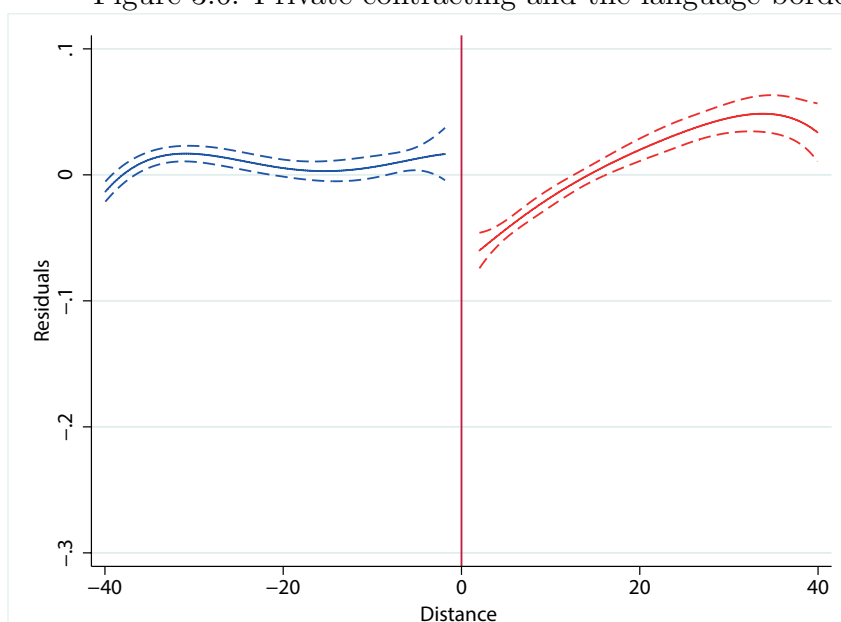
Table 3.7: RDD-Multinomial Logit Models for Frequency of Public and Private Contracting

	20 km		25 km		30 km		40 km		40 km	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
<b>Cultural aspects</b>										
French	0.0702 (0.0524)	-0.1608*** (0.0571)	0.0575 (0.05)	-0.1274** (0.0496)	0.0686 (0.0469)	-0.1049** (0.0518)	0.0562 (0.0455)	-0.0988** (0.0495)	0.0491 (0.0516)	-0.1056 (0.0643)
Dist	-0.0043 (0.0034)	-0.0017 (0.0022)	-0.001 (0.002)	0.0009 (0.0017)	-0.002 (0.0016)	-0.0006 (0.0016)	-0.0017 (0.0013)	0.0002 (0.0013)	-0.0014 (0.0021)	-0.0007 (0.0028)
French × Dist	0.0021 (0.0051)	0.0085* (0.0044)	-0.001 (0.0037)	0.0021 (0.0033)	-0.0017 (0.0032)	0.0025 (0.0028)	-0.001 (0.0024)	0.0028 (0.0027)	-0.0001 (0.0071)	0.0057 (0.0092)
Dist <sup>2</sup>									0 (0.0001)	0 (0.0001)
French × Dist <sup>2</sup>									0 (0.0002)	0 (0.0003)
<b>Technical Factors</b>										
Contracting diff.	0.0914*** (0.0099)	-0.0248** (0.0096)	0.0837*** (0.0089)	-0.0201** (0.0078)	0.0821*** (0.0083)	-0.0237*** (0.0073)	0.0817*** (0.0075)	-0.0237*** (0.0069)	0.0817*** (0.0075)	-0.0237*** (0.0069)
Uncertainty	-0.0086 (0.0168)	0.0677*** (0.0144)	-0.0049 (0.015)	0.0517*** (0.0127)	-0.0058 (0.0139)	0.0494*** (0.0119)	-0.0066 (0.0119)	0.0415*** (0.0119)	-0.0067 (0.0121)	0.0412*** (0.0118)
Sensitivity	-0.0164 (0.0101)	0.0216** (0.0104)	-0.0069 (0.0094)	0.0184* (0.0095)	-0.0084 (0.0089)	0.0192** (0.0091)	-0.0086 (0.0082)	0.0261*** (0.0089)	-0.0085 (0.0082)	0.0258*** (0.0091)
<b>Other Control</b>										
Big	-0.0655 (0.0451)	-0.0563 (0.04)	-0.0686* (0.0408)	-0.0809** (0.0316)	-0.0879** (0.0373)	-0.085*** (0.0298)	-0.0739** (0.0367)	-0.1003*** (0.0266)	-0.0738** (0.0367)	-0.0999*** (0.0268)
Small	0.1107*** (0.0373)	0.0308 (0.0326)	0.1148*** (0.0369)	0.0092 (0.0263)	0.106*** (0.0341)	0.0073 (0.0247)	0.1054*** (0.0307)	-0.0046 (0.0252)	0.1062*** (0.0318)	-0.0024 (0.0256)
Urban	0.0875** (0.0354)	-0.0137 (0.0321)	0.0869*** (0.0323)	-0.0083 (0.03)	0.0768*** (0.0289)	-0.0226 (0.0276)	0.0881*** (0.0294)	-0.0317 (0.0271)	0.089*** (0.0298)	-0.0318 (0.0271)
Mountain	-0.0654* (0.0379)	0.0426 (0.0376)	-0.0619 (0.0394)	0.0381 (0.0299)	-0.0521 (0.0329)	0.0379 (0.0261)	-0.0485 (0.0313)	0.0269 (0.0271)	-0.0491 (0.032)	0.0289 (0.0275)
Demographic Dep. ratio	0.0011 (0.0028)	0.0008 (0.0023)	-0.0016 (0.0023)	0.0035* (0.0021)	-0.0021 (0.0021)	0.0039** (0.0019)	-0.0014 (0.0018)	0.0024 (0.0019)	-0.0014 (0.0018)	0.0024 (0.0019)
Income	0.0712*** (0.0249)	0.0421 (0.0354)	0.0465* (0.0245)	0.0476* (0.0259)	0.0285 (0.0285)	0.0478** (0.0213)	0.029 (0.0289)	0.0494** (0.0231)	0.0291 (0.029)	0.05** (0.0234)
Budget weight	0.0142 (0.0201)	0.0298 (0.0195)	0.0144 (0.0177)	0.028 (0.0171)	0.01 (0.0166)	0.0324** (0.016)	0.0078 (0.0155)	0.0375*** (0.0141)	0.0077 (0.0155)	0.0378*** (0.0141)
Debt	-0.2736 (0.8142)	-0.4258 (0.8521)	-0.3802 (0.6134)	-0.4926 (0.6868)	-0.2381 (0.5507)	-0.3539 (0.6376)	-0.2398 (0.507)	-0.2528 (0.6326)	-0.25 (0.525)	-0.2984 (0.6331)
Executive: Non partisan	0.0241 (0.0408)	-0.0158 (0.0356)	0.0271 (0.037)	-0.0076 (0.0342)	0.0228 (0.0353)	-0.0148 (0.0328)	0.0177 (0.0337)	-0.024 (0.0331)	0.0165 (0.0338)	-0.0245 (0.0331)
Executive: Right	0.0371 (0.0506)	-0.0858** (0.0382)	0.0373 (0.0379)	-0.033 (0.0367)	0.0156 (0.0361)	-0.0223 (0.035)	0.0226 (0.0352)	-0.016 (0.0354)	0.0221 (0.0353)	-0.016 (0.0353)
Observations	1290	1290	1627	1627	1809	1809	2157	2157	2157	2157
Municipalities	72	72	91	91	100	100	120	120	120	120
French/German	39/33	39/33	45/46	45/46	46/54	46/54	50/70	50/70	50/70	50/70

Notes: Reported coefficients are marginal effects on probability of different modes of service provision. In-house provision is the base outcome. Standard errors are clustered at the municipality level. All regressions include State dummies. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .



Figure 3.6: Private contracting and the language border



*Notes:* Residuals of the OLS regression of the Percentage of private provision as a function of City variables, including distance to the border in absolute terms and Canton fixed effects. Kernel-weighted local polynomial smoothing. Dashed lines are 95% confidence intervals. The vertical line indicates the language border.

provision. Whereas we observe that the French-speaking municipalities have a significantly lower propensity to contract-out with the private sector, we observe no impact of the language on contracting in general. These results suggest that Public contracting is closer to in-house provision than to Private contracting. This is in line with the fact that LGAs — which do not pertain to NPM reforms — account for two thirds of the public contracts. The cultural effect also manifests itself when the organizational modes are ranked according to a more continuous qualitative index of incentives power, as suggested by the results — reported in the third and fourth rows — of ordered Logit models in which the dependent variable takes the highest value for Private contracting. These results also suggest that Public contracting distinguishes itself more clearly from in-house when considering the degree of incentives power. Note that the difference between In-House provision and Public contracting tends to be larger when LGAs are removed from the sample, that is, when Public contracting only consists in actual *contracts* (row 4).

Regarding the efficiency-based predictions, our results are in line with the results that we obtained in the first part. In particular, we still observe that greater contracting difficulty is associated with more public contracting and less private sector contracting, with slightly larger marginal effects: a one standard deviation increase in contracting difficulty leads to 11 percent less contracting-out and 8 percent more contracting-in. Regarding Uncertainty and Sensitivity, we still observe a positive impact on private contracting. As for contracting difficulty, the magnitude of the effect is substantially larger. The impact on public contracting is still negative, albeit it

Table 3.8: Logit and Ordered Logit Estimations for the French variable

Method	Dep. Var.	City $\times$ Service	Sector FE	Service FE
Logit	Private (vs. Public)	-0.1536*** (0.0504)	-0.1236** (0.0618)	-0.1264* (0.0652)
Logit	Contracting (vs. In-house)	-.0880 (0.014)	-.0332 (0.0873)	-0.042 (0.1075)
Ord. Logit	In-house < Public < Private	-0.506* (0.298)	-0.362 (0.322)	-0.365 (0.347)
Ord. Logit	In-house < Public (non LGA) < Private	-0.709** (0.343)	-0.471 (0.372)	-0.660 (0.417)

*Notes:* \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . 20 km Bandwidth. All regressions contain following RHS variables: Distance, French  $\times$  Distance, Size (3 classes), Urban, Mountain, Demographic Dep. Ratio, Income, Debt, Political ideology (3 classes). Additional control variables: Contracting difficulty, Uncertainty, Sensitivity (col. 1), Sector dummies (col. 2), Service dummies (col. 3). **Ord. Logit:** Reported coefficients are log odd ratios. Robust standard errors are clustered at the municipality level. **Logit:** Reported coefficients are marginal effects. **Robust standard errors are clustered at the service and municipality level.**

becomes not significant. The impact of the size of the municipalities also remains unchanged: big municipalities contract less with both the public and the private sector, whereas the smallest municipalities do more public contracting. Our new control variable *Debt* shows no significant impact on contracting, both public and private. This suggests that the municipalities do not use contracting as a means to circumvent the budget constraint or restrictions in the number of employees. Finally, the political color of the municipality do not affect the organizational choices.

### 3.4.2 Robustness checks

#### Service and sector fixed effects

As robustness checks, we estimate our Multinomial logit model replacing all service and city $\times$ service variables by sector<sup>12</sup> and service fixed effects. This allows us to tackle the issue of a potential dependence between the survey measures of city-service characteristics and the actual organizational choices. Estimations are shown in Tables 3.9 and 3.10. Albeit this approach has its own weaknesses, to the extent that some service-related parameters vary from one municipality to another, the results are still in line with our baseline model: the impact of the French variable, while significant only at some bandwidth, is however negative at all bandwidths, both for the model with sector fixed effects and in the model with service fixed effects. These results hence suggest that the effect of culture tends to vanish with larger bandwidth, which suggests that unobserved heterogeneity may appear when moving away from the border. In particular, whereas it seems reasonable to assume that the market structures are identical within German- and French-speaking municipalities located

<sup>12</sup>We consider 4 sectors based on the official accounting plan of Swiss municipalities, namely Education (Child day-care centres, School canteen, Specialized services in school, Maintenance of school buildings), Environment (7 services: Refuse collection, Solid waste disposal, Animal carcasses removal, Drinking water distribution, Maintenance of water facilities, Sewage treatment, Cemeteries), Traffic (6 services: Snow cleaning, Road cleaning, Road maintenance, Parking control, Street lights, Public transportation), and Green and Nature (2 services: Local parks and gardens, Trimming of trees)

close to the border, a bigger segmentation is possible when moving away from the border, due to the fact that transportation costs become significant when the distance increases.

### **Selection bias**

In order to check whether our results are biased by sample selection, we estimate a Probit model of the determinants of Private provision including the Heckman correction. Initially developed in the case of a continuous dependent variable by Heckman (1974; 1977) and applied to binary dependent variables by Van de Ven and van Praag (1981), this method consist in the estimation of a two stage model, namely the estimation of two probit equations: the selection equation and the substantial equation. The former measures the probability that a given observation (in our case, a municipality) belongs to the sample (in our case, the fact that the municipality has answered to our survey). This equation allows to generate a correction factor that will be used in the substantial equation, which measures the determinants of the dependent variable (in our case the fact that a pair City×Service is provided by the private sector). The results of this analysis, shown in Table 3.11, suggest that our results are robust to the correction of an eventual selection bias.

Table 3.9: RDD-Multinomial Logit Models for Frequency of Public and Private Contracting, with sector FE

	20 km		25 km		30 km		40 km		40 km	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
French	0.0913* (0.0545)	-0.1236** (0.0618)	0.0644 (0.0498)	-0.1045* (0.0533)	0.0702 (0.0463)	-0.0888* (0.0538)	0.0531 (0.0474)	-0.0783 (0.052)	0.0651 (0.055)	-0.0946 (0.0678)
Distance	-0.0034 (0.0035)	-0.0032 (0.0023)	-0.0011 (0.0021)	0.0002 (0.0017)	-0.0017 (0.0017)	-0.0016 (0.0016)	-0.0018 (0.0015)	-0.0005 (0.0013)	-0.0006 (0.002)	-0.0022 (0.0025)
French × Distance	-0.0019 (0.0052)	0.0115** (0.005)	-0.0024 (0.0038)	0.0038 (0.0038)	-0.0028 (0.0032)	0.0056* (0.0031)	-0.001 (0.0027)	0.0041 (0.0029)	-0.0052 (0.0074)	0.0101 (0.01)
Distance <sup>2</sup>							0 (0.0001)		0 (0.0001)	-0.0001 (0.0001)
French × Dist. <sup>2</sup>							0 (0.0003)		0 (0.0002)	-0.0001 (0.0003)
Big	-0.0648 (0.0471)	-0.0908** (0.0406)	-0.0679 (0.0424)	-0.1068*** (0.031)	-0.0838** (0.0392)	-0.1116*** (0.0287)	-0.0809** (0.0357)	-0.1199*** (0.0262)	-0.0821** (0.0356)	-0.1191*** (0.0265)
Small	0.1019** (0.0401)	0.0458 (0.0377)	0.117*** (0.0399)	0.0221 (0.0299)	0.1076*** (0.0364)	0.0206 (0.0273)	0.1109*** (0.0332)	0.0045 (0.0269)	0.1076*** (0.034)	0.009 (0.0265)
Urban	0.1121*** (0.039)	-0.0132 (0.0386)	0.1062*** (0.0343)	-0.0103 (0.0355)	0.0957*** (0.03)	-0.0262 (0.0315)	0.1106*** (0.0316)	-0.0413 (0.0303)	0.1106*** (0.0321)	-0.0417 (0.0304)
Mountain	-0.0885** (0.0403)	0.0083 (0.0413)	-0.0803** (0.0394)	0.0101 (0.0324)	-0.0679** (0.0328)	0.025 (0.028)	-0.0625** (0.0312)	0.0197 (0.0288)	-0.0662** (0.0321)	0.0236 (0.029)
Dep. Ratio	0.0026 (0.003)	0.002 (0.0025)	-0.0001 (0.0024)	0.0039* (0.0022)	-0.0008 (0.0021)	0.0033* (0.0019)	0.0001 (0.0019)	0.0017 (0.0019)	0.0001 (0.002)	0.0017 (0.0019)
Income	0.0637** (0.0251)	0.0551* (0.0314)	0.0402 (0.0275)	0.0531** (0.0228)	0.0216 (0.0319)	0.0492** (0.0194)	0.0255 (0.0314)	0.0482** (0.0201)	0.0249 (0.0328)	0.0491** (0.0211)
Debt	-0.2773 (0.7835)	-0.1618 (0.9487)	-0.4456 (0.6074)	-0.2414 (0.7366)	-0.3984 (0.5428)	-0.2534 (0.6813)	-0.4059 (0.5065)	-0.1906 (0.6647)	-0.3234 (0.5227)	-0.2998 (0.6686)
Executive: Non partisan	0.0409 (0.0434)	-0.0418 (0.0422)	0.0362 (0.0385)	-0.0334 (0.0369)	0.0273 (0.0358)	-0.0364 (0.0347)	0.0204 (0.034)	-0.0417 (0.0346)	0.0213 (0.034)	-0.0431 (0.0347)
Executive: Right	0.0584 (0.0495)	-0.0833* (0.0453)	0.0436 (0.0389)	-0.0502 (0.0415)	0.0227 (0.0369)	-0.0414 (0.039)	0.0312 (0.0362)	-0.041 (0.0384)	0.0322 (0.0361)	-0.0413 (0.0383)

