Make or Buy for Public Services: Culture Matters for Efficiency Considerations*

Laure Athias† and Pascal Wicht
University of Lausanne

July 3, 2024

Abstract

What determines the share of public employment in countries of similar levels of economic development, at a given size of the State? A standard answer from the public choice literature points to non-benevolent states, emphasizing the importance of constraints on their power. This paper challenges this view by investigating the role of culture and examining whether the relative cost-efficiency of public versus private provision varies across cultures. We build a representative database for contracting choices of municipalities in Switzerland and exploit 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. We find that French-speaking border municipalities are 60% less likely to contract with the private sector than their adjacent German-speaking counterparts. Technical dimensions are much smaller by comparison and their effects do not vary with culture, ruling out cultural bias in municipality choices. We further document that public provision, compared to private provision, increases cost-efficiency within French-speaking Swiss municipalities. These results resonate with the literature emphasizing that public bureaucracies are mission-oriented organizations whose organizational efficiency is enhanced through mission matching, but they also unveil that this mission matching is culturally determined.

Keywords: Culture; Public service delivery; Make-or-buy; Mission-matching; Public sector efficiency
JEL codes: D23, D73, H11, H4, L33, Z10

1 Introduction

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 culture on this economic decision. However, Figure 1 highlights that, at a given size of the State, the share of public employment differs widely across countries of similar levels of economic

*Laure Athias acknowledges financial support from the the Swiss National Science Foundation (Grant No. 100014-130459/1).

†Corresponding author: Laure Athias, University of Lausanne, IDHEAP, Quartier Unil-Mouline, CH-1015 Lausanne, Switzerland. Email: laure.athias@unil.ch

development, and these differences have been persistent. For instance, the ratio of public employment over public spending is more than three times bigger in France than in Germany. This paper challenges the view that there is no room for culture in public service provision.

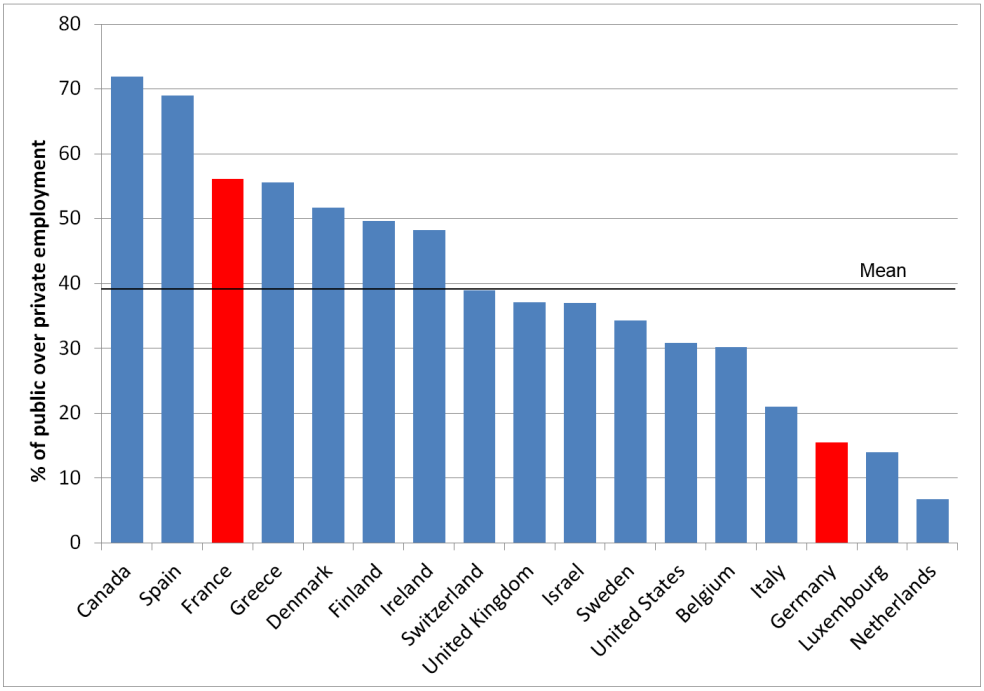


Figure 1: Public over private employment, by public spending p.c.