Notes: Reported coefficients are marginal effects on probability of different modes of service provision. In-house provision is the base outcome. Standard errors are clustered at the municipality level. All regressions include State dummies and Sector dummies (4 sectors: Education, Environment, Traffic, Green and Nature). \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Table 3.10: RDD-Multinomial Logit Models for Frequency of Public and Private Contracting, with service FE

	20 km		25 km		30 km		40 km		40 km Quadratic	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
French	0.0873* (0.0523)	-0.1378* (0.0751)	0.0673 (0.0502)	-0.1147* (0.0626)	0.0827* (0.0478)	-0.0912 (0.0631)	0.07 (0.0475)	-0.0806 (0.0624)	0.0609 (0.056)	-0.1893** (0.0953)
Distance	-0.0043 (0.0033)	-0.0043 (0.0028)	-0.0012 (0.002)	-0.0001 (0.0019)	-0.0022 (0.0016)	-0.002 (0.0018)	-0.0019 (0.0014)	-0.0007 (0.0015)	-0.0021 (0.0019)	-0.0013 (0.0024)
French × Distance	0.0021 (0.0051)	0.0143** (0.0056)	-0.0002 (0.0036)	0.0052 (0.0039)	-0.001 (0.0032)	0.0057* (0.0033)	-0.0003 (0.0025)	0.0044 (0.0034)	0.0023 (0.0115)	0.023 (0.0146)
Distance <sup>2</sup>									0 (0.0001)	-0.0001 (0.0001)
French × Distance <sup>2</sup>									0 (0.0005)	-0.0006 (0.0005)
Big	-0.0592 (0.044)	-0.0729 (0.0476)	-0.0665* (0.0361)	-0.0922*** (0.0338)	-0.0822** (0.0328)	-0.1*** (0.0318)	-0.0746** (0.0316)	-0.1099*** (0.0286)	-0.0663* (0.0362)	-0.0912*** (0.0337)
Small	0.1111*** (0.0406)	0.0543 (0.0421)	0.1155*** (0.0402)	0.0286 (0.0322)	0.1057*** (0.0373)	0.0268 (0.0303)	0.1047*** (0.0332)	0.0065 (0.0303)	0.1178*** (0.0415)	0.0395 (0.0335)
Urban	0.0999** (0.0398)	-0.0042 (0.0425)	0.0946*** (0.0348)	-0.0003 (0.0374)	0.081*** (0.0305)	-0.0161 (0.0339)	0.0935*** (0.0323)	-0.0279 (0.0328)	0.095*** (0.0349)	0.0026 (0.0374)
Mountain	-0.0779** (0.0396)	0.0066 (0.0475)	-0.0735* (0.038)	0.013 (0.0372)	-0.0615* (0.0323)	0.0171 (0.0321)	-0.0593* (0.0311)	0.0113 (0.0329)	-0.0744* (0.0386)	0.0081 (0.0365)
Demographic Dep. Ratio	0.0013 (0.0028)	0.0025 (0.0029)	-0.001 (0.0022)	0.0045* (0.0025)	-0.0017 (0.002)	0.0046** (0.0023)	-0.0009 (0.0018)	0.0027 (0.0023)	-0.001 (0.0018)	0.0047* (0.0026)
Income	0.0713*** (0.0248)	0.0663* (0.0347)	0.0481* (0.0265)	0.0622** (0.0246)	0.0274 (0.0318)	0.06*** (0.021)	0.0289 (0.0324)	0.0595*** (0.023)	0.0503* (0.0272)	0.0634** (0.0286)
Debt	-0.4337 (0.8086)	-0.2538 (1.0406)	-0.4626 (0.5841)	-0.3878 (0.7847)	-0.342 (0.5204)	-0.2708 (0.7534)	-0.2923 (0.4837)	-0.1652 (0.7564)	-0.4666 (0.5904)	-0.3595 (0.7832)
Executive: Non partisan	0.0284 (0.0427)	-0.0323 (0.0475)	0.0245 (0.0379)	-0.0212 (0.042)	0.0197 (0.0357)	-0.0215 (0.0397)	0.0134 (0.0344)	-0.029 (0.0393)	0.0238 (0.0372)	-0.0236 (0.0419)
Executive: Right	0.0396 (0.0522)	-0.0798 (0.0506)	0.0356 (0.0381)	-0.0316 (0.0439)	0.017 (0.0357)	-0.0204 (0.0357)	0.0259 (0.0357)	-0.0191 (0.0357)	0.034 (0.0357)	-0.0322 (0.0357)
Observations	1290	1290	1627	1627	1809	1809	2157	2157	2157	2157
Municipalities	72	72	91	91	100	100	120	120	120	120
French/German	39/33	39/33	45/46	45/46	46/54	46/54	50/70	50/70	50/70	50/70

Notes: Reported coefficients are marginal effects on probability of different modes of service provision. In-house provision is the base outcome. Standard errors are clustered at the municipality level. All regressions include State dummies and Service dummies. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Table 3.11: RDD-Probit model with Heckman correction

	Private
French	-0.606* (0.316)
Distance	0.00299 (0.0176)
French $\times$ Dist.	0.0219 (0.0267)
Contr. Diff.	-0.0191 (0.0122)
Uncertainty	0.0569*** (0.0189)
Sensitivity	0.0221** (0.0107)
Big	-0.380 (0.312)
Small	0.448*** (0.167)
Urban	0.146 (0.176)
Mountain	0.222 (0.161)
Demographic Dep. Ratio	-0.000738 (0.00121)
Income	0.0591 (0.119)
Budget Weight	0.0198 (0.0208)
Debt	-0.569 (0.655)
Executive: Non partisan	-0.0143 (0.0355)
Executive: Right	-0.0892** (0.0406)
Constant	0.808*** (0.292)
Observations	6,696

*Notes:* \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . Dependent variable: Private contracting (dummy). Regressions include State dummies. Probit model with Heckman correction. Bandwidth: 20 km. Standard errors are clustered at the municipality level.

### 3.4.3 Ruling out a Cultural Bias

As the culture variable might not be orthogonal to the technical variables, it introduces a potential bias in the municipality choices. To check whether it is the case, we show estimations of our multinomial logit model of the determinants of the *make-or-buy* decision, where we added interactions of the technical variables with the FRENCH variable (Table 3.12). Results indicate that there is no cultural bias in the *make-or-buy* choices.

Table 3.12: RDD-Multinomial Logit Models and Cultural Bias

	20 km Linear		20 km Linear		20 km Linear	
	Public	Private	Public	Private	Public	Private
<b><i>Cultural aspects</i></b>						
French	0.0643 (0.0522)	-0.152*** (0.0586)	0.0815 (0.0534)	-0.1608*** (0.0558)	0.0702 (0.0525)	-0.1608*** (0.0573)
Distance	-0.0043 (0.0033)	-0.0017 (0.0022)	-0.0048 (0.0034)	-0.0017 (0.0022)	-0.0043 (0.0034)	-0.0017 (0.0022)
French×Distance	0.002 (0.0051)	0.0085* (0.0044)	0.0023 (0.0052)	0.0086* (0.0044)	0.0021 (0.0051)	0.0085* (0.0044)
<b><i>Technical factors</i></b>						
French × Contr. Diff.	0.0201 (0.0159)	0.0094 (0.0143)				
French × Uncertainty			0.0448 (0.0311)	-0.0079 (0.0252)		
French × Sensitivity					0.0001 (0.0192)	0.0001 (0.0179)
Contr. Diff.	0.0812*** (0.0125)	-0.0295** (0.0118)	0.0918*** (0.0099)	-0.0247** (0.0096)	0.0914*** (0.0099)	-0.0248** (0.0096)
Uncertainty	-0.0095 (0.017)	0.0676*** (0.0143)	-0.0337 (0.0259)	0.0728*** (0.0197)	-0.0086 (0.0168)	0.0677*** (0.0143)
Sensitivity	-0.0155 (0.0101)	0.0222** (0.0105)	-0.0157 (0.0101)	0.0216** (0.0105)	-0.0164 (0.0161)	0.0216 (0.0143)
<b><i>Other controls</i></b>						
Big	-0.0651 (0.0445)	-0.0561 (0.0401)	-0.0623 (0.0467)	-0.0566 (0.0398)	-0.0655 (0.0452)	-0.0563 (0.0401)
Small	0.1116*** (0.037)	0.0308 (0.0326)	0.1111*** (0.0369)	0.031 (0.0325)	0.1107*** (0.0371)	0.0308 (0.0326)
Urban	0.0886** (0.0351)	-0.0138 (0.0321)	0.0865** (0.0357)	-0.0134 (0.0321)	0.0875** (0.035)	-0.0137 (0.0317)
Mountain	-0.0673* (0.0378)	0.0421 (0.0376)	-0.0722* (0.0381)	0.0441 (0.0377)	-0.0654* (0.0379)	0.0426 (0.0376)
Demographic Dep. Ratio	0.0013 (0.0028)	0.0008 (0.0023)	0.0014 (0.0028)	0.0008 (0.0023)	0.0011 (0.0028)	0.0008 (0.0023)
Income	0.0727*** (0.0255)	0.042 (0.0355)	0.071*** (0.0256)	0.0437 (0.036)	0.0712*** (0.0251)	0.0421 (0.0353)
Budget weight	0.0129 (0.02)	0.0288 (0.0196)	0.011 (0.0203)	0.0306 (0.0195)	0.0142 (0.0201)	0.0298 (0.0194)
Debt	-0.2461 (0.8216)	-0.4316 (0.8551)	-0.2943 (0.8237)	-0.398 (0.8457)	-0.2738 (0.8102)	-0.4259 (0.8512)
Executive: Right	0.0258 (0.0412)	-0.0158 (0.0356)	0.0215 (0.0406)	-0.0147 (0.0354)	0.0241 (0.0411)	-0.0158 (0.0355)
Executive: Non partisan	0.0386 (0.0507)	-0.0859** (0.0381)	0.0356 (0.0511)	-0.0861** (0.038)	0.0371 (0.0505)	-0.0858** (0.0384)
Observations	1290	1290	1290	1290	1290	1290
Municipalities	72	72	72	72	72	72
French/German	39/33	39/33	39/33	39/33	39/33	39/33

*Notes:* Reported coefficients are marginal effects on probability of different modes of service provision. In-house provision is the base outcome. Standard errors are clustered at the municipality level. All regressions include State dummies. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

### 3.4.4 Ruling out spatial difference in the marginal effect of culture: A differences-in-differences strategy

The fact that the magnitude of the impact of the language border estimated with our RDD models tends to decrease with the bandwidth (albeit it is still significant) may signify that the cultural gap is less strong for municipalities that are not located directly at the border. In order to test whether the effect of culture is above all a border effect, we use a difference-in-differences strategy consisting in estimating if municipalities located within 20 km on either side of the language border (treatment group) behave differently from municipalities whose distance from the language border is bigger than 20 km (counterfactual municipalities).

As in the baseline RDD model, we use a Multinomial Logit approach in order to compare the probability that municipality  $i$  provides service  $j$  using the provision mode  $m \in \{\text{Private contracting, Public contracting}\}$  against the base category *InHouse*:

$$\ln \left[ \frac{\Pr(Y_{ij} = m)}{\Pr(Y_{ij} = \text{InHouse})} \right] = \alpha_{lm} + \beta_m F_i + \gamma_m \text{Border}_i + \delta_m F_i \times \text{Border}_i + \mathbf{X}'_{ij} \zeta_m + \epsilon_{ijm}, \forall m, \quad (3.2)$$

where  $F_i$  is a dummy taking the value 1 if the municipality  $i$  is French-speaking,  $\text{Border}_i$  is a dummy taking the value 1 if the municipality  $i$  is located closer than 20 kilometers from the language border, and  $\mathbf{X}'_{ij}$  is a vector of controls, including Service dummies, City variables and canton fixed effects.  $m$  is the set of the three possible modes of provision and  $j$  is the set of 22 services.

The coefficient  $\beta$  measures the impact of being French-speaking for municipalities located outside the border area. The coefficient  $\gamma$  compares German-speaking municipalities inside and outside the border area. Finally,  $\delta$  is the difference-in-differences estimator.

The estimations of this model, as well as a Logit model opposing private to public provision, are reported in Table 3.13. The fact that the coefficient of the variable French is negative for Private contracting suggests that the cultural effect still exists for municipalities located further from the border. Finally, the fact that the interaction term has no significant effect suggests that the cultural effect is not confined to the border. This analysis suggests that the cultural impact is the same for municipalities inside and outside the border area.



Table 3.13: Spatial differences in the marginal effect: Differences-in-differences

	Multinomial Logit		Logit
	Public	Private	Private
French	0.0745 (0.1124)	-0.2513** (0.1064)	-0.2254*** (0.0831)
Border	0.012 (0.0498)	-0.0473 (0.0614)	-0.0452 (0.0504)
French $\times$ Border	-0.0248 (0.074)	0.1766 (0.1101)	0.1598 (0.0984)
Observations	2343	2343	2343
Municipalities	131	131	131

*Notes:* \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . All regressions include State dummies. Other controls: Service Fixed Effects, Size (3 classes), Mountain, Urban, Income, Debt, Demographic Dep. Ratio, Ideology (3 classes). Border20 is a dummy that takes the value 1 if the municipality is located closer than 20 km from the border. **MLogit:** Reported coefficients are marginal effects on probability of different modes of service provision. In-house provision is the base outcome. Robust standard errors are clustered at the municipality level. **Logit:** Reported coefficients are marginal effects on probability of private contracting. Standard errors are clustered at the municipality and service levels.

### 3.5 Pinning down the exact channel: analysis of public expenditure

In section 5.3, we have shown that culture is a major determinant of the organizational choices for the provision of local public services in Switzerland, and that municipalities in the French-speaking area 60 percent less prone to contract-out with the private sector to provide a given public service. Three possible channels may explain these results. First, the effect of culture might be mediated by differences in terms of unemployment, in line with the study of Eugster et al. (2016) who showed substantial differences between the French- and German-speaking areas in terms of attitudes towards work and job search. Secondly, the culture effect could be due to a corruption differential, in line with the study of Fisman and Miguel (2007). Finally, this result might also be explained by differences in terms of preferences. The goal of this section is hence to assess the consequences of contracting decisions in order to pin down the exact channel.

Our measure of the municipal expenditure considers the total expenditure in the three categories *Expenditure for Personnel* (salaries and contributions to the social security scheme), *Purchase of goods and services*, and *Contribution to other public entities*. Doing so, our variable is cleaned-up from several expenditure on which the municipality has no control (*e.g.* social grants that are determined by cantonal and federal norms, and consequences of past decisions (interests, depreciations)). Table 3.14 presents the descriptive statistics for the new variables used in this section.

Table 3.14: Descriptive statistics

	Mean	Std. Dev.	Min	Max
Expenditure <i>p.c.</i>	2648.07	1007.28	905.66	16568.45
Pc In-House	0.4805	0.2103	0	1
Pc Public Contr.	0.2426	0.1615	0	0.7143
Pc Private Contr.	0.2768	0.1835	0	0.8000

We estimate the following RDD model:

$$\ln y_{it} = \alpha_i + \delta French_i + \sum_{k=1}^2 \beta_{lk} D_i^k + \sum_{k=1}^2 \beta_{rk} D_i^k \times French_i + \theta PrInhouse_i + \gamma PrInhouse_i \times French_i + \mathbf{X}'_{it} \eta + \mathbf{Provided}'_i \zeta + \lambda_t + \epsilon_{it} \quad (3.3)$$

where  $y_{it}$  is the *per capita* spending related to purchases of goods and services, wage, and payments to other public authorities. Two variables are constructed based on the Athias-Wicht municipal survey:  $PrInhouse_i$  is the fraction of the services provided that are provided in-house in municipality  $i$ <sup>13</sup>,  $\mathbf{Provided}'_i$  is a vector of dummies taking the value 1 if the service  $j$  is provided in municipality  $i$  (whatever the mode of provision). Finally  $\mathbf{X}'_{it}$  is a vector of other municipality controls (including canton fixed effects), and  $\lambda_t$  is a year fixed effect.

The coefficients can be interpreted as follows:  $\delta$  measures the public spending *p.c.* differential between border French and German-speaking municipalities when contracting ( $PrInhouse = 0$ ).  $\theta$  measures the public spending *p.c.* differential among German-speaking municipalities according to their propensity to provide in-house.  $\gamma$  measures the public spending *p.c.* differential between French and German-speaking municipalities according to their propensity to provide in-house, comparatively to their public spending *p.c.* differential when contracting. Finally,  $\delta + \gamma$  measures the public spending *p.c.* differential between French and German-speaking municipalities according to their propensity to provide in-house. We also estimate the same model without spatial trend.

Table 3.15 reports the estimations of this model at different bandwidths. The fact that  $\gamma$  — the coefficient of the interaction term — is negative shows that In-House provision is more efficient on the French side of the language border. A 10-percent increase of the number of services provided in-house leads to a reduction of the differential in terms of public spending per capita when contracting (that is, when the  $PrInHouse$  variable takes the value 0) of about 10 percentage points.

The negative sign of the French coefficient  $\delta$  suggests that contracting (public or private) increases the public spending differential between the French- and German-speaking areas.

Finally, the positive sign of the  $PrInHouse$  coefficient  $\theta$  shows for its part that

<sup>13</sup>This variable does not vary over time, which is in line with the fact that it is culturally determined.

In-House provision tends to increase the public spendings per capita in the German area (albeit this result is weakly significant).

Whereas this result may suggest that French-speaking municipalities have a comparative advantage for In-House provision and German-speaking municipalities have a comparative advantage for contracting-out, the results of a similar model considering the percentage of public contracting rather than the percentage of in-house provision (Table 3.16) show that it is not the case. Indeed the positive sign of the interaction variable  $\gamma$  suggests that public contracting is *less* efficient in the French-speaking area than in the German-speaking municipalities. In addition, we do not observe a similar impact when considering private contracting (Table 3.17). These results are confirmed when we run the same regressions without RDD (Tables 3.18, 3.19, and 3.20).

These results show that In-house provision is more efficient in the French area. Hence, these results are totally in line with the fact that French-speaking municipalities do more in-house provision whereas German-speaking municipalities do more contracting. This suggests that our results might be explained by mission-matching. Indeed, mission-matching is expected to lead to productivity gains. The next chapter will define more precisely the meaning of *being motivated*. Then, we shall verify that motivation is systematically different in both language areas.

Table 3.15: Effects of In-House versus contracting within and across culture (RDD)

Dep. Var.: Ln(Spendings <i>p.c.</i> ) Bandwidth	20 km Linear	25 km Linear	30 km Linear	40 km Linear	40 km Quadratic
French	0.466** (0.215)	0.423** (0.170)	0.341** (0.158)	0.277* (0.153)	0.409** (0.199)
Distance	0.0201** (0.00765)	0.00322 (0.00404)	0.00816** (0.00382)	0.00773** (0.00319)	0.00156 (0.00956)
French $\times$ Distance	-0.0390** (0.0158)	-0.0168* (0.00930)	-0.0148* (0.00790)	-0.00930* (0.00489)	-0.0189 (0.0213)
Distance <sup>2</sup>					-0.000168 (0.000229)
French $\times$ Dist. <sup>2</sup>					0.000580 (0.000522)
Pr. In House	0.266 (0.209)	0.262 (0.172)	0.297* (0.163)	0.286* (0.154)	0.282* (0.155)
French $\times$ Pr. InHouse	-0.962*** (0.318)	-0.891*** (0.257)	-0.805*** (0.228)	-0.703*** (0.224)	-0.711*** (0.225)
Big	0.0503 (0.108)	0.0433 (0.0890)	0.0732 (0.0914)	0.0177 (0.0824)	0.0121 (0.0831)
Small	-0.266*** (0.0897)	-0.196*** (0.0719)	-0.177*** (0.0653)	-0.149*** (0.0547)	-0.151*** (0.0569)
Urban	0.267* (0.155)	0.277*** (0.0906)	0.239*** (0.0680)	0.202*** (0.0551)	0.222*** (0.0618)
Income	5.95e-05 (6.54e-05)	0.000108* (6.35e-05)	0.000113* (5.81e-05)	0.000140** (5.85e-05)	0.000139** (5.72e-05)
Mountain	0.0342 (0.117)	0.0461 (0.0593)	0.0830 (0.0573)	0.0719 (0.0519)	0.0633 (0.0512)
Debt	-1.504 (1.298)	0.688 (1.170)	0.320 (1.364)	0.745 (1.358)	0.806 (1.272)
Demographic Dep. Ratio	0.0608 (0.493)	-0.284 (0.303)	-0.324 (0.270)	-0.186 (0.271)	-0.204 (0.278)
Non partisan	0.119 (0.0856)	0.144** (0.0623)	0.129** (0.0587)	0.0723 (0.0619)	0.0843 (0.0614)
Right	0.0533 (0.0971)	-0.0115 (0.0680)	-0.0263 (0.0624)	-0.0549 (0.0603)	-0.0487 (0.0591)
Constant	7.191*** (1.057)	7.891*** (0.636)	7.544*** (0.507)	7.598*** (0.411)	7.501*** (0.424)
Observations	138	178	200	250	250
R-squared	0.712	0.632	0.603	0.550	0.556

Notes: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . Robust Standard errors clustered at the city level in parentheses. OLS estimations for the years 2013 and 2014. Additional control: dummy variables for each service (1 if the service is provided in the mun.). All regressions include Canton fixed effects and a year dummy.

Table 3.16: Effects of public contracting within and across culture (RDD)

Dep. Var.: Ln(Spendings <i>p.c.</i> )	20 km	25 km	30 km	40 km	40 km
Bandwidth	Linear	Linear	Linear	Linear	Quadratic
French	-0.347*	-0.290*	-0.274*	-0.217*	-0.106
	(0.196)	(0.161)	(0.148)	(0.123)	(0.140)
Distance	0.0233***	0.00256	0.00845**	0.00722**	0.00276
	(0.00816)	(0.00419)	(0.00399)	(0.00329)	(0.00969)
French × Distance	-0.0349**	-0.0118	-0.0120	-0.00674	-0.0159
	(0.0137)	(0.00904)	(0.00807)	(0.00499)	(0.0203)
Distance <sup>2</sup>					-0.000123
					(0.000231)
French × Dist. <sup>2</sup>					0.000481
					(0.000507)
Pr. Publ. Contr	-0.0294	-0.0330	-0.0374	-0.0305	-0.0132
	(0.288)	(0.234)	(0.235)	(0.198)	(0.203)
French × Pr. Publ. Contr	1.120**	0.856**	0.601	0.423	0.388
	(0.451)	(0.387)	(0.391)	(0.306)	(0.296)
Big	0.000933	0.0588	0.107	0.0370	0.0339
	(0.0890)	(0.0837)	(0.0894)	(0.0823)	(0.0826)
Small	-0.279***	-0.200**	-0.178**	-0.144**	-0.145**
	(0.0894)	(0.0768)	(0.0681)	(0.0583)	(0.0598)
Mountain	0.275*	0.282***	0.231***	0.189***	0.204***
	(0.157)	(0.0936)	(0.0748)	(0.0602)	(0.0660)
Income	7.24e-05	0.000143*	0.000139**	0.000158***	0.000159***
	(6.10e-05)	(7.19e-05)	(6.07e-05)	(5.69e-05)	(5.60e-05)
Urban	-0.00943	0.0378	0.0726	0.0655	0.0560
	(0.125)	(0.0785)	(0.0748)	(0.0670)	(0.0676)
Debt	-1.862	0.776	0.423	0.761	0.824
	(1.459)	(1.360)	(1.542)	(1.511)	(1.451)
Demographic Dep. Ratio	0.208	-0.167	-0.207	-0.0563	-0.0613
	(0.451)	(0.322)	(0.291)	(0.286)	(0.291)
Non partisan	0.0383	0.0955	0.0942	0.0391	0.0466
	(0.0922)	(0.0680)	(0.0638)	(0.0670)	(0.0670)
Right	-0.00353	-0.0539	-0.0599	-0.0825	-0.0804
	(0.105)	(0.0750)	(0.0686)	(0.0693)	(0.0686)
Constant	7.243***	8.185***	7.964***	7.860***	7.791***
	(0.990)	(0.662)	(0.555)	(0.478)	(0.495)
Observations	138	178	200	250	250
R-squared	0.719	0.615	0.576	0.520	0.524

Notes: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . Robust Standard errors clustered at the city level in parentheses. OLS estimations for the years 2013 and 2014. Additional control: dummy variables for each service (1 if the service is provided in the mun.). All regressions include Canton fixed effects and a year dummy.

Table 3.17: Effects of private contracting within and across culture (RDD)

Dep. Var.: Ln(Spendings <i>p.c.</i> )	20 km	25 km	30 km	40 km	40 km
Bandwidth	Linear	Linear	Linear	Linear	Quadratic
French	-0.347*	-0.290*	-0.274*	-0.217*	-0.106
	(0.196)	(0.161)	(0.148)	(0.123)	(0.140)
Distance	0.0233***	0.00256	0.00845**	0.00722**	0.00276
	(0.00816)	(0.00419)	(0.00399)	(0.00329)	(0.00969)
French × Distance	-0.0349**	-0.0118	-0.0120	-0.00674	-0.0159
	(0.0137)	(0.00904)	(0.00807)	(0.00499)	(0.0203)
Distance <sup>2</sup>					-0.000123
					(0.000231)
French × Dist. <sup>2</sup>					0.000481
					(0.000507)
Pr. Private Contr	-0.0294	-0.0330	-0.0374	-0.0305	-0.0132
	(0.288)	(0.234)	(0.235)	(0.198)	(0.203)
French × Pr. Private Contr.	1.120**	0.856**	0.601	0.423	0.388
	(0.451)	(0.387)	(0.391)	(0.306)	(0.296)
Big	0.000933	0.0588	0.107	0.0370	0.0339
	(0.0890)	(0.0837)	(0.0894)	(0.0823)	(0.0826)
Small	-0.279***	-0.200**	-0.178**	-0.144**	-0.145**
	(0.0894)	(0.0768)	(0.0681)	(0.0583)	(0.0598)
Mountain	0.275*	0.282***	0.231***	0.189***	0.204***
	(0.157)	(0.0936)	(0.0748)	(0.0602)	(0.0660)
Income	7.24e-05	0.000143*	0.000139**	0.000158***	0.000159***
	(6.10e-05)	(7.19e-05)	(6.07e-05)	(5.69e-05)	(5.60e-05)
Urban	-0.00943	0.0378	0.0726	0.0655	0.0560
	(0.125)	(0.0785)	(0.0748)	(0.0670)	(0.0676)
Debt	-1.862	0.776	0.423	0.761	0.824
	(1.459)	(1.360)	(1.542)	(1.511)	(1.451)
Demographic Dep. Ratio	0.208	-0.167	-0.207	-0.0563	-0.0613
	(0.451)	(0.322)	(0.291)	(0.286)	(0.291)
Non partisan	0.0383	0.0955	0.0942	0.0391	0.0466
	(0.0922)	(0.0680)	(0.0638)	(0.0670)	(0.0670)
Right	-0.00353	-0.0539	-0.0599	-0.0825	-0.0804
	(0.105)	(0.0750)	(0.0686)	(0.0693)	(0.0686)
Constant	7.243***	8.185***	7.964***	7.860***	7.791***
	(0.990)	(0.662)	(0.555)	(0.478)	(0.495)
Observations	138	178	200	250	250
R-squared	0.719	0.615	0.576	0.520	0.524

Notes: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . Robust Standard errors clustered at the city level in parentheses. OLS estimations for the years 2013 and 2014. Additional control: dummy variables for each service (1 if the service is provided in the mun.). All regressions include Canton fixed effects and a year dummy.

Table 3.18: Effects of In-House versus contracting within and across culture (non RDD)

Dep. Var.: Ln(Spendings <i>p.c.</i> )				
Subsample	20 km	25 km	30 km	40 km
French	0.401*	0.270*	0.366**	0.371***
	(0.201)	(0.157)	(0.151)	(0.141)
Pr. In House	0.446**	0.318*	0.353**	0.309*
	(0.220)	(0.169)	(0.162)	(0.157)
French × Pr. In House	-0.991***	-0.814***	-0.781***	-0.628***
	(0.333)	(0.262)	(0.238)	(0.231)
Big	-0.0259	0.00741	0.0155	-0.0239
	(0.111)	(0.0927)	(0.0933)	(0.0868)
Small	-0.211**	-0.187**	-0.154**	-0.143***
	(0.0870)	(0.0730)	(0.0643)	(0.0542)
Mountain	0.225	0.247***	0.193***	0.126**
	(0.136)	(0.0834)	(0.0619)	(0.0487)
Income	0.000111	0.000139**	0.000117**	0.000134**
	(7.44e-05)	(6.13e-05)	(5.67e-05)	(5.77e-05)
Urban	0.149	0.0964*	0.128**	0.100*
	(0.118)	(0.0561)	(0.0601)	(0.0552)
Debt	-1.504	0.634	0.333	1.194
	(1.439)	(1.171)	(1.272)	(1.168)
Demographic Dep. Ratio	0.0542	-0.258	-0.315	-0.124
	(0.465)	(0.285)	(0.287)	(0.298)
Executive: Non partisan	0.0975	0.102	0.111*	0.0524
	(0.0846)	(0.0682)	(0.0630)	(0.0638)
Executive: Right	0.0126	-0.0484	-0.0390	-0.0753
	(0.0904)	(0.0699)	(0.0627)	(0.0633)
Constant	7.365***	8.109***	7.510***	7.565***
	(0.985)	(0.668)	(0.533)	(0.435)
Observations	138	178	200	250
R-squared	0.663	0.610	0.578	0.521

*Notes:* \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . Robust Standard errors clustered at the city level in parentheses. OLS estimations for the years 2013 and 2014. Additional control: dummy variables for each service (1 if the service is provided in the mun.). All regressions include Canton fixed effects and a year dummy.

Table 3.19: Effects of public contracting within and across culture (non RDD)

Dep. Var.: Ln(Spendings <i>p.c.</i> )				
Subsample	20 km	25 km	30 km	40 km
French	-0.342*	-0.370**	-0.206	-0.0592
	(0.191)	(0.165)	(0.139)	(0.106)
Pr. Publ. Contr.	-0.237	-0.0980	-0.129	-0.108
	(0.322)	(0.233)	(0.243)	(0.207)
French × Pr. Publ. Contr.	1.290**	0.916**	0.680	0.437
	(0.526)	(0.422)	(0.416)	(0.327)
Big	-0.0802	0.0335	0.0571	0.000513
	(0.101)	(0.0873)	(0.0942)	(0.0884)
Small	-0.229**	-0.197**	-0.157**	-0.139**
	(0.0925)	(0.0771)	(0.0678)	(0.0583)
Mountain	0.234	0.264***	0.189***	0.117**
	(0.155)	(0.0879)	(0.0682)	(0.0490)
Income	0.000110*	0.000158**	0.000127**	0.000143**
	(6.34e-05)	(6.92e-05)	(5.81e-05)	(5.63e-05)
Urban	0.108	0.0776	0.118	0.0962
	(0.124)	(0.0724)	(0.0741)	(0.0674)
Debt	-1.602	0.741	0.429	1.156
	(1.474)	(1.331)	(1.428)	(1.287)
Demographic Dep. Ratio	0.147	-0.190	-0.239	-0.0364
	(0.461)	(0.318)	(0.319)	(0.309)
Executive: Non partisan	0.0600	0.0797	0.0972	0.0379
	(0.101)	(0.0722)	(0.0655)	(0.0674)
Executive: Right	-0.00561	-0.0679	-0.0511	-0.0829
	(0.106)	(0.0778)	(0.0700)	(0.0711)
Constant	7.316***	8.289***	7.891***	7.784***
	(0.953)	(0.660)	(0.575)	(0.497)
Observations	138	178	200	250
R-squared	0.674	0.603	0.553	0.495

Notes: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . Robust Standard errors clustered at the city level in parentheses. OLS estimations for the years 2013 and 2014. Additional control: dummy variables for each service (1 if the service is provided in the mun.). All regressions include Canton fixed effects and a year dummy.



Table 3.20: Effects of private contracting within and across culture (non RDD)

Dep. Var.: Ln(Spendings <i>p.c.</i> ) Subsample	20 km	25 km	30 km	40 km
French	-0.240 (0.197)	-0.283** (0.131)	-0.196 (0.120)	-0.0960 (0.112)
Pr. Private Contr.	-0.430 (0.290)	-0.360* (0.207)	-0.389** (0.189)	-0.312** (0.152)
French × Pr. Private Contr.	0.366 (0.454)	0.389 (0.343)	0.462 (0.343)	0.443 (0.274)
Big	-0.0120 (0.0982)	0.0307 (0.0863)	0.0350 (0.0839)	0.00423 (0.0790)
Small	-0.171* (0.0858)	-0.174** (0.0730)	-0.149** (0.0650)	-0.135** (0.0538)
Mountain	0.233* (0.124)	0.237*** (0.0872)	0.187*** (0.0644)	0.126** (0.0482)
Income	0.000150* (7.85e-05)	0.000176** (6.80e-05)	0.000153*** (5.76e-05)	0.000154*** (5.66e-05)
Urban	0.0933 (0.103)	0.0588 (0.0639)	0.0819 (0.0626)	0.0615 (0.0595)
Debt	-1.656 (1.562)	0.694 (1.213)	0.367 (1.319)	1.089 (1.186)
Demographic Dep. Ratio	0.283 (0.490)	-0.0661 (0.334)	-0.138 (0.298)	0.0147 (0.301)
Executive: Non partisan	0.00920 (0.0931)	0.0306 (0.0802)	0.0513 (0.0669)	0.0198 (0.0688)
Executive: Right	-0.0586 (0.0932)	-0.116 (0.0746)	-0.102 (0.0669)	-0.111 (0.0692)
Constant	7.959*** (1.061)	8.771*** (0.786)	8.111*** (0.577)	7.962*** (0.470)
Observations	138	178	200	250
R-squared	0.622	0.578	0.554	0.505

*Notes:* \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . Robust Standard errors clustered at the city level in parentheses. OLS estimations for the years 2013 and 2014. Additional control: dummy variables for each service (1 if the service is provided in the mun.). All regressions include Canton fixed effects and a year dummy.

## 3.6 Conclusion

The goal of this this chapter was to find a robust causal evidence on the role of culture in explaining the propensity of public authorities to involve the private sector in the delivery of public services.

Using the language border between the German-speaking and French-speaking areas in Switzerland (the so-called *Roestigraben*) in a Regression-Discontinuity design (RDD) approach combined with a within-canton identification strategy, that is, within the three bilingual cantons of Berne, Fribourg, and Valais, we show that culture has a substantial impact on the *make-or-buy* decision of local Governments: municipalities in the French side of the language border are 60 percent less prone to contract-out with the private sector than adjacent municipalities in the German side of the border, under an identical economic and institutional framework. Regarding the classical technical determinants of the *make-or-buy* decision, we observe that these factors are totally in line with the results of Chapter 2, albeit the magnitude of these effects are much smaller than the effect of culture. We hence conclude that culture is the most important determinant of the organizational choices for public services.