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

For identification, we exploit cultural differences across Swiss municipalities exposed to the same local markets, policies and institutions. We know that language captures the vertical and horizontal transmission of values (Bisin and Verdier 2001)[1]. The fact that language is a good proxy for culture is especially true in the Swiss context (Büchi (2000)) where the language border between French and German areas is called *Roestigraben*[2]. This emphasizes the fact that this language border is a cultural border with the French-speaking Swiss area being closer to the French culture while the German-speaking Swiss area is closer to the German culture. In addition, as highlighted in Eugster et al. (2011), Novembre et al. (2008) find that genetic markers differ more strongly between people living in Latin Swiss areas and the German Swiss area than within those regions. This *Roestigraben* is all the more interesting that it is a sharp geographic border: within a distance of 5 km, the fraction of French-administratively speaking Swiss municipalities falls from 100 % to 0% across the border (and vice versa for German-administratively

[1]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. Finally, among the channels of transmission of cultural traits, language is the mostly inherited factor, which allows avoiding any problem of endogeneity.

[2]Referring to Rösti, a popular potato-dish in the German area (but not in the French part) of the country.

speaking Swiss municipalities). Furthermore, there is no associated change in geography at this language border. In contrast, the language border between the Italian-speaking area and other language areas is associated with significant geographical features, specifically mountain chains. Additionally, large portions of the language border run *within* Swiss states (cantons) (see Figure 3 in Appendix A). 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. In addition, Eugster and Parchet (2019) find that preferences for public goods differ systematically between French-speaking and German-speaking Swiss municipalities. However, their estimates indicate that tax competition significantly constrains the tax choices of jurisdictions favoring higher taxes within approximately a 20-kilometer radius. Therefore, not only are public service quantity and quality likely to be uniform, but firms and individuals sorting is also likely to be balanced (*i.e.* markets are integrated) across the French-German language border within 20 kilometers. 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 – within 20 km from the border – municipalities on either side of the segments of the language border that run *through* states. Thus, this approach strikes us as a near-to-ideal object of inquiry in order to capture the causal effect of the French culture on choices for public services delivery.

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% less likely to contract with the private sector than their adjacent German-speaking municipalities. In addition, our results indicate that the cultural factor is the most important one in municipalities' make-or-buy decisions.

Several potential explanations exist for this impact. One possibility is that French-speaking Swiss municipalities have a preference, potentially biased, for the public sector over the private sector in public services provision, which may be historically explained. Another possibility stems from differences in the relative cost-efficiency of provision modes across cultures. A large body of literature, both theoretical and empirical, underscores the importance of mission matching for mission-oriented organizations, such as public bureaucracies, in increasing workers' effort without financial incentives and thereby enhancing organizational cost-efficiency (Besley and Ghatak (2005)), Akerlof and Kranton (2005), Prendergast (2007), Spenkuch et al. (2023)). However, French history has also made the public sector's mission orientation more salient in French-speaking cultures, potentially resulting in stronger mission matching. Consequently, it is possible that French-speaking Swiss municipalities are not biased but are more likely to choose in-house provision rather than contracting out to the private sector compared to their German-speaking counterparts because it enhances cost-efficiency for them.

We discuss each channel in turn. First, we examine whether cultural preferences introduce a cultural bias in the municipality choices by investigating the heterogeneity of technical variables across cultures. We find that the effects of standard technical variables do not vary with culture. Second, using data on Swiss municipalities' expenditures, we test whether French-speaking Swiss municipalities with a higher propensity to resort to in-house provision incur lower provision costs than their French-speaking counterparts with a lower propensity for in-house provision. This is exactly what we find. Thus, the observed difference in public service provision modes between French-speaking and German-speaking Swiss municipalities is not due to bias but rather a rational response

to differing cultural and historical contexts that influence organizational efficiency.

Overall, this paper challenges the standard view that the private sector always outperforms the public sector in terms of efficiency. Instead, private provision of public services can lead to efficiency losses when public provision benefits from important worker alignment with the public sector mission, which is culturally determined. Alternatively stated, private provision of public services is not a one-size-fits-all solution. Pushing for more private provision of public services can be counterproductive in some cultures.

The remainder of the paper is as follows. Section 2 provides a literature review on the determinants of contracting choices for the provision of public services. Section 3 provides a detailed description of the data we use, while Section 4 presents our estimation results. In Section 5, we examine specific mechanisms and test for cultural differences in the relative cost-efficiency of provision modes. Section 6 concludes.

2 Literature Review on the Determinants of Government Contracting Choices

Both the theoretical and empirical literature related to the *make-or-buy* decision of public authorities services divide in two streams, namely an efficiency-based approach and a public choice approach.

2.1 Efficiency-based determinants

The transaction-cost approach of the *make-or-buy* decision (above all Williamson (1985)) may be represented as the result of two opposing kinds of forces: centrifugal forces (economies of scale, costs of internal organization) fostering the market (*buy*) solution, and centripetal forces (transaction costs) fostering the internal production (*make*). Factors that increase transaction costs are expected to increase the propensity of public authorities to keep the provision in-house, or possibly to contract with other public jurisdictions. By contrast, factors that reduce transaction costs foster contracting with the private sector.

Contractual difficulty Knowing that opportunistic behaviour increases transaction costs, an important issue is to know which parameters foster such behaviour. The first relevant element is the difficulty of specifying, measuring, and verifying the outcome. The more difficult it is for the public authority to specify precisely *ex ante* in the contract relevant measurable and verifiable properties of the quality of the service considered, the more likely the private provider will reduce its costs at the expense of the service quality (Hart 2003). This question has been addressed by Hart et al. (1997) who showed that, whereas the cost of an inmate is about 10 percent smaller in private prisons than in public ones, the reason to these economies is to be found essentially in a reduction in labour costs with important adverse effects on quality.

Uncertainty Renegotiation may have to occur because unforeseen circumstances emerge over the duration of the contract. This requires an efficient adaptation mechanism for contractual terms to the extent that opportunistic agents may try to take profit from the result of changing circumstances. As the adaptation of the contract is costly, the theoretical prediction is that uncertainty fosters the *make* decision, *ceteris paribus*. Athias

and Saussier (2018) show in particular that high degree of uncertainty anticipated by the contracting parties (survey-based measured) leads to more flexible price provisions.

Asset specificity Another essential factor which fosters opportunism is the so-called *hold up problem* (Klein et al. 1978, Williamson 1979, Williamson 1985). The *ex post* asymmetry in bargaining power can occur when one party has done an important investment in specific assets, e.g. human or physical assets, while returns on investment would be significantly lower when used for purposes other than those initially intended. This investment is then a sunk cost for the firm which has made it. As a result, higher degree of asset specificity is less likely to be associated with *buy* decision, *ceteris paribus*.

All these transaction costs determinants are empirically captured through survey data. The results of the empirical studies are overall in line with the theoretical predictions (see Brown and Potoski (2003) and Levin and Tadelis (2010) on samples of services in U.S. cities), and the effect can be substantial: for instance, Levin and Tadelis (2010) find that a one standard deviation increase in contractual hazards (encompassing the three above determinants) is associated with about forty per cent less private contracting.

2.2 Public Choice determinants

When translating the make-or-buy framework from the industry to the public sector, bias in the choices could be observed to the extent that the decision is made by a political authority. For Stigler (1971, p.3): *"[P]olitics is an imponderable, a constantly and unpredictably shifting mixture of forces of the most diverse nature, comprending acts of great moral virtue [...] and the most vulgar venality."*

Political ideology The first source of deviation between the social optimum and the decisions taken by the public 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. This can lead them to contract out public services despite significant risks and drawbacks, or on contrary to refuse to contract out a service while this would increase efficiency and social welfare. Consequently, the ideological bias may act towards public provision (make) as well as towards contracting out (buy). López-de-Silanes et al. (1997) find 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. By contrast, Levin and Tadelis (2010) find no significant relationship between the make-or-buy decision in a city and the voting results in its county. Picazo-Tadeo et al. (2012) in turn find that municipalities governed by center-right or center-left parties are significantly more prone to contracting out than those governed by left-wing parties. Overall, empirical results do not converge towards a systematic impact of ideology on make-or-buy decisions at the local level. This could be explained by the fact that in small municipalities, direct interactions between elected officials and citizens constrain the ideological considerations in the choices (Bel and Fageda (2017)).