We then test for different issues. We first test for the existence of a cultural bias induced by the fact that the culture variable might not be orthogonal to the technical variables. To do this, we include interaction terms between our cultural variable and the technical variables, which allows us to conclude that there is no bias induced by culture. We then test for a potentially different impact of the marginal effect of culture within each side of the border. Using a difference-in-differences identification strategy, we show that the impact of culture is the same in the municipalities that are at the language border and in the municipalities that are further away from the border.

## Chapter 4

# The Public Service Motivation (PSM) — Literature review

In the Chapter 3, we have shown that the cultural factor is a key determinants of the *make-or-buy* decision for local public services in Switzerland. We now want to understand what are the channels of transmission between culture and organizational choices.

Public service motivation can be defined as a special care about the output being produced when faced with public services. When goods are produced with external benefits, then individuals who work in the production of these goods may factor the value of the output that they produce into the amount of effort that they put in. For such motivated agents, rewards to putting in effort are then non-pecuniary. However, the non-pecuniary rewards depend on the way in which the organization is structured, whether it is structured around a mission that matches motivated agents' preferences or not.

Public Service Motivation particularly fosters In-House provision rather than public contracting. Indeed, public contracting — or at least part of it — may imply objectives of profit similar to that of the private sector, whereas in-house provision is by its very nature non-profit oriented. This may make public contracting less mission-oriented than in-house provision (Besley and Ghatak, 2005).

Before running empirical analyses to provide evidence on this channel (what we shall do in Chapter 5), it is necessary to well understand what PSM is and hence to consider the specific literature at the origin of the concept. The goal of this chapter is then to present a review of the literature regarding Public Service Motivation (PSM). Indeed, by contrast with the literature on bureaucracy and rent seeking, who suggest that public provision is by its very nature less efficient than private provision, PSM suggests on the contrary that the matching (person-organization fit) between highly public service motivated employees and an organization (the public sector) whose goals and practices correspond the best with their aspirations might make the public sector more efficient than private firms.

This literature review highlights that the literature shows that culture is a major determinant of PSM, which may explain across-country differences in the level of PSM and, in the Swiss case, the differences between the language regions. Then, the literature also highlights the importance of a good matching between the mission and values of the organization and the PSM of the employees. Finally, we identify several limitations of this literature, in particular the empirical one. In particular, we highlight the difficulties to measure PSM in a way that makes it possible to transpose it to different countries, as well as to provide across-country comparisons. Our literature review also sheds light on some issue related with the definition of PSM. Indeed, this definition changed over time, from a public *sector* motivation to a public *service* motivation that can also apply under certain conditions to services provided by the private sector. In addition, PSM is always measured in absolute terms, which does consider the fact that the agents have a more or less high propensity to behave in a civic manner, irrespective of whether they work for the public or the private sector, and irrespective of whether they provide services with a public-service component or not. This definition is hence too narrow and does not fit with the needs of our research. Constructing a PSM measure that allows to control for general civicness will be an important contribution of our next chapter. Finally, as the empirical literature on Public Service Motivation considers only public agents, it is not able to study potential relationships between PSM and the organizational choices. Tackling this issue will be the main goal of Chapter 5.

The remainder of this chapter will be as follows. In Section 4.1, we define PSM and we present its main theoretical foundations. We also highlight the importance of mission-matching. In Section 4.2, we shed light on the way PSM is operationalized in the empirical literature. In Section 4.3, we review the literature on the determinants of PSM. Finally, Section 4.4 concludes.

## 4.1 Definition

### 4.1.1 The foundations

Until the beginning of the years 1980's, the research on public employees and public sector efficiency was dominated by the public choice literature (*e.g.* Buchanan

and Tullock (1962), Tullock (1965), and Niskanen (1971)), which considered that the public sector was by its very bureaucratic nature inefficient, that public employees were less performing and less committed to their work than employees of the private sector. This point of view is well illustrated by the point of view expressed by Warren and Niskanen (1974) : *“American bureaucracy is guilty of gross mismanagement of the public interest. The real accountability crisis is that even if our bureaucrats act inefficiently and against our interests, as is too often the case, we cannot realistically hope for administrative abuses to be checked by the present ‘watchdog’ system.”* These considerations, along with the arrival in power of liberal politicians as Margaret Thatcher in the U.K. in 1979, and Ronald Reagan in the U.S. in 1981, lead to the implementation, since the beginning of the 1980’s, of New Public Management (NPM) reforms in order to apply the *“good practices”* of the private sector to the public sector (Hood, 1991).

This literature did not consider it as possible that different motivations can exist, and that these different motivations may — under certain circumstances — make it inefficient to apply directly to the public sector the receipts of the private economy. However, a new strand of research began to emerge in the public administration literature since the 1980’s, namely the Public Service Motivation (PSM).

The first occurrence of the concept of Public Service Motivation dates back to Rainey (1982). In reaction to the paper of Buchanan (1975), who argued that public sector managers were less job-involved than private sector managers<sup>1</sup>, Rainey showed on the contrary that public employees paid a bigger importance to the social interest. Asking 275 individuals (managers) working either for a U.S. Federal agency or for a large private firm how much importance they put on different motivation factors, he observed that public sector employees valued significantly more motives that generated benefits for the Society (*e.g.* engaging in meaningful public service, doing work that is helpful to other people, *a.s.o.* ), and that they reported significantly lower scores regarding motives in line with utility maximizing (*e.g.* higher pay, achieving status and prestige, making a good deal of money)

Albeit this study did not sketch a theoretical framework of the concept of Public Service Motivation, or even define this concept (*“it is difficult to define the concept any more directly or clearly than this, because it is actually a very complex concept”*), it was however the first attempt to highlight the fact that agents in the public and the private sector are subject to different motivations, by contrast with the dominant paradigm that all workers (whenever they worked for the public or the private sector) sought *exclusively* to maximize their own utility, in line with the Public choice theory.

In the same vein, for Staats (1988), public employees distinguish from private employees by the fact that they have a particular *public ethos*: *“ ‘Public service’ is a concept, an attitude, a sense of duty — yes, even a sense of public morality.”*

The concept of PSM has been formalized for the first time by Perry and Wise

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<sup>1</sup>Buchanan compared the levels of involvement between two samples of managers from the public and private sectors, respectively. To measure the job involvement of the respondents, he used constructs as the importance of their work in their life, as well as “the psychological absorption in their work”.

(1990), who aimed to review and structure the related concepts developed so far, as well as to highlight and identify the specificities of working for the public sector, as “*public service signifies much more than one’s locus of employment*”. This paper also intended to be an answer to the explosion of the New Public Management, and to the introduction of the merit pay for the employees of the U.S. Federal Government in 1979. Perry and Wise define PSM as “*an individual’s predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations. The term ‘motives’ is used here to mean psychological deficiencies or needs that an individual feels some compulsion to eliminate.*”. Building up on Knoke and Wright-Isak (1982), they distinguished three types of public service motives: rational, norm-based, and affective. The **rational motives** are mainly related to the participation in the policy-making process, either because of a personal identification with the goals of a given service, because this gives the agent a certain prestige, or because it allows him to satisfy some personal interest. The rational motives are by definition self-interested, albeit the satisfaction of self-interest may also lead to a satisfaction of the general interest. This may include the phenomenon of *warm-glow* identified by Andreoni (1989; 1990) in the context of charity giving: agents adopt a pro-social behaviour, not because it will profit to the others, but because it increases their self-esteem and they receive utility from the act of being pro-social. The second category of motives are **norm-based motives**: agents work for the public service because they desire to serve the public interest, which can include concerns for social equity. This is directly connected with a commitment to the values of the public sector. Finally, the third category of motives are **affective motives**, that is a particular commitment to a program and “*a genuine conviction about its social importance*”, which can include a component of self-sacrifice.

On the basis of this framework, Perry and Wise (1990) sketch, without testing them, three propositions. First, individuals who are highly public-service motivated will be more prone to seek to work for public organizations. Secondly, public service motivation increases the individual performance of the agents. Finally, public organizations that attract a large number of highly public-service motivated workers will have less need to resort to *utilitarian incentives* to achieve a high performance. These three propositions have given rise to a huge empirical literature, which corroborated them to a large extent, as we will show in the next section.

#### 4.1.2 Public sector motivation or Public service motivation?

Since the end of the years 1990’s, several scholars (Rainey and Steinbauer, 1999; Steen, 2008) shed light on the fact that PSM is not totally specific to the public sector *stricto sensu*. On the contrary, characteristics of public-service motivated agents can also be observed to a large extent within employees of the not-for-profit sector, and even in some cases within employees of the for-profit private sector. For this reason, Rainey and Steinbauer (1999) provide a wider definition of PSM: “*A general altruistic motivation to serve the interests of a community of people, a state, a nation or humanity.*”. In the same vein, Perry and Hondeghem (2008) define now PSM as

*“An individual’s orientation to delivering services to people with a purpose to do good for others and society”, and Vandenabeele (2007) as “The belief, values, and attitudes that go beyond self-interest and organizational interest, that concern the interest of a larger political entity and that motivates individuals to act accordingly whenever appropriate”. Hence, the definition of PSM moved from an initial definition centered on who provides a service to a definition centered on what are the characteristics of the service. In other words, public service motivation is no more considered as a motivation to work for the public sector, but rather than a motivation to provide public services (in a wide sense), regardless of the fact that this service is provided by the public or the private sector. The move from the first definition, that we could call “public sector motivation” to the second definition which corresponds more to the very terms “public service motivation” is not only a question of terminology; on the contrary, it changes fundamentally the scope of the research. For Brewer and Selden (1998): “If public service refers to actions that do something valuable or worthwhile for society, PSM is a universal trait that transcends the public sector”. Whereas the person-based definition focuses on questions like: “does it benefit or harm the society if a given service is provided by the private sector rather than public employees?”, the service-based definition does not allow to answer to such a question, at least directly, that is, without considering the matching between the values of public-service motivated agents with the values of the organization for which they work (Person-Organization-Fit, see below in Sub-Section 4.1.3). Rather, it enlarges the scope of research and provides useful insights in order to understand how government agencies should be organized — in particular regarding their management of HR — in order to provide public services in an efficient manner.*

Recentring the debate on PSM on a service-based definition also allows to disentangle the real motivation based on the will that one’s work is profitable for the society and extrinsic motivations in terms of, for example, job security, a generous pension system, or good wages offered by the public sector (Perry and Hondeghem, 2008).

It is however important to note that PSM should not be confused with the concept of intrinsic motivation developed, among others, by Bénabou and Tirole (2003), and Deci and Ryan (1985). Intrinsic motivation can be defined as *“the doing of an activity for its inherent satisfactions rather than for some separable consequence.”* (Ryan and Deci, 2000). This inherent satisfaction can be the intention to be useful to the Society (which would go along with Public Service Motivation), but it can also consist in factors that increase the utility of the agent without necessarily benefiting the others, for example the fact of fulfilling interesting or challenging tasks. In other words, whereas intrinsic motivation is essentially self-centered, PSM is on the contrary essentially turned towards the others. As Grant (2008) notes: *“prosocial and intrinsic motivations involve different reasons for expending effort. For intrinsically motivated individuals, effort is based on interest and enjoyment; for prosocially motivated individuals, effort is based on a desire to benefit others”*. In addition, what is important in intrinsic motivation is the process, the way the task is performed, whereas the focus of PSM is on the outcome (Grant, 2008). For Vandenabeele (2007), PSM is neither

totally intrinsic (because of its outcome orientation), nor totally extrinsic (because it is not dependent from extrinsic rewards).

### 4.1.3 Aligning the goals: Person-Organization Fit and Mission-Matching

Once admitted that workers distinguish from each other by different levels of public service motivation, it is crucial to determine under which conditions this motivation can better be expressed, and in particular which organizational structures and procedures fit the best with highly public-service motivated employees. The so-called Person-Organization (P-O) fit exists when the employees and the organization they work for share a certain amount of values, which increase the employees' commitment and their satisfaction to achieve tasks that hold intrinsic values for them (Moynihan and Pandey, 2007). Kristof (1996) was among the first to provide a definition of the P-O fit: *“the compatibility between people and organizations that occurs when: (a) at least one entity provides what the other needs, (b) they share similar fundamental characteristics, or (c) both”*

In line with the literature on organizational commitment, the Person-Organization is expected to increase the organization's efficiency in reducing the turnover: individuals whose values fit better with the values of the organization are less likely to quit, *ceteris paribus*. The impact of P-O fit on the turnover has been verified not only in the public and not-for-profit sectors, but also in the private, for-profit sector. In the particular case of PSM, the studies of Naff and Crum (1999), Balfour and Wechsler (1996), Elfenbein and O'Reilly (2007), Moynihan and Pandey (2007), and Steijn (2008) corroborate the existence of a strong relationship between the turnover and PSM: highly public-service motivated agents are less likely to quit their job in the public sector.

Albeit the results of the study of Bright (2007) on 205 employees from three public organizations in three U.S. States suggests that Person-Organization fit and Public Service Motivation are not related, the largest part of the research suggests on the contrary a strong complementarity between P-O fit and PSM, due to the fact that P-O fit acts as a mediator between PSM and work attitudes. As noted by Brewer and Selden (1998): *“PSM is an individual — not a sector-based — concept; however, some value congruence is expected between individuals with PSM and public-sector organizations.”* This hypothesis is supported by Kim's (2012) empirical study of on 814 public servants in South Korea. The consequence is that it is in the interest of government organizations to hire employees with a high degree of public service motivation, as these organizations will allow them to express this high PSM, to improve their organizational commitment and their job satisfaction, which in turn increases the organization's efficiency. In the same vein, Wright and Pandey (2008) found very similar results on a sample of 206 employees of local governments in the North-Eastern U.S.

Consistently with these findings, public-service motivated employees of the public



sector will have a lower job satisfaction, and in fine provide less efficient work, if they feel that the organization they work for fail to serve the public interest they consider as important, as shown by Vinzant (1998) in the case of social workers. In addition, the person-organisation fit has also a component of *person-job* fit: inside the same (public) organization, some jobs may be more subject than others to the expression of public-service values (Christensen and Wright, 2011), and hence that highly public-service motivated employees will particularly be attracted by public jobs in some sectors as welfare, education, health, and culture (Vandenabeele, 2008; Leisink and Steijn, 2008; Leisink and Steijn, 2009). Indeed, these sectors have a strong component of public interest, and the quality of the provided services directly affect the citizens' welfare. Similarly, some jobs in these sectors may allow the workers to express public-service values even in the private sector (Steen, 2008; Wright and Christensen, 2010; Christensen and Wright, 2011).

It follows that an adequate matching between the organization's values and the values of public-service motivated workers is of prime importance. In particular, this means that incentive schemes have to be in adequacy with the values of the employees, or at least the majority of them: red tape and high-powered incentive schemes based on sanctions and rewards, merit wage, and a strict control of the employees may be inefficient — and even counter-productive — in contexts where PSM is high, as these incentives tend to *crowd-out* the PSM (Besley and Ghatak, 2005; Bénabou and Tirole, 2006; Frey, Oberholzer-Gee and Eichenberger, 1996).

**In this section, we have shown that the PSM literature aims to shed light on the fact that agents working for the public sector and/or to provide public services are characterized by a higher motivation and a higher commitment, due to the fact that they feel that their work creates benefits for the Society, and that this effect is particularly strong when the values of the organization they work for are in line with their own values (P-O fit).**

Provided that PSM increases — *ceteris paribus* — the efficiency of the provision of public services, we should hence expect that a high degree of PSM should result in a higher propensity to maintain the provision of public services in-house. This means in particular that jurisdictions facing a same institutional environment should be less prone to contract-out if they know a higher level of public service motivation.

## 4.2 The difficulty of measuring PSM

### 4.2.1 The dimensions of Perry (1996)

Both seminal papers of Rainey (1982) and Perry and Wise (1990) highlighted the need to transpose the theoretical intuitions of PSM into a measurable scale that would allow to provide empirical evidence supporting these intuitions. We have seen above that Rainey (1982) based his analysis on a set of questions directly related to motivational

factors.

This need has been fulfilled with the empirical framework developed by Perry (1996), which is still nowadays at the heart of the largest part of the empirical literature on PSM, either in its original version or in adapted versions based on it. Based on the three motives developed in Perry and Wise (1990), (norm-based, rational, and affective), Perry (1996) identifies four dimensions that are constitutive of PSM. These dimensions are: (1) a commitment to the public interest; (2) compassion; (3) an attraction to public-policy making, and (4) self-sacrifice. Each of the first three dimensions is related to one of the *motives*. The commitment to the public interest operationalizes the norm-based motives, compassion is rooted in the concept of affective motives. The attraction to public-policy making is related with rational motives: *“attraction to public policy making can be exciting and dramatic and can reinforce one’s image of self-importance”*. The fourth dimension, self-sacrifice, is defined as *“the willingness to substitute service to others for tangible personal rewards”*<sup>2</sup>. Two other dimensions (civic duty, and social justice) have been first considered, but have been rejected because the empirical tests run by Perry showed that they were too strongly correlated with one or several of the other dimensions, which would have resulted in a severe lack of unidimensionality of the constructs.

These four dimensions were translated into 24 items: 3 for the attraction to public-policy making, 5 for the commitment to the public interest, 8 for compassion, and 8 for self-sacrifice. Each of these items consist in a statement with which the respondent can assess his agreement with a Likert scale (see Table 4.1).