Rent and re-election 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 general interest. Specifically, public choice advocates (Buchanan and

Tullock 1962, Niskanen 1971, Boycko et al. 1996) assume that elected politicians' objective function is to capture a rent while ensuring their re-election. From that perspective, policy makers' contracting choices may either favour the private sector or not. However, municipalities who face strong unions are expected to have a higher propensity to keep the services in the hands of public authorities, *ceteris paribus*. In addition, policy makers are expected to be less likely to contract out particularly politically salient services, for which resident sensitivity to quality is high. Empirical evidence is provided by Brown and Potoski (2003) as well as Levin and Tadelis (2010) who found that municipalities governed by appointed managers were significantly more prone to contract with the private sector than those governed by elected mayors, who are subject to reelection. They also show a significant connection between the make-or-buy decision and the sensitivity of the citizens to the quality of the service. These results are in line with previous results from Warner and Hebdon (2001) who also showed that sensitivity is a relevant element to retain municipalities to contract their services with the private sector. In other words, politically salient services are more likely to be delivered in-house as they are part of politicians' electoral constraint.

City Finances The relationship between contracting decisions and efficiency-based considerations might also be biased by the city's financial condition. It is often argued that contracting with the private sector is a good way to alleviate the budget of public authorities because a more or less important part of funding comes from the private sector. While we know that this argument is doubtful due to the Ricardian Equivalence (the resources saved by the government by not paying the investment should be equal, in present value, to the revenue foregone to the private provider) (Engel et al. (2013)), cities that have an important debt may be more likely to contract the service provision with the private sector to circumvent their debt constraint.

3 Data

3.1 Contracting Choices of Swiss Municipalities

We collected data on the contracting choices of Swiss municipalities by survey. The survey asks city administrators to indicate the mode of provision their municipality had chosen to provide each of the 22 services we were interested in (reported in Table 5 in Appendix B). We selected the most important services at the local level, ranging from very simple ones (public works and office cleaning) to more complex ones (safety, education). The various modes of provision are: in-house provision (either by city employees or by a public company), contracting with another public agency (which includes local government associations), contracting with a private sector firm, and other forms (the services is provided by another level of government, or by non-for-profit organizations). We view contracting-in (contracting with other public entities) as a substitute for in-house provision for a city that is too small to provide a service effectively while retaining more control over provision than may be the case with a private provider. We obtained responses from 377 municipalities among which 54% are German-speaking and 46% are French-speaking. The relevant subsample for the purpose of this study is that of the three bilingal States (Berne, Fribourg and Valais), *i.e.* 142 municipalities among which 84 are German-speaking and 58 are French-speaking.

Table 6 in Appendix B reports the descriptive statistics for our dependant variable. In our whole sample, 54% of the services provided are provided in house, 21% through contracts with the private sector and 22% through contracts with other public entities. The distribution within French-speaking municipalities is quite similar (52% in-house, 22% public contracting, 22% private contracting), as well as within German-speaking municipalities (55% in-house, 22% public contracting, 20% private contracting).

The repartition of the modes of provision for each service is provided in Figure 4 in Appendix B. We can observe that there is an important variation of contracting choices across services, even though the three main procuring methods are used in all services. Some services such as maintenance of school buildings are provided by municipal employees in 91% of the municipalities of our sample. Other services such as refuse collection are contracted out to the private sector over 65% of the time. Specialized services in school, sewage treatments, forests maintenance and animal carcases removal services are in a majority of municipalities contracted with other public entities. The service with the lowest share of municipalities resorting to the private sector is specialized services in school (e.g. school psychologists, logopedics).

3.2 Service and Municipality Characteristics

A central prediction of efficiency-based theories is that difficulties in specifying and monitoring performance requirements are likely to reduce contracting out. 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 (in line with Levin and Tadelis (2010)). 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 consider a single contracting difficulty variable. The first principal component explains 74% of the variation in our four survey variables.

In addition to asking the set of ten city administrators about these four dimensions (which denote *Service* aspects), we included two questions in the survey sent to every city administrator 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. We assume hence that these 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 munici-

pality to another, due to, for instance, the fact that a municipality is experiencing strong demographic growth or increasing urbanization or not. We standardized each variable (Sensitivity and Uncertainty) to have zero mean and unit variance.

For each municipality, we also collected information from official sources on the size of the population[3] (as municipalities may need to be a certain size to produce a given service in-house with any sort of efficiency), the area (urban versus rural and mountain), the local per capita yield of the Federal Direct Tax (FDT, as a proxy for income), the municipal dependency ratio (as a proxy for investment needs), the municipality passive interests per capita (as a measure of indebtedness). 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-speaking area, and negative values for German-speaking municipalities. Table 7 in Appendix B presents descriptive statistics of our explanatory variables.

Finally, we control for the political ideological orientation of the municipalities. In Switzerland, a large part of the elected members of local executives are not members of any 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. Therefore, 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 nonpartisan 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 local executive members has been collected from Ladner's municipal database, 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[4]. For the purpose of our study, we consider the rating for the year 2011. We compute then for each municipality a score that corresponds to the mean of the Parlarating scores of all members of the local executive, attributing to each member of a local executive a value that corresponds to the Parlarating score of her party in her canton. We do not differentiate between the mayor and the other members of the

[3]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.

[4]It is constructed as follows. A set of 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), and the value 0 corresponds to the center (Hug and Schulz (2007)). 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 canton 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.

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. 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 7 in Appendix B. We can observe that almost 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.

4 Estimation and Results

4.1 Estimation Equation

We want to quantify the relationship between the alternative forms of public service provision and efficiency-based factors, public choice factors, and 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[5]. 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*:

$$\ln\left[\frac{Pr(Y_{ij}=m)}{Pr(Y_{ij}=InHouse)}\right] = \alpha_{lm} + \delta_m F_i + \sum_{k=1}^{2}\beta_{lkm}D_i^k + \sum_{k=1}^{2}\beta_{rkm}D_i^k \cdot F_i + Eff'_{ij}\gamma_m + Polit'_{ij}\zeta_m + X'_{ij}\eta_m + \epsilon_{ijm}, \forall m, \quad (1)$$

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)[6]. 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[7]. Eff_{ij} is a vector of efficiency-based variables, $Polit_{ij}$ is a vector of public choice variables and finally X_{ij} is a vector of additional controls, including state fixed effects (dummies).

The key parameter in this regression is δ_m. Indeed, δ_m estimates the contrast in the probability of contracting choices at the border, that is, the difference in the conditional

[5]See Lee and Lemieux (2010) for a comprehensive discussion of spatial regression discontinuity design.

[6]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.

[7]Note that the administrative language changes from 100 percent French-speaking to 100 percent German-speaking at the border, allowing us to use a sharp RDD framework.

mean probability of contracting choices between French and German-speaking municipalities at the border (i.e., when $D_i = 0$). α_{lm} measures the conditional mean of the outcome variable in French-speaking border municipalities if they were German-speaking. The parameters β_{lkm} measure the spatial trend in contracting choices outcomes in the Swiss German area, whereas the parameters β_{rkm} allow for a different spatial trend in the French-speaking area.

In order to capture the causal effect of the language, we focus on the three bilingual states (Bern, Fribourg and Valais) to the extent that French- and German-speaking Swiss municipalities of a same state face the same institutional framework, which we capture through state fixed effects. While we know that the causal effect of culture can be obtained with a bandwidth of 20 km from the border, we run our regressions with other different ad-hoc bandwidths of 30 and 40 km to check for the robustness of our results. This model is estimated with robust standard errors clustered at the municipal level. To be able to estimate the model with robust standard errors clustered at both the *municipal* and *service* levels, 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.

4.2 Estimation Issues

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, 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. Furthermore, Eugster and Parchet (2019) find that preferences for public goods differ systematically between French-speaking and German-speaking Swiss municipalities. However, their estimates indicate that tax competition significantly constrains the tax choices of jurisdictions favoring higher taxes within approximately a 20-kilometer radius. Therefore, we can assume that public service quantity and quality are likely to be uniform across the French-German language border within 20 kilometers.

In addition, a large empirical literature supports the intuitive fact that the degree of competition in the private market is a key issue affecting the relative cost-efficiency of public and private provision. 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 et al. 1985, Atkinson and Halvorsen 1986, Kay and Thompson 1986, Parker 1995, Wallsten 2001, Zhang et al. 2008). In the worst case, the private mono- or oligopolist is clearly less cost-efficient than the public provider. Again, building upon Eugster and Parchet (2019), we can assume that within a distance of 20 km from the border, markets are integrated across the border due to tax competition, that is, that firms and individuals sorting is likely to be balanced.