Different alternative constructs have been proposed, based on the typology of Perry (1996). Kim and Vandenabeele (2010), Coursey and Pandey (2007), and DeHart-Davis, Marlowe and Pandey (2006) call into question the fact that self-sacrifice is independent from the three other dimension. The former suggests to remove this dimension, as it is a prerequisite for all three other factors, whereas the two latter merge the self-sacrifice and public interest dimensions. On the contrary, some other scholars suggest to complete Perry’s framework with additional dimensions, as “democratic governance” (Hondeghem and Vandenabeele, 2005; Vandenabeele et al., 2006; Vandenabeele and de Walle, 2008). On the other hand, Vandenabeele 2008 adds a dimension of customer-orientation. Comparing different measures of PSM based on the original typology of Perry (1996), Wright and Christensen (2009) show that the results of PSM empirical research are strongly dependent from the choice of a construct.

An important issue with the measures of PSM based on Perry’s constructs is the fact that these constructs are expected to be strongly correlated with elements that not exactly PSM, in particular the level of civicness of the respondents. Indeed, several items in Perry’s typology capture civic behaviours that are not specific to the public sector, for example Nr. 18 (*“I believe in putting duty before self”*), or Nr. 23 *“I am one of those rare people who would risk personal loss to help someone else.”* Hence, these PSM constructs do not disentangle PSM and civic behaviours that are expressed

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<sup>2</sup>Perry illustrates self-sacrifice with the famous sentence of President Kennedy in his inaugural address in 1961: *“Ask not what your country can do for you; ask what you can do for your country”*

Table 4.1: Constructs of Public Service Motivation in Perry (1996)

Dimension	Items
<b>Public policy making</b>	1. Politics is a dirty word. (Reversed) 2. The give and take of public policy making doesn't appeal to me. (Reversed) 3. I don't care much for politicians. (Reversed)
<b>Public interest</b>	4. It is hard for me to get intensely interested in what is going on in my community. (Reversed) 5. I unselfishly contribute to my community. 6. Meaningful public service is very important to me. 7. I would prefer seeing public officials do what is best for the whole community even if it harmed my 8. I consider public service my civic duty.
<b>Compassion</b>	9. I am rarely moved by the plight of the underprivileged. (Reversed) 10. Most social programs are too vital to do without. 11. It is difficult for me to contain my feelings when I see people in distress. 12. To me, patriotism includes seeing to the welfare of others. 13. I seldom think about the welfare of people whom I don't know personally. (Reversed) 14. I am often reminded by daily events about how dependent we are on one another. 15. I have little compassion for people in need who are unwilling to take the first step to help themselves. 16. There are few public programs that I wholeheartedly support. (Reversed)
<b>Self-sacrifice</b>	17. Making a difference in society means more to me than personal achievements. 18. I believe in putting duty before self. 19. Doing well financially is definitely more important to me than doing good deeds. (Reversed) 20. Much of what I do is for a cause bigger than myself. 21. Serving citizens would give me a good feeling even if no one paid me for it. 22. I feel people should give back to society more than they get from it. 23. I am one of those rare people who would risk personal loss to help someone else. 24. I am prepared to make enormous sacrifices for the good of society.

Source: Perry (1996)

both in everyday life, also when public services are not involved. In addition, some other items measure the importance paid to public services, without any component of civicness or good behaviour. For example, the fact that a respondent considers that “Most social programs are too vital to do without” (Nr. 10) does not necessarily mean that he would express a particular motivation if he worked in this sector, but only that he finds that these programs are important — perhaps only as a beneficiary.

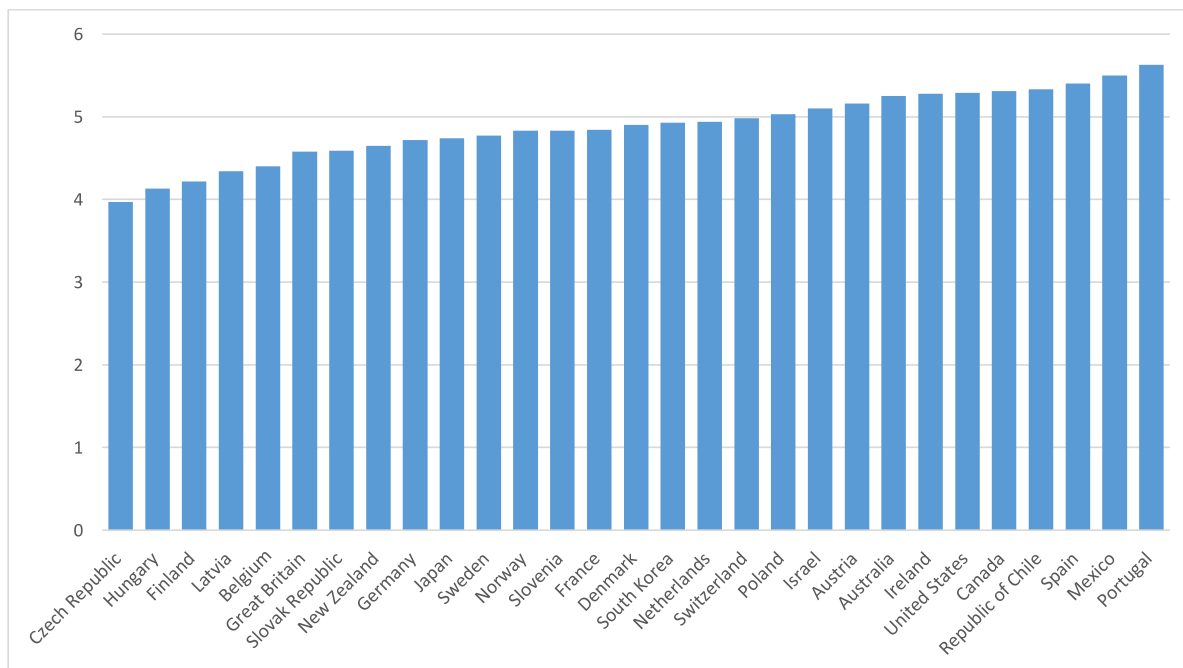
#### 4.2.2 Measuring PSM in different countries

In addition, the fact that the concepts of PSM, and the typology of Perry (1996) have been developed in the United States raises issues when it turns to apply them in other countries.

This is particularly important when it turns from within-country studies to cross-country comparisons: in this case, it is crucial — but also difficult — to translate precisely the questions in the different languages without changing — even slightly — their signification. It is even more problematic to find correspondences between concepts that may differ from one country to another. For example, an expression like *self-sacrifice* may be interpreted very differently by people belonging to different cultures, as shown in the case of Belgium by Vandenabeele and Hondeghem (2004). Apart from *technical* issues related to the measurement of PSM, the definition of what is constitutive of the public sector culture, and hence the relative importance of the different components of PSM, also vary strongly across countries and cultures. The concept itself of what *is* public service covers a wide range of definitions, even in countries that share a common historical heritage, as it is the case with most European Countries (Vandenabeele and de Walle, 2008; Raadschelders, 2003). For Vandenabeele, Hondeghem and Steen (2004): “*differences in both terminology and content complicate research on PSM and make it difficult to conduct macro-level comparative studies.*” Kim (2009) calls into question the pertinence of the the dimension *Attraction to public-policy making* in general, and in particular whether it is appropriate when PSM is considered in the context of South Korea, due to the homogeneity of the Korean society (contrary to the U.S. and many other countries, Koreans share a common culture in the whole country), but also to the influence of Confucianism: “*Under the influence of Confucian virtues and collectivistic culture, Koreans are inclined to become civil servants to serve the public and enhance the public interest generally, not specifically in their own interests. Thus, normative and affective motives will be more prominently related to PSM than rational motives.*”. For these reasons, he modified the scale, removed the *Attraction to public-policy making* dimension from his analysis, and reduced the number of items from 24 to 14.

Hondeghem and Vandenabeele (2005) and Vandenabeele et al. (2006) highlight strong differences in the perception of the *Compassion* dimension across countries: whereas French agents of the public sector emphasize individual compassion, they observe more collective compassion in the Netherlands.

Due to these difficulties, there exist few studies that quantify and compare the level of PSM *between* a large set of countries. In order to construct cross-country



Note: Data: Vandenabeele and Van de Walle (2008)

Figure 4.1: Public service motivation in OECD countries

PSM measures, Vandenabeele and de Walle (2008) use data from the International Social Survey Program (ISSP), on more than 52'000 respondents in 39 countries. They consider questions on the importance of 5 items, measured on a Likert scale, namely *“To keep watch of the actions of government”* and *“To be active in social or political associations”* (Politics and Policy dimension), *“To help people in my country who are worse of than myself”* and *“To help people in the rest of the world who are worse of than myself”* (Compassion dimension) and *“To choose products for political, ethical, or environmental reasons, even if they cost a bit more”* (Self-sacrifice dimension). In general, they measure the highest PSM scores in Southern European and American countries, and the lowest scores in Central and Eastern Europe, particularly in the former Soviet bloc: among the 10 countries with the lowest PSM rates, 6 (Czech Republic, Hungary, Bulgaria, Latvia, Russia, Slovak Republic) belonged to the Eastern bloc. We report the measures for OECD countries in Table 4.1. The authors explain cross-country variations by different historical evolutions, and path dependency: *“Although the concept of public service motivation is found everywhere and one can speak of a robust common core, the focus and empirical nature tends to differ due to a different or partial implementation of similar ideas.”*

### 4.2.3 Public service motivation in Switzerland

#### Methodology and empirical evidence

A large part of the empirical research conducted on PSM in Switzerland is based on the same dataset of 3754 municipal employees in 279 municipalities (Anderfuhren-Biget, Varone, Giaque and Ritz, 2010; Anderfuhren-Biget, 2012; Giaque, Anderfuhren-

Biget and Varone, 2015). These studies use a PSM variable based on the 4 dimensions of Perry (1996) (see above, in Sub-Section 4.2.1).

In line with the results measured in other countries, Anderfuhren-Biget et al. (2010) observe that individuals with a higher PSM tend to be more satisfied with their jobs and to be more committed and more efficient. Giauque et al. (2015) test for their part the extent of P-O fit in Swiss municipalities. They show that a good adequacy between personal aspirations and the work environment creates good conditions that lead the individual to express their PSM. On the contrary, *“public employees who feel a sense of non-congruence between organisational practices and their expectations demonstrate more negative attitudes towards their work and organisation, which might in turn contribute to decreasing PSM.”* The authors show that extrinsic motivators are less prone to foster the expression of PSM than intrinsic motivators. However, they only observe the difference of impact between intrinsic and extrinsic motivators, and not their signs. In particular, they do not show whether extrinsic motivators have a positive or a negative impact on PSM: all we know is that this impact is smaller than the impact of intrinsic motivators.

Whereas these two papers focused on an institutional/organizational component of PSM, that is, the way PSM is expressed in a given working environment, Anderfuhren-Biget (2012) focuses on the individual determinants of PSM. Consistently with the research conducted in other countries, they observe a significant impact of socio-demographic variables (age, gender, education level). In addition, they show a significant difference in terms of PSM between the two main language areas. Whereas the scores are higher in the German part for the dimension “Attraction to policy making”, and to a lesser extent for “Self-sacrifice” and “Commitment to public interest”, French respondents exhibit for their part higher scores for the dimension “Compassion”.

In the same vein, Ritz and Brewer (2013) show very similar results using the same municipal database as well as a database of 14'486 employees of the Federal administration. In particular, they also observe higher PSM in the German-speaking area. They explain this result by the fact that Swiss-Germans are more interested in politics, which is a consequence of the fact that local governments in the German-speaking areas have a larger autonomy, and that the democracy in German Cantons is more inspired by direct democracy whereas municipalities in the Latin area tend to delegate more power to their elected representatives, thus leading to a weaker political involvement of the citizens.

Finally, Ritz (2009) conducts a study on the impact of PSM on the efficiency of the activity of the public sector. Based on a database of 13532 employees of the 7 Federal Departments, he shows a positive relationship between PSM and internal efficiency in terms of cost reduction, process simplification, and decision making.

These studies however face several shortcomings. The first one applies to the papers considering local government employees (Anderfuhren-Biget et al., 2010; Anderfuhren-Biget, 2012; Giauque et al., 2015). Whereas the respondents live and work in different cantons, the authors do not control for Canton fixed effects. Neither do they control for institutional characteristics of the municipalities the individuals work for *e.g* its

size, or the scope of NPM reforms conducted, provided that NPM reforms have been implemented at the cantonal level in the majority of the cantons in the German area while they are quite scarce in the French area (Steiner, 2000; Ritz and Sinelli, 2013). This difference can also be observed at the local level: in year 2000, about 10 years after the first NPM attempts in Switzerland, more than one third of the municipalities in the German area had experienced NPM reforms, whereas less than 10 percent of the French-speaking municipalities did so (Steiner, 2000; Ladner, Arn, Friederich, Steiner and Wichtermann, 2000)<sup>3</sup>. Hence, a possible omitted variable bias questions the validity of the results of the studies mentioned above. This critique is corroborated by the fact that the main explanations that Ritz and Brewer give for the difference between the French and German areas are indeed institutional rather than cultural.

The second important weakness, which applies to both the studies at the local and Federal levels, is that these studies only consider public sector employees. Including workers of the private sector in the study would have brought a necessary counterfactual. Without it, it is not possible to determine if the identified factors are really determinants of PSM, or whether they are only determinants of a self-selection process that may make, for example, individuals with a same level of PSM more prone to join the public sector in the German area than in the French area. Hence, neither Giauque et al. (2015) nor Ritz and Brewer (2013) do allow to determine whether there is a difference in the general propensity of French and German individuals to adopt PSM attitudes, irrespective of whether they work for the public or the private sector. Finally, the main limit of these studies is that they do not disentangle the pure public component of public service motivation from a more general measure of civic attitudes that an agent expresses in everyday life as well as in his professional life, in the public *or* private sector. In addition, the critiques presented above on the difficulty to use Perry's dimensions in a multi-cultural context — because of difficulties of translation and diverging interpretations of key concepts — still apply in the Swiss context.

**In this section, we have shown that measuring PSM is a complex challenge. Most of the literature is based on the constructs defined by Perry (1996). This is also the case of the literature regarding Switzerland. However these constructs suffer from several limitations. The most important is that they do not allow to disentangle PSM from a more general propensity to adopt a civic behaviour, that manifests itself to the same extent when the public sector is involved or not. In addition, as most studies consider only employees of the public sector, they lack from a counterfactual. Finally, difficulties in translating the questions, as well as difficulties to transpose the concepts in countries with another organizational culture make it difficult to provide cross-country comparisons. For this reason, in the next chapter, we shall use a proxy of PSM that controls for the**

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<sup>3</sup>For Ladner (2016): *“In the more Napoleonic and state oriented French speaking municipalities, the new steering possibilities based on products and global budgeting seem to be more attractive whereas in the German speaking part reforms are more frequent and we find stronger support for managerial reforms and private sector solution”*

general degree of civiness. In addition, our analysis will focus on local jurisdictions facing a same institutional framework, which will allow us to observe a real causal evidence.

## 4.3 The Determinants of PSM

### 4.3.1 Cultural determinants

Vandenabeele et al. (2006) and Vandenabeele and de Walle (2008) highlight the impact of the dominant religion, insofar the community — and the government institutions as well — integrates moral values taught by the Churches in its own values, even unconsciously. This is the case, in particular, of compassion. Among countries sharing a same dominant religion, the relative religious engagement also affects the level of PSM: Christian countries in which religion plays an important role or where the religious participation is higher (*e.g* Southern-European countries) tend to have higher degrees of PSM (Vandenabeele and de Walle, 2008; Norris, 2003). This could explain why Poland — where the religious participation is quite strong — is the only Post-communist country that still exhibits a rather high PSM in the study of Vandenabeele and de Walle (2008). These results regarding religion are in line with the fact that, within a country, more religious individual tend to have a higher PSM Perry (1997) (see below in Sub-Section 4.3.3).

Other analyses on cultural traits that affect PSM are based on the dimensions developed by Hofstede, Hofstede and Minkov (1991) and Hofstede (2001). The first dimension is the individualist vs. collectivist nature of the society. The PSM scores measured by Vandenabeele and de Walle (2008) suggest that collectivist societies (in Asia, Latin America, and to a lesser extent Southern Europe) develop higher levels of PSM than individualist societies, which is line with the fact that collectivist societies emphasize values as solidarity with the other members of the society, loyalty, compassion, and self-sacrifice to the interest of the “group”. This is in line with what Kim (2009) observed in South Korea.

The second dimension is risk aversion (uncertainty avoidance): strongly risk-averse societies (Eastern and Central Europe, Latin America, Japan, and Germanic countries) tend to implement more formal rules, that are a deterrent for PSM.

Power distance is defined by Hofstede, Hofstede and Minkov (2010) as “the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally”. Hence, countries with a high power distance (Eastern Europe, Latin America, Africa, Asia) accept a strongly hierarchical society, whereas small power distance countries (Western European and Northern American countries) put a greater importance on equality, which also means that the individuals are more prone to act in a way that reduces these inequalities.

The Masculinity vs. Feminity dimension distinguishes values like performance and competition (values that Hofstede et al. (2010) considers as “Masculine”<sup>4</sup>. from values

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<sup>4</sup> “*Masculinity stands for a society in which social gender roles are clearly distinct: men are*



as quality of life, warm personal relationship, and solidarity (“Feminine” values). It is hence a distinction between performance societies and welfare societies (Kim 2015). “Masculine” societies are prevalent in Latin and Germanic countries, as well as in Japan, whereas “Feminine” societies are more prevalent in Northern Europe. As “Femininity” is associated with a greater tendency to help other people and to seek the global welfare, “feminine” societies are expected to have a higher PSM.

Using data from the ISSP, Kim (2015) analyses the individual and national (using Hofstede et al.’s (2010)’s dimensions) determinants of the PSM of more than 43’000 respondents from 32 countries<sup>5</sup>. His findings are in line with the expected results regarding collectivism (collectivist societies tend to have higher PSM), masculinity (societies with more *masculine* values have higher PSM) and indulgence. By contrast, he finds no significant relationship between PSM and power distance, as well as uncertainty avoidance. In addition, he confirms that individual characteristics as gender, age, education level, and religiosity still remain significant determinants of PSM, even after controlling for national characteristics.

### 4.3.2 Institutional determinants

Studying PSM in different countries or large regions makes it necessary to consider political and institutional characteristics of the country (or the region). Indeed, these institutional framework constitutes the framework conditions that may foster or deter the expression of the agents’ PSM, isofar the institutions, culture, and the well-functioning of society do affect each other (Tabellini, 2010). *“The institutions and their administrative history explain most of the features found in a specific PSM concept. This also explains the multidimensional appearance of PSM, as these institutions are structured in a systemic way and relate to one another. Whenever studying PSM, these institutions should be taken into account, because ignoring them will probably results in violating concept validity.”* (Vandenabeele et al., 2006).

Vandenabeele et al. (2006) point out substantial differences between the U.K., who *“has a distinct public service ethos, which consists of core values, behaviors and institutions”*, and the Weberian German bureaucracy who *“focuses more on the legal and structural elements of public administration, [...] and is acknowledged to this day for its efficiency and formal controls.”*. They identify several important characteristics that are not taken into account within Perry’s (1996) dimensions, in particular the degree of formalism of the bureaucracy, the competencies considered as important for civil servants (generalist tradition in the U.K. vs. legalist tradition in Germany), or the proximity and the dependency between the civil servants and the policy-makers.

The level of economic development and the structure of the economy have a strong impact on the development of PSM, with higher levels of PSM in industrial and

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*supposed to be assertive, tough, and focused on material success; women are supposed to be more modest, tender, and concerned with the quality of life. Femininity stands for a society in which social gender roles overlap: Both men and women are supposed to be modest, tender, and concerned with the quality of life.”* (Hofstede et al., 2010)

<sup>5</sup>PSM is measured by the responses to the questions: *“How important is a job that allows someone to help other people?”* and *“How important is a job that is useful to society?”*

agricultural countries than in economies based essentially on tertiary sectors.

The fact — highlighted by Vandenabeele — that PSM is particularly low in countries who used to belong to the Soviet bloc is in line with the previous results of Norris (2003), who explain this result by the fact that these countries have a recent experience of totalitarian governments, but also by the “*shock therapies*” of massive reductions of the size of the State that accompanied the transition to the market-economy. As shown by Pratchett and Wingfield (1996) and Norris (2003), a similar impact can be observed in capitalist countries that experienced massive NPM reforms in the years 1980’s and 1990’s: “*Governments in Anglo-American nations could have a more difficult time attracting workers because of recent public sector reforms*” (Norris, 2003).

### 4.3.3 Individual determinants

When considering individuals living in a same country, many studies highlight the importance of personal characteristics on the individuals’ levels of PSM. A positive relationship has been observed between PSM and age as well as education level (Perry, 1997; Naff and Crum, 1999; Houston, 2000; Bright, 2005; Steijn and Leisink, 2006; Camilleri, 2007; Moynihan and Pandey, 2007; Pandey and Stazyk, 2008), as well as between PSM and income (Perry 1997). Whereas the positive relationship between age and PSM has been demonstrated many times, this result has received no satisfying justification yet (Perry and Hondeghe 2008). Results regarding the gender are mixed and depend from the dimension considered: whereas women exhibit a higher degree of compassion, men score higher in terms of attraction to policy making and Commitment to the public interest (Bright, 2005; DeHart-Davis et al., 2006; Vandenabeele, 2007; Tonin and Vlassopoulos, 2015). Finally, individuals who are more implicated in associations tend to have higher PSM.

In addition to these individual determinants measured within countries, the cross-country-based literature observed several country-level determinants of PSM, linked with either the institutions, the history, or culture.

**In this section, we have shown that the literature identifies three kinds of determinants of PSM, namely cultural determinants (*e.g.* religion, individualist vs. collectivist society, risk aversion), institutional determinants (organizational culture, economic development) as well as individual determinants (education, age, gender). However, this literature totally ignores the existence of reverse causality. We should however expect both the institutions and culture to be affected by the PSM of the individuals. Indeed, culture is the expression of the behaviours of the individuals composing a society, and the institutions are also shaped by the behaviour or the individuals that are part of them. In the following chapter, we shall address this issue, and show that PSM has a significant impact on the institutions, namely on organizational choice.**

## 4.4 Conclusion

Key elements can be drawn from this overview of the literature. The first point concerns the importance of PSM, as well as P-O fit. It has been established that Public Service Motivation is a key factor to consider when studying the efficiency of public services. PSM may explain the success or the failure of reforms of the public sector, in particular the implementation of HR practices based on sanctions and rewards. The management culture has to be in line with the presence — or the absence — of PSM within the public employees: it is essential that the practices and values of the organization have a good matching with the values of the employees.

The second point is that the very definition of PSM is not totally clear. In particular, it changed over time, from a public *sector* motivation to a public *service* motivation that can also apply under certain conditions to services provided by the private sector. In addition, this definition, as well as the components of PSM, can vary across countries, and across the regions of a same country (*e.g.* the language areas of Switzerland, or Belgium). This makes it difficult to find a proxy of PSM that can be applied to different countries and allow cross-country comparisons. However, the literature shed light on the importance of institutional characteristics on the expression of PSM, and also on the importance of culture. The consequence is that practices that are successful in some countries could be totally inefficient in some other countries.

Another important issue that is not taken into account by the existing literature is that PSM is always considered in absolute terms, and does not take into account the propensity of the agents to behave in a civic manner, irrespective of whether they work for the public or the private sector, and irrespective of whether they provide services with a public-service component or not. Constructing a PSM measure that allows to control for general civicness will be an important contribution of our next chapter.

Finally, almost all the empirical literature on PSM considers only public agents and neglect private workers. Doing so, this literature is not able to draw connections between PSM and the organizational choices. The goal of the next chapter will be to tackle this issue.

# Chapter 5

## Testing the Public Service Motivation Channel

In Chapter 3, we have shed light on the fact that culture was the most important determinant of organizational choices at the local level in Switzerland. Our result suggested that mission-matching could be this channel of transmission. In Chapter 4, we have reviewed the literature on Public Service Motivation, in order to determine how this literature may allow to answer to the questions we want to address. Hence, the goal of this fifth and last chapter is to provide evidence on the fact that PSM (and more precisely mission matching) is the channel of transmission between the culture and organizational choices. Doing so, we will add the last missing piece to the questions addressed by this thesis.

We show that culture is the most important determinant of organizational choices for public services because it determines the prevalence of motivated agents that are aligned with public, mission-oriented organizations. We also provide evidence for the role of matching the mission preferences of organizations and agents in increasing productivity.

The remainder of this chapter will be as follows. In Section 5.1 we describe our empirical strategy. We construct an original measure of PSM, based on the difference between civic attitudes when the public sector is concerned and civic attitudes in

general. Doing so, we respond to a lack of the traditional PSM literature. In Section 5.2, we describe our data. In Section 5.3, we present our empirical results. Finally, Section 5.4 concludes this fifth and last chapter.

## 5.1 Empirical Strategy

Our goal here is to assess whether German-Swiss and French-Swiss systematically differ in terms of public service motivation.

To assess whether this channel could explain our results, we use individual-level data from the Swiss Household Panel that surveys thousands of respondents in Switzerland (random sample) assessing a broad range of questions linked to living in Switzerland. Among others, in its waves of 2011 and 2014, it asks individuals on scale between 0 and 10 whether they think that it is justified “cheating on tax declaration”, “avoiding a fare on public transport”, “claiming State benefits to which you are not entitled”. We argue that these three items capture preferences towards civic-minded behaviour when the public sector is concerned.

However, the problem with relying on these items is that they might capture not only preferences related to civic-minded behaviour when the public sector is concerned but also preferences related to civic-minded behaviour in general. Indeed, it is highly possible that preferences for civicness in the public sector are correlated with preferences for civicness in general, so that they reflect not only preferences related to public good concerns but also preferences for civicness in general. For preferences towards civic-minded behaviour in the public sector to reflect *only* the motivational channel due to the public good component discussed above, we need to eliminate individual preferences towards civic-minded behaviour in general. The SHP also asks individuals on scale between 0 and 10 whether they think that it is justified “lying in own interest”, “keeping found money”, “failing to report damage to parked vehicle”. We argue that these three items reflect preferences towards civic-minded behaviour in general. We then define PSM as the score for civicness in the public sector minus the score for civicness in general given by the respondent. **The difference between the two scores captures the *Public Service Motivation channel*, i.e. the motivation only due to the presence of a public good component.** This will constitute our dependent variable. Doing this way, we also control for differences in unobservables in our sample.

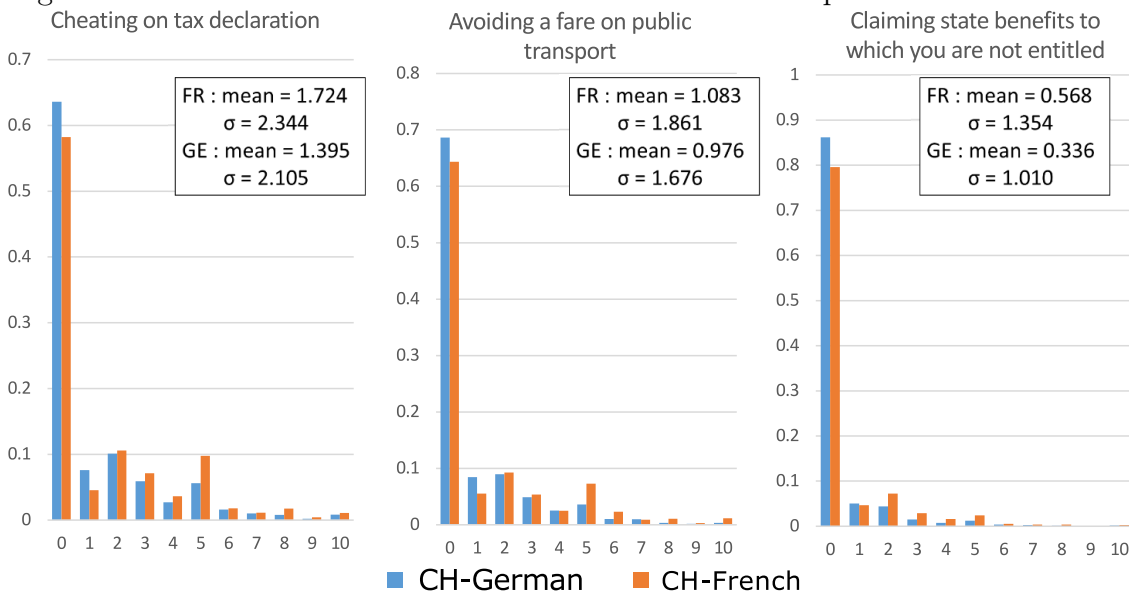
## 5.2 Data

We restrain our sample to only Swiss citizens since birth, because specific Swiss cultural traits that are transmitted by family and social networks should be stronger for individuals with a Swiss family. Indeed, we expect that the cultural traits of people born outside of Switzerland will be a mix of the culture of the Swiss region in which they live and of their culture of origin. Hence, considering non Swiss natives might bias our analysis. For the purpose of our study, we considered only Swiss-French

and Swiss-German respondents, given by the language of the interview. This yields a sample of 2790 individuals, among which 79,9 percent are Swiss-German<sup>1</sup>. For some of them, we have data for both 2011 and 2014 leading to 4877 observations.

Figures 5.1 and 5.2 show that a large majority of German-Swiss and French-Swiss think that it is not justified being uncivic when faced with the public sector. But this fraction is higher among German-Swiss. We reversed these scales, so that larger values indicate stronger preferences for civic-minded behavior, and summed values over the three items to create a scale with a 30 point maximum. The average score given to civic-minded behaviour when the public sector is concerned is higher for German-Swiss (27,29) than for French-Swiss (26,64) in a 0 to 30 scale.

Figure 5.1: Preferences for civic-minded behaviour when the public sector is concerned



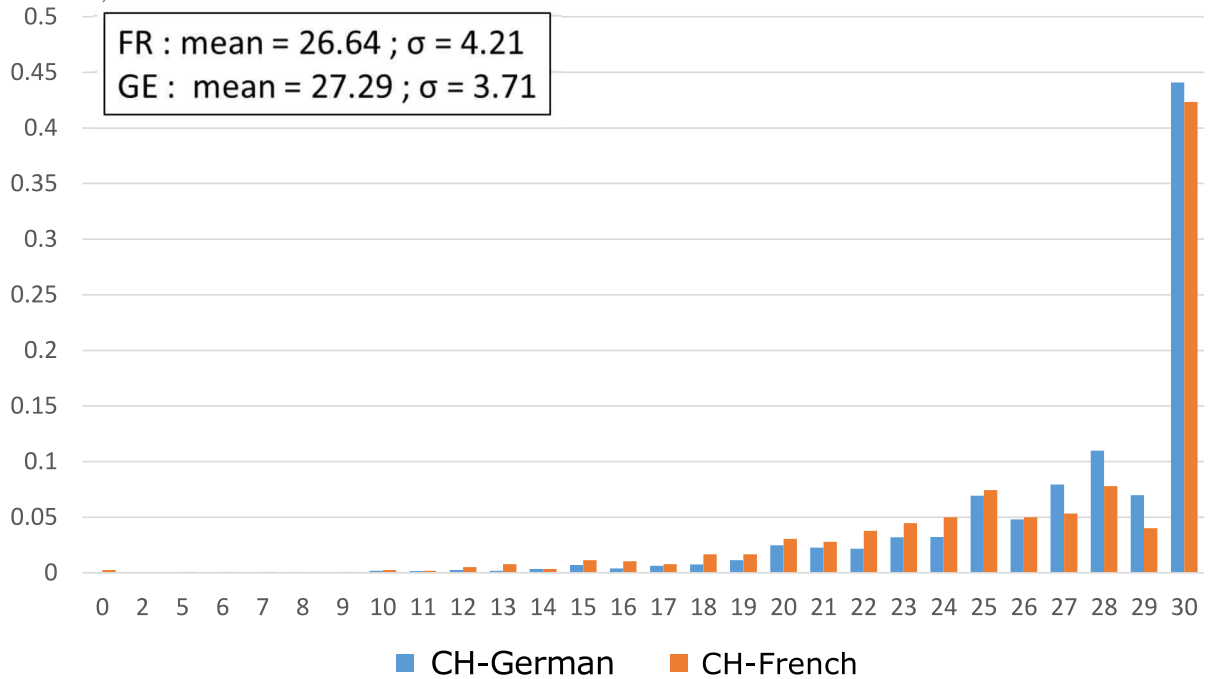
Notes: The question was worded as follows: “For each of the following items, tell me to what extent you think that it can be justified if 0 means *never justified* and 10 *always justified*. ”

Figures 5.3 and 5.4 show that German-Swiss have stronger preferences for general civic-minded behavior than French-Swiss. Most German-Swiss think it is not justified being uncivic by lying in own interest, keeping found money, failing to report damage to parked vehicle. While also a majority among French-Swiss thinks this way, a non-negligible fraction of French-Swiss answers that being uncivic can be justified. In the same way as for preferences towards civic-minded behaviour when the public sector is concerned, we reversed these scales, so that larger values indicate stronger preferences for civic-minded behavior in general, and summed values over the three items to create a scale with a 30 point maximum. The mean value for general civicness preferences is 22,98 for French-Swiss and 24 for German-Swiss.

Figure 5.5 highlights that when we differentiate the data about preferences towards civic-minded behaviour when the public sector is concerned with respect to the score given to civicness in general, so as to capture preferences purely related to PSM, the average score among French-Swiss (3,9) is higher than the one of German-Swiss (3,4).