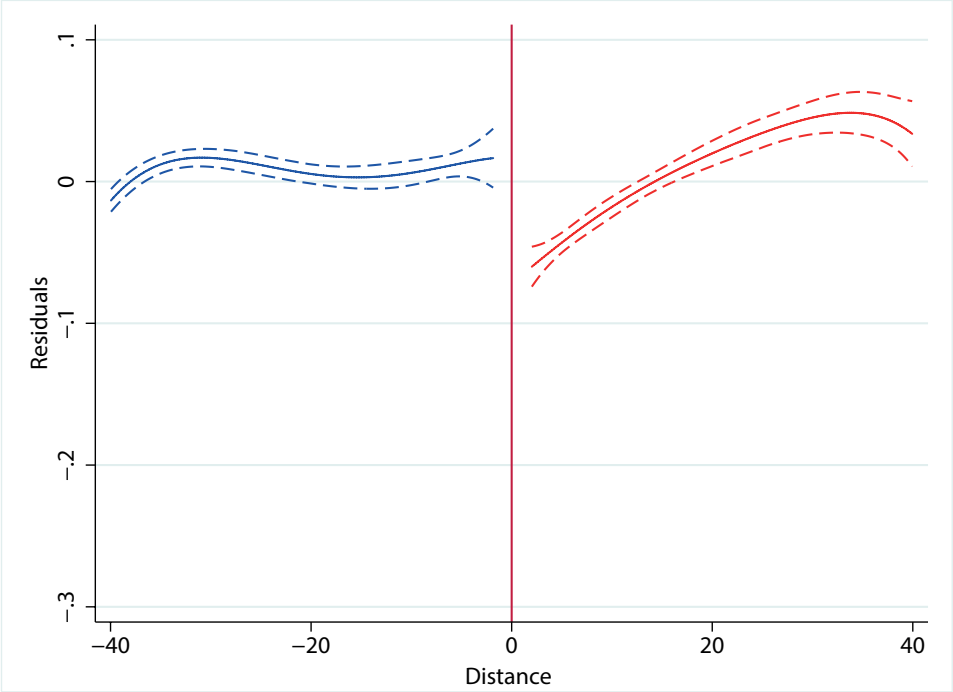
Thus, we will focus on the results associated with a 20 km bandwidth in our RDD models, knowing that in the three bilingual states, 84% of the municipalities are located within 20 kilometers of the language border. Nevertheless, we also report results using larger bandwidths as a robustness check.

4.3 Results

Throughout this 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 2 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 municipality variables (including states fixed effects), without the cultural variable French, as a function of the distance to the language border, as well as 95 percent confidence intervals. We can observe a very strong discontinuity at the border up to a distance of 20 km from the border, in line with Eugster and Parchet (2019) who find that tax competition with German-speaking municipalities constrains the tax choices of French-speaking municipalities within 20 km of the border, even if they have higher preferences for public goods. Beyond this radius, French-speaking municipalities are not constrained and can implement higher taxes to match their preferences for public goods. Therefore, they are more likely to resort to the private sector for the provision of their public services because they offer more of them.

Figure 2: Private provision of public services 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 states fixed effects. Kernel-weighted local polynomial smoothing. Dashed lines are 95% confidence intervals. The vertical line indicates the language border with French-speaking area on the right and the German-speaking area on the left.

Table 1 reports results from the fully specified RDD multinomial logit with different spatial specifications. Table 2 shows the results (coefficient on the French variable) 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, with services fixed effects. Our results indicate an important language border effect: French-

Table 1: RDD-Multinomial Logit Models for Frequency of Public and Private Contracting