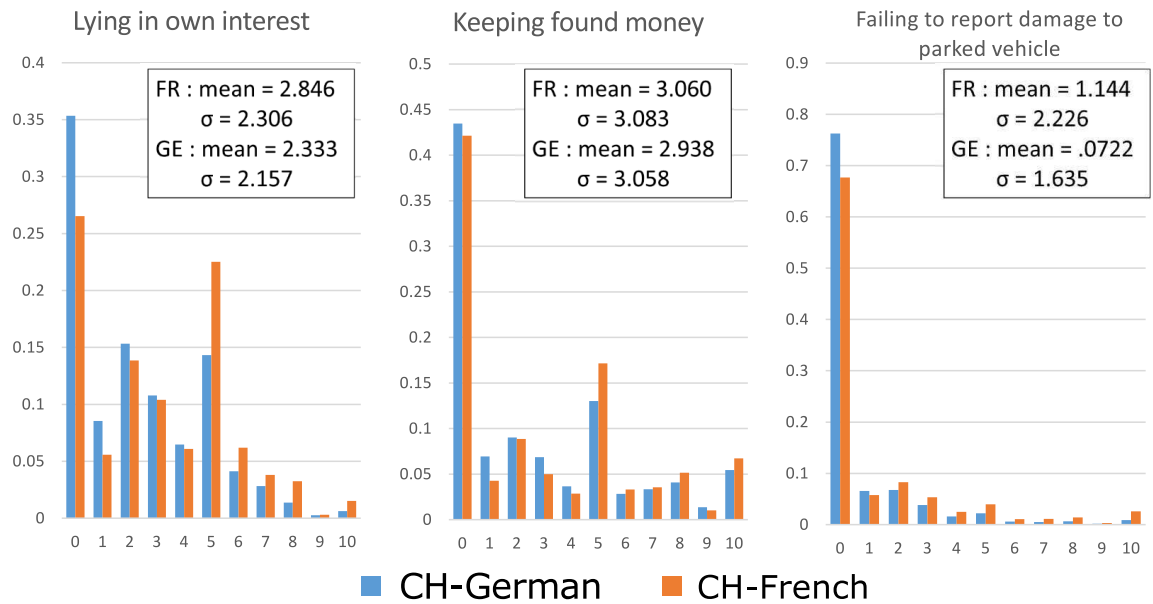
<sup>1</sup>Note that in the sample of Swiss population, the ratio of Swiss-German since birth over Swiss-French since birth is 76,13 percent (Swiss Federal Statistical Office).

Figure 5.2: Preferences for civic-minded behaviour when the public sector is concerned, reversed scale and sum



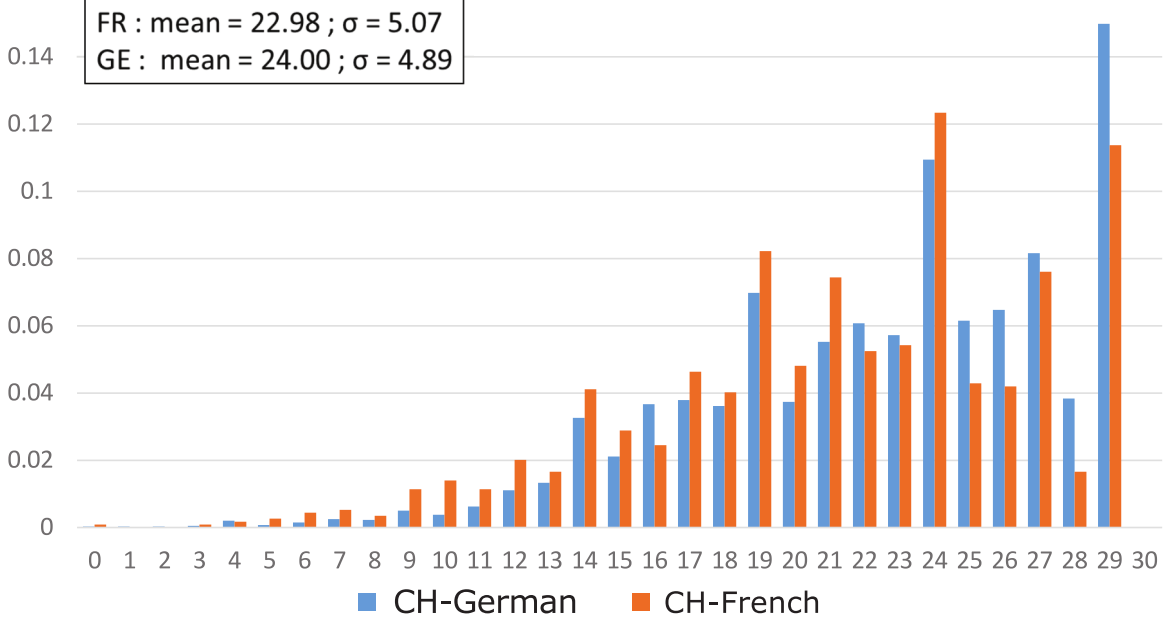
Note: Pref. for Civicness in the Public Sector = 30 -  $\sum$  Pref. for unciviness when the public sector is concerned

Figure 5.3: Preferences for civic-minded behaviour in general



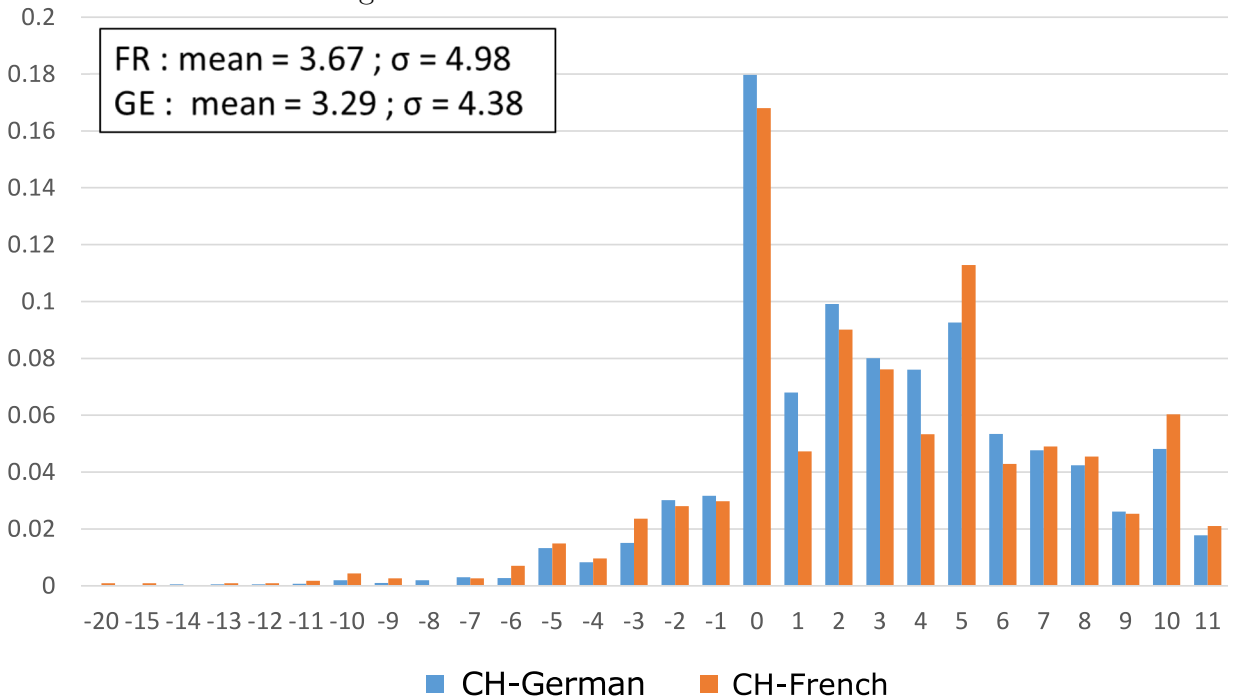
Note: The question was worded as follows: "For each of the following items, tell me to what extent you think that it can be justified if 0 means *never justified* and 10 *always justified*"

Figure 5.4: Preferences for civic-minded behaviour in general, reversed scale and sum



Note: Preferences for civciness in general = 30 -  $\sum$  pref. for uncivciness in general

Figure 5.5: Public Service Motivation



Note: Public Service Motivation = Public Sector Civciness Pref. - General Civciness Pref.



The preliminary descriptive statistics (Table 5.1) show a significant difference in Public Service Motivation (for the public good concern) between French-Swiss and German-Swiss.

Table 5.1: Public Service Motivation across Culture

	Mean CH-German	Mean CH-French	Mean Total	Diff.	Pr(Diff $\neq$ 0)
Public sector civiness	27.3127 (0.0580)	26.7645 (0.1310)	27.2020 (0.0534)	0.5482	0.0000***
General civiness	23.9124 (0.0792)	22.8985 (0.1577)	23.7076 (0.0710)	1.0139	0.0000***
<b>PSM</b>	<b>3.4003</b> <b>(0.0703)</b>	<b>3.8660</b> <b>(0.1551)</b>	<b>3.4944</b> <b>(0.0643)</b>	<b>-0.4657</b>	<b>0.0036***</b>
Observations	3892	985	4877		

## 5.3 Estimation Results

### 5.3.1 Individual Determinants of PSM

When controlling for standard individual characteristics, such as age, age squared, gender, revenue, union member, married, education, political ideology<sup>2</sup> (see Table 5.2 for descriptive statistics of these variables in our sample), the prediction that French-Swiss are more public-service motivated agents is confirmed.

Table 5.2: Descriptive statistics SHP Data

	Mean	Std. Dev.	Min	Max
Age	43.1484	13.8564	16	85
Log Revenue	10.7430	1.0532	4.4543	13.3371
Political Ideology	4.1367	3.0656	-10	10
French	0.2009			
Manager	0.4190			
Job Tenure	0.8719			
Union Member	0.2950			
Been married	0.6604			
Woman	0.5155			
Children	0.5972			
Private sector	0.5872			
Religion	Catholic 0.4032	Protestant 0.4698	Other 0.1271	
Educ. Level	Low 0.0694	Mid-Low 0.3887	Mid-High 0.2387	High 0.3032

Table 5.3 highlights that the effect of being French is highly significant on the PSM score. Taking into account all controls, the isolated estimated effect of the French variable is around 0,50, that is, the motivation score of French-Swiss is 0,50

<sup>2</sup>The variable political ideology is captured by the response to the question: *When they talk about politics, people mention left and right. Personally, where do you position yourself if 0 means "left" and 10 "right" ?*

points higher than the one of German-Swiss, in a (-20, 11) scale. This effect might appear low. However, as the average score of public service motivation is also low among German-Swiss, the relative effect seems larger. For example, relative to the German-Swiss average PSM score, being French improves its score by 14,7 percent (0,50/3,40), that is, increases PSM by 15 percent.

It is interesting to note that most other personal characteristics (*e.g.* education, political ideology, religion) are insignificant, confirming the benefit of employing the difference between scores as our dependent variable. We observe nevertheless that married people and women are more public-service motivated agents or more mission-oriented agents, that is, agents more motivated by the public good concern. The significant negative impact on PSM of having children might be explained by the fact that having children reinforces the familial structure and the ingroup cohesion, at the expense of the motivation to behave in way that serves the outgroup interest, in-line with the studies of Triandis (1989), Jetten, Postmes and McAuliffe (2002) and Postmes, Spears and Cihangir (2001) presented above.

### 5.3.2 Cultural Determinants of PSM

In an attempt to explain the cultural determinants of Public Service Motivation, especially the difference of PSM between French- and German-speaking agents within Switzerland, we refer to the definition given by Hofstede et al. (1991) of individualism and collectivism: *“Individualism pertains to societies in which the ties between individuals are loose: everyone is expected to look after himself or herself and his or her immediate family. Collectivism as its opposite pertains to societies in which people from birth onwards are integrated into strong, cohesive in-groups, which throughout people’s lifetime continue to protect them in exchange for unquestioning loyalty.”* While we could think that individualism leads to a lower sense of public good, the literature shows that, on the contrary, some societies that can be considered as highly individualist exhibit at the same time a very strong attachment to the interest of the Nation. This is the case, for example, of the United States, as well as France. For instance, in an empirical study on undergraduate and graduate students in the U.S. (individualist society) and in Indonesia (collectivist society), Jetten et al. (2002) show a positive relationship between the fact of being individualist and identification with the national identity. Jetten et al. (2002) and Postmes et al. (2001) explain this pattern by the fact that individualist agents have a strong interest to act in a way that maintains the integrity of the group while “collectivists automatically obey ingroup authorities and are willing to fight and die to maintain the integrity of the ingroup, whereas they distrust and are unwilling to cooperate with members of outgroups” Triandis (1989).

In our case, knowing that the French society is more individualist than the German one (see Hofstede et al. (1991)), we could then explain the positive impact of the French variable on PSM by the explanation given above. A way to test this explanation, is to interact the cultural variable French with the score for civic-minded behaviour in general, obtained from the Swiss Household Panel. If the explanation

Table 5.3: Individual Determinants of PSM

Dep. Variable : PSM	(1) Non Pooled	(2) Non Pooled	(3) Pooled	(4) Pooled
French	0.385* (0.229)	0.476** (0.229)	0.466** (0.196)	0.509*** (0.196)
Age		-0.164*** (0.0499)		-0.112*** (0.0419)
Age <sup>2</sup>		0.00113** (0.000539)		0.000575 (0.000457)
Educ. Level : Mid Low		-0.463 (0.422)		-0.373 (0.368)
Educ. Level : Mid High		-0.555 (0.434)		-0.313 (0.380)
Educ. Level : High		-0.517 (0.444)		-0.305 (0.388)
Manager		-0.0988 (0.189)		0.0384 (0.161)
Job tenure		0.269 (0.304)		-0.209 (0.258)
Catholic		-0.338 (0.286)		-0.240 (0.238)
Protestant		-0.227 (0.281)		-0.112 (0.235)
Union member		0.174 (0.187)		0.212 (0.161)
Been married		0.756*** (0.287)		0.923*** (0.242)
Woman		0.366* (0.189)		0.290* (0.161)
Log revenue		-0.142 (0.112)		-0.130 (0.102)
Political ideology		-0.0167 (0.0297)		-0.0256 (0.0248)
Children		-0.616** (0.255)		-0.732*** (0.218)
Year 2014				0.207* (0.107)
Constant	3.378*** (0.0938)	9.833*** (1.183)	3.400*** (0.0800)	8.709*** (1.042)
Observations	2,790	2,790	4,877	4,877
R-squared	0.001	0.057	0.002	0.049

Notes: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . OLS regressions. Dependent variable: Public service motivation. Non pooled data: year 2014. Pooled data: years 2011 and 2014. Standard errors on pooled data are clustered at the individual level.

presented above is right, we should observe that the positive impact of being French (meaning here more individualist) on Public Service Motivation decreases when individual preferences for civic-minded behaviour are stronger. The Table 5.4 reports results that corroborate this explanation.

### 5.3.3 Individual Determinants of Being Motivated

For organizational choices, it is not the magnitude of motivation of each individual but rather the likelihood of having motivated agents that matters. This is the reason why we constructed a dummy variable of motivation that captures whether agents are motivated or not. As the proportion of negative is too low (12%) when considering the variable motivation as a dummy being positive or negative, we constructed the dummy according to the average level of motivation in the whole sample. The dummy takes the value one if the individual has a motivation above the average and zero otherwise, leading 53% of individuals in the non-pooled sample and 61% in the pooled sample being not motivated.

Table 5.5 highlights that the effect of being French is highly significant on the probability of being motivated. Taking into account all controls, the isolated estimated probability effect of the French variable is 22 percentage points in the pooled estimation. Recall that on average 39% of individuals are motivated in the pooled sample, French-Swiss agents are then 56% more likely to be motivated than their German-speaking neighbours, in line with the marginal effect of the French variable on the organizational choices.

It is interesting to note that most other personal characteristics (e.g. education, political ideology, religion) are insignificant, confirming that national fixed effects are more important than individual characteristics. Being motivated is mainly culturally determined. We observe nevertheless that married people are more motivated agents or more mission-oriented agents, that is, agents more motivated by the public good concern.

Table 5.4: Why French-Swiss are more mission-oriented agents?

Dep. Variable :	(1)	(2)
PSM	Non Pooled	Pooled
French	13.47*** (1.037)	10.24*** (0.806)
French × Civicness in general	-0.571*** (0.0414)	-0.426*** (0.0327)
Age	-0.154*** (0.0475)	-0.103** (0.0406)
Age <sup>2</sup>	0.00112** (0.000514)	0.000539 (0.000442)
Educ. Level : Mid Low	-0.263 (0.400)	-0.279 (0.359)
Educ. Level : Mid High	-0.401 (0.413)	-0.260 (0.372)
Educ. Level : High	-0.249 (0.421)	-0.156 (0.378)
Manager	-0.0867 (0.182)	0.0488 (0.156)
Job tenure	0.314 (0.293)	-0.158 (0.253)
Catholic	-0.263 (0.275)	-0.162 (0.231)
Protestant	-0.101 (0.272)	-0.0199 (0.228)
Union member	0.152 (0.179)	0.183 (0.156)
Been married	0.830*** (0.275)	0.969*** (0.232)
Woman	0.473*** (0.182)	0.355** (0.156)
Log revenue	-0.124 (0.111)	-0.131 (0.0997)
Political ideology	-0.0184 (0.0282)	-0.0266 (0.0237)
Children	-0.582** (0.246)	-0.684*** (0.208)
Year 2014		0.193* (0.106)
Constant	8.800*** (1.191)	8.118*** (1.036)
Observations	2,790	4,877
R-squared	0.139	0.095

*Notes:* \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . OLS regressions. Dependent variable: Public service motivation. Non pooled data: year 2014. Pooled data: years 2011 and 2014. Standard errors on pooled data are clustered at the individual level.

Table 5.5: Individual Determinants of Being Motivated – Probit

Dep. Variable :	(1)	(2)	(3)	(4)
Dummy Motivated	Non Pooled	Non Pooled	Pooled	Pooled
French	0.104*	0.130**	0.204***	0.223***
	(0.0592)	(0.0619)	(0.0512)	(0.0531)
Age		-0.0407***		-0.0342***
		(0.0140)		(0.0117)
Age <sup>2</sup>		0.000219		0.000180
		(0.000154)		(0.000131)
Educ. Level : Mid Low		-0.0670		-0.0273
		(0.102)		(0.0877)
Educ. Level : Mid High		-0.0754		-0.000383
		(0.108)		(0.0924)
Educ. Level : High		-0.0870		-0.0336
		(0.109)		(0.0938)
Manager		0.0301		0.0443
		(0.0558)		(0.0472)
Job tenure		0.108		0.0803
		(0.0840)		(0.0705)
Catholic		-0.139*		-0.0832
		(0.0784)		(0.0657)
Protestant		-0.101		-0.0681
		(0.0773)		(0.0647)
Union member		0.100*		0.0767
		(0.0544)		(0.0468)
Been married		0.234***		0.224***
		(0.0852)		(0.0709)
Woman		0.0267		0.0201
		(0.0543)		(0.0460)
Log revenue		-0.0505		-0.0488*
		(0.0333)		(0.0294)
Political ideology		0.00147		-0.00469
		(0.00832)		(0.00711)
Children		-0.151**		-0.150**
		(0.0755)		(0.0631)
Year 2014				0.0336
				(0.0327)
Constant	-0.162***	1.626***	-0.356***	1.171***
	(0.0267)	(0.337)	(0.0228)	(0.298)
Observations	2,790	2,790	4,877	4,877

Notes: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . Standard errors on pooled data are clustered at the individual level. Dependent variable: Dummy taking the value 1 if the respondent's motivation is bigger than the average.

## 5.4 Conclusion

The goal of this chapter was to provide evidence on the fact that the impact of culture on organizational choices, that we have highlighted in Chapters 2 and 3, is mediated by a Public Service Motivation channel.

Our analysis based on micro-data from the Swiss Household Panel allows us to confirm the validity of this hypothesis. We show that this impact of culture on organizational choices is explained by the fact that culture determines the prevalence of public-service motivated agents that are aligned with public, mission-oriented organizations.

This result leads to important policy implications. Privatization policies, or more generally guidelines that favour the involvement of the private sector in the delivery of public services might be counter-productive in countries where agents have a higher PSM. In the same vein, New Public Management guidelines that hamper the alignment between mission-oriented organizations and agents are counter-productive in countries where agents have a higher PSM.

# B

## Appendices

### B.1 Correlation Matrix

	Contracting diff.	Sensitivity	Uncertainty	Budget weight	Income	Dep. Ratio	Debt
Contracting diff.	1.000						
Sensitivity	0.191	1.000					
Uncertainty	0.343	0.209	1.000				
Budget weight	0.648	0.312	0.217	1.000			
Income	0.000	0.018	0.050	0.001	1.000		
Dep. Ratio	0.001	0.028	0.024	-0.001	-0.103	1.000	
Debt	0.000	0.033	0.019	0.002	-0.116	-0.089	1.000



## B.2 Sensitivity of the results to the removal of outliers

In order to check whether our results might be biased by outliers, we estimate again our RDD multinomial model (with city×service explanatory variables), removing successively each of our 22 services. The coefficients associated with the variable French for the choice Private contracting for each of the 22 regressions we ran are reported in Table B.1. We show that, albeit the coefficients slightly vary from one regression to another, the cultural impact remains highly significant for each subsample and no service drives the results.

Table B.1: Robustness check: Removing services

Removed service	French	Removed service	French
Office cleaning	-0.1709*** (0.0577)	Sewage treatment	-0.1622*** (0.0587)
Snow cleaning	-0.1297** (0.0549)	Child day-care centres	-0.1647*** (0.0575)
Road cleaning	-0.1604*** (0.0569)	School canteen	-0.1745*** (0.059)
Road maintenance	-0.1645*** (0.0579)	Specialized services in school	-0.1807*** (0.0605)
Parking control	-0.1758*** (0.0577)	Maintenance of school buildings	-0.1612*** (0.0569)
Refuse collection	-0.1535*** (0.0552)	Security in public spaces	-0.1547** (0.0603)
Solid waste disposal	-0.1374** (0.0581)	Local parks and gardens	-0.1506*** (0.0577)
Animal carcasses removal	-0.1478** (0.0586)	Cemeteries	-0.1632*** (0.0588)
Street lights	-0.1768*** (0.0577)	Trimming of trees	-0.1632*** (0.0579)
Drinking water distribution	-0.1618*** (0.061)	Forests	-0.1566*** (0.0568)
Maintenance of water facilities	-0.1563*** (0.0571)	Public transportation	-0.173*** (0.0567)

*Notes:* \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . Robust Standard errors clustered at the city level in parentheses. Multinomial Logit. Bandwidth: 20 km with linear trend. Reported coefficients are the marginal effects of the variable *French* on private contracting (against base category in-house provision) when removing the corresponding service from the sample. Other RHS variables: Distance, French×Distance, Contracting diff. Uncertainty, Sensitivity, Size (3 classes), Urban, Mountain, Demographic Dep. ratio, Income, Budget weight, Debt, Political ideology (3 classes).

### B.3 Omitted variable bias

If the omitted variable bias is an important issue in a large part of the empirical research in economics, this issue has an overwhelming importance in studies based on Regression discontinuity designs. Indeed, the cornerstone of this empirical approach is that the treatment is the only parameter who changes at the cutoff.

Altonji, Elder and Taber (2005; 2008) provide an indirect way to estimate to what extent unobserved variables are likely to drive the results. More precisely, they provide a way to measure how large the selection on unobservables would need to be to explain away the results. With the underlying assumption that observable parameters are representative of unobservable ones, the more the coefficient associated to the variable of interest decreases in absolute terms when (observable) explanatory variables are added to the model, the more likely we are in presence of an omitted variable bias.

Table B.2 shows raw coefficients for our multinomial logit model, with different specifications, at different bandwidths. The first column reports the results of regressions with no RHS variable but the FRENCH dummy. The second column adds a spatial trend (Distance, Distance  $\times$  FRENCH). Column 3 adds the sets of Efficiency and Political variables (Contracting difficulty, Uncertainty, Sensitivity, Political ideology). Finally, the fourth column corresponds to the fully specified model, with all control variables.

Table B.2: Altonji test for the presence of an omitted variable bias

Bandwidth	Spatial trend	(1)	(2)	(3)	(4)
20 km	Linear	-0.0647	-0.374	-0.584	-0.837
25 km	Linear	0.0195	-0.235	-0.341	-0.711
30 km	Linear	-0.0644	-0.0352	-0.125	-0.540
40 km	Linear	-0.0307	-0.157	-0.200	-0.523
Spatial trend		No	Yes	Yes	Yes
Efficiency and political variables		No	No	Yes	Yes
Control variables		No	No	No	Yes

*Notes:* Multinomial logit. Reported values are the raw coefficients associated to the variable French, for private contracting *vs.* the base category in-house provision. RHS variables: column 1: French; column 2: French, Distance, Distance  $\times$  French; column 3: the same as col. 2 plus Contracting difficulty, Uncertainty, Sensitivity, Political ideology; column 4: the same as col. 3 plus Big, Small, Urban, Mountain, Income, Debt, Budget weight

We observe that the coefficients increase — in absolute value — when new variables are added, for all the bandwidths. In line with Altonji, Elder and Taber (2005; 2008), the fact that the magnitude of the effect increases along with the inclusion of more variables rules out the risk that our results are driven by an omitted variable bias. Indeed, if such a bias exists, its effect would be to *reduce* the magnitude of the results. In other words, it would lead to underestimate the effect of the cultural bias rather than to overestimate it.

## B.4 Continuity of explanatory variables at the language border

A key issue in regression discontinuity designs is that all other explanatory variables do not exhibit any discontinuity at the cutoff. In order to check the balance of covariates at the language border, we estimate the following regression model:

$$Y_i = \alpha_0 + \alpha_1 \cdot F_i + \alpha_2 \cdot D_i + \alpha_3 \cdot F_i \times D_i + \mathbf{X}'_i \beta + \varepsilon_i \quad (\text{B.1})$$

where  $Y_i$  is the variable to test for municipality  $i$ ,  $F_i$  a dummy taking the value 1 for French-speaking municipalities and  $D_i$  the distance to the language border.  $\mathbf{X}'_i$  is a vector of State dummies. For binary variables, we use a logit model with the same specification.

Results are provided in Table B.3. Column 1 reports the mean of a characteristic in the French region, column 2 reports the corresponding mean in the German region, column 3 reports the contrast Swiss French versus Swiss German municipalities, column 4 provides an estimate of the local contrast with a bandwidth of 25 km. In columns 1 and 2, standard deviations are in parentheses; in columns 3 and 4, for municipality data, heteroscedasticity robust standard errors are in parentheses whereas for municipality-service characteristics (*uncertainty*, *sensitivity*, standard errors are clustered at the municipality level.

Table B.3: How do border municipalities compare?

	Mean French	Mean German	Difference All	Difference 25 km, linear
Income [1000 CHF]	0.809 (0.092)	0.613 (0.046)	0.196** (0.094)	0.133 (0.144)
Dependency ratio	66.410 (1.063)	66.689 (0.989)	2.721* (1.482)	8.710*** (0.028)
Debt	0.038 (0.003)	0.031 (0.002)	0.012 (0.004)	-0.010*** (0.020)
Mountain	0.517	0.512	-0.005	-0.523*** (0.163)
Urban	0.225	0.357	-0.132*	-0.128 (0.199)
Small	0.569	0.405	0.164	0.399** (0.187)
Medium	0.345	0.417	-0.072	-0.244 (0.199)
Big	0.086	0.179	-0.093	-0.156 (0.152)
Uncertainty	0.131 (0.029)	-0.147 (0.022)	0.278*** (0.043)	0.483** (0.194)
Sensitivity	-0.069 (0.035)	-0.079 (0.033)	-0.010 (0.049)	-0.154 (0.187)
Number of municipalities	174	225		92
Number of observations	3823	4934		1645

Results indicate that there are significant but slight differences in age structure at the language border. Swiss French border municipalities are also most often smaller than their German neighbours. While there is no significant difference between Swiss-French and Swiss-German municipalities of the whole sample, there are significant differences between border municipalities, with a higher rate for private sector competition within French border municipalities. This might be explained by the fact that there are more German border municipalities in a mountain area than French ones (which can impede access to markets and make transportation less efficient).

# General Conclusion and Policy Implications

Reconcile the tight budget constraints while guaranteeing the reliable provision of high-quality services is an important and complex challenge faced by the public authorities all over the world. In the past decades, many important reforms have been conducted in order to increase the efficiency of the public sector, both through internal reforms (New Public Management) and through an increased recourse to the private sector, using different forms of contracting-out.

In practice, the provision of public services can take many forms. In-house provision, the provision by employees of the public sector, is still the most frequently used way of providing services. Contracting with the private sector can take a large set of arrangements allowing the public authority to have a greater or lesser monitoring on the provided services. These arrangements include in particular performance contracts and concessions. In addition, contracting with other public authorities may allow the authorities — particularly at the local or regional level — to take profit from some of the advantages of contracting (economies of scale) while keeping the provision in the hands of the public sector and hence maximizing the control.

The choice between one mode of provision or another, the so-called *make-or-buy decision* has given rise to a vast literature. However, both the theoretical and the empirical literature has considered only technical determinants of the organizational choices. As is ignores the fact that cultural factors may also affect the organizational choices, the classical literature fails to explain across-country differences in terms of

organizational choices. On the other hand, the public administration literature sheds light on the importance of culture to explain cross-country differences in terms of Public Service Motivation. However, these two fields of research have never been connected so far. **Hence, the goal of this thesis has been to build a bridge between the economic *make-or-buy* literature and the public administration PSM literature, and to investigate for the first time to what extent PSM influences the organizational choices for the delivery of public services.** In order to build this bridge, Switzerland is an ideal laboratory, with its different languages that also correspond to very different cultures, and in particular with its *Roestigraben*.

First of all, we studied the *make-or-buy* decision of Swiss municipalities under the light of the existing theoretical framework. To do this, we addressed the complete absence of data regarding the provision of local public services in Switzerland by running a web-based survey addressed to the municipal secretaries (senior official at the head of the municipal administration) of all Swiss municipalities, which allowed us to construct an original database on the provision of a set of 22 public service in 399 Swiss municipalities. Our results partly corroborate the expectations based on technical variables, which encompass in particular the dimensions described by the Transaction Cost Theory. In line with this theory, we show that a higher contractual difficulty is a deterrent for contracting-out, whereas it increases public contracting. We also show that the size of the municipalities does not affect their propensity to contract with the private sector: small municipalities take profit from economies of scale by contracting with other public authorities rather than with the private sector. By contrast, some of our results diverge from the previous literature. A higher level of uncertainty fosters the resort to both the private and the public sectors. We explain this result by the fact that Swiss municipalities, due to their small size, are not in a position to manage efficiently the demand risk, which leads them to contract-out in order to delegate the risk to the party that is best able to bear it. Finally, a higher level of sensitivity of the residents fosters the resort to the private sector. The most plausible explanation is that the policy makers, due to the small size of the municipalities, expect the private sector to be best able to provide sensitive services at a higher quality. Using an original identification strategy based on the analysis of mispredicted outcomes, we show that cultural factors, proxied by the language, may also be a determinant of the *make-or-buy* decision of Swiss municipalities.

In order to provide a robust causal evidence of the impact of culture on organizational choices, we adopted in the second part of this thesis an identification strategy based on a regression-discontinuity design (RDD) model, in which we use the *Roestigraben* — the border between French- and German-speaking areas — as a cutoff. As a part of this language border runs within three bilingual cantons, this allows us to run within-canton estimations, by restricting our Swiss municipalities database to the municipalities in these three cantons, and including canton fixed effects in our model. Doing so, we are able to consider three accounts for the *make-or-buy* decisions:

efficiency-based determinants (which include but are not limited to transaction-cost determinants), public choice determinants, and cultural determinants. This allows us to compare the organizational choices of municipalities facing an identical (cantonal) institutional framework. Our results suggest a significant and substantial effect of culture: municipalities in the French area are about 60 percent less likely to contract-out a given service to the private sector than a municipality just on the other side of the border, but on the German side.

Whereas the marginal effects measured in our study seem to be particularly high, we observe a strong coherence of the results — and their magnitude — in the different parts of this thesis, despite the fact that these results are based on different datasets and on very different empirical designs. Hence, we believe that these results, despite their very high magnitude, are credible, *a fortiori* if we expect that the initial effect of culture can be reinforced by a feedback mechanism.

We finally run a study based on micro-data from the Swiss Household Panel in order to understand by what channel cultural factors exert an influence on organizational choices. As we expect that there exist a matching between the organizational modes and the agents' public service motivation, and that this matching may lead to more public provision in communities with a high PSM, we tested whether individuals in the French- and German-speaking areas differ in terms of PSM. We proposed a new way of measuring PSM, that allows to control for the level of general civicness, thus capturing the pure public component of PSM. This approach provides a better answer to our questions than the constructs that had been used so far. In line with this hypothesis, we observe that French-speaking respondents exhibit significantly higher PSM than German-speaking respondents, after controlling for individual characteristics, and in particular political ideology. We infer that the impact of culture on the *make-or-buy* decision is driven by differences in terms of alignment between the preferences of the organizations and the agents, which increases the productivity of the public sector.

The main contributions of this thesis are : (1) to show that culture is a major determinant of the organizational choices, even more important than technical factors, which may explain why countries that seem *a priori* to be very similar in terms of economic environment make very different choices regarding the delivery of public services; (2) to show that the impact of culture on organizational choices is mediated by systematic differences in the level of Public Service Motivation; (3) to provide a new way to measure PSM, which allows to disentangle PSM from a general level of civicness; 4) to provide evidence that mission matching leads to productivity gains.

This thesis also leads to important policy implications. As it shows a significant relationship between PSM, organizational choices, and efficiency of public service provision, it sheds light on the fact that culture should not be neglected when making choices related to the provision of public services. Some organizational measures will lead to a significant improvement of the efficiency of the provision when applied to some cultures with which they perfectly fit, whereas applying the same measures to jurisdictions with other cultures will lead to a deterioration of the quality or the efficiency. This is important in more than one respect. First, this means that just copying the practices that seem to be successful in other contexts, *e.g.* in other countries — as many countries did with New Public Management, as well as with privatizations — is not appropriate. This may explain why some policies, for example the New Public Management as well as privatizations, lead to very different results across the countries. This also may call into question the fact that some international organizations (IMF, World Bank) promote the application of identical policies in all countries. Secondly, in the case of a strongly multicultural country like Switzerland (but also Belgium, or Canada), it is essential that the specificities of the different cultural areas are properly considered. This also applies to supra-national entities like the European Union. Finally, our results suggest that small municipalities are less sensitive to transaction cost arguments due to a lack of competencies. Hence, an increase of the size of the municipalities would allow to increase their productive efficiency in the delivery of public services. This result is hence in line with the public finance literature in Switzerland. This makes a case for strengthening the policy of incentives aiming to foster mergers of municipality.

As this dissertation strived to build a bridge between two research fields that had never been connected before, it provides a foundation for several future paths of research.

In addition, albeit the literature has identified some cultural determinants of PSM — *e.g.* religion, risk aversion, or the collectivist or individualist nature of the Society — much remains to be done to understand how the prevalence of motivated agents is culturally determined. The literature suggests that these factors influence PSM, however it does not provide any evidence on the relative impact of these factors. Furthermore, the literature has not addressed yet the question of *how* these factors affect PSM, and how they affect actual behaviours. This opens the door for interesting



research in behavioural economics, which might take the form of lab studies.

As our study focuses on the Swiss case, an important limit of our research is its lack of external validity. Hence, a further path of research would consist in generalizing our findings at a cross-country level, and/or in other multicultural (multi-ethnic or multilingual) countries.

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