	20 km Linear		30 km Linear		40 km Linear	
	Public	Private	Public	Private	Public	Private
Culture						
French	0.0702	-0.1608***	0.0686	-0.1049**	0.0562	-0.0988**
	(0.0524)	(0.0571)	(0.0469)	(0.0518)	(0.0455)	(0.0495)
Dist	-0.0043	-0.0017	-0.002	-0.0006	-0.0017	0.0002
	(0.0034)	(0.0022)	(0.0016)	(0.0016)	(0.0013)	(0.0013)
French $\times$ Dist	0.0021	0.0085*	-0.0017	0.0025	-0.001	0.0028
	(0.0051)	(0.0044)	(0.0032)	(0.0028)	(0.0024)	(0.0027)
Technical factors						
Contracting diff.	0.0914***	-0.0248**	0.0821***	-0.0237***	0.0817***	-0.0237***
	(0.0099)	(0.0096)	(0.0083)	(0.0073)	(0.0075)	(0.0069)
Uncertainty	-0.0086	0.0677***	-0.0058	0.0494***	-0.0066	0.0415***
	(0.0168)	(0.0144)	(0.0139)	(0.0119)	(0.0119)	(0.0119)
Sensitivity	-0.0164	0.0216**	-0.0084	0.0192**	-0.0086	0.0261***
	(0.0101)	(0.0104)	(0.0089)	(0.0091)	(0.0082)	(0.0089)
Other municipality controls						
Big	-0.0655	-0.0563	-0.0879**	-0.085***	-0.0739**	-0.1003***
	(0.0451)	(0.04)	(0.0373)	(0.0298)	(0.0367)	(0.0266)
Small	0.1107***	0.0308	0.106***	0.0073	0.1054***	-0.0046
	(0.0373)	(0.0326)	(0.0341)	(0.0247)	(0.0307)	(0.0252)
Urban	0.0875**	-0.0137	0.0768***	-0.0226	0.0881***	-0.0317
	(0.0354)	(0.0321)	(0.0289)	(0.0276)	(0.0294)	(0.0271)
Mountain	-0.0654*	0.0426	-0.0521	0.0379	-0.0485	0.0269
	(0.0379)	(0.0376)	(0.0329)	(0.0261)	(0.0313)	(0.0271)
Demographic Dependency ratio	0.0011	0.0008	-0.0021	0.0039**	-0.0014	0.0024
	(0.0028)	(0.0023)	(0.0021)	(0.0019)	(0.0018)	(0.0019)
Income	0.0712***	0.0421	0.0285	0.0478**	0.029	0.0494**
	(0.0249)	(0.0354)	(0.0285)	(0.0213)	(0.0289)	(0.0231)
Budget weight	0.0142	0.0298	0.01	0.0324**	0.0078	0.0375***
	(0.0201)	(0.0195)	(0.0166)	(0.016)	(0.0155)	(0.0141)
Debt	-0.2736	-0.4258	-0.2381	-0.3539	-0.2398	-0.2528
	(0.8142)	(0.8521)	(0.5507)	(0.6376)	(0.507)	(0.6326)
Executive: Right	0.0241	-0.0158	0.0228	-0.0148	0.0177	-0.024
	(0.0408)	(0.0356)	(0.0353)	(0.0328)	(0.0337)	(0.0331)
Executive: Non partisan	0.0371	-0.0858**	0.0156	-0.0223	0.0226	-0.016
	(0.0506)	(0.0382)	(0.0361)	(0.035)	(0.0352)	(0.0354)
Observations	1290	1290	1809	1809	2157	2157
Number of municipalities	72	72	100	100	120	120

Notes: Reported coefficients are marginal effects on probability of different modes of service provision. In-house provision is the base outcome. All regressions control for states fixed effects. Robust standard errors are clustered at the municipality level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

speaking border municipalities are 60% less likely to contract with the private sector than their German-speaking adjacent municipalities (recall that on average about 21% of services are contracted out and the estimated probability change is -12.64 percentage points in our specification with services fixed effects). By contrast, we do not observe a robust evidence of an impact of the language border in the propensity to contract with other public entities.

Regarding the efficiency-based predictions, they are partly corroborated. First, we observe, as expected, that greater contracting difficulty is significantly associated with more public contracting and less private sector contracting. The impact of contracting difficulty on public contracting is 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. In terms of magnitude, we find that a one standard deviation increase

Table 2: Logit Estimation for the French variable

Method	Dep. Var.	City X Service	Service FE
Logit	Private (vs. Public)	-0.1536***	-0.1264*
		(0.0504)	(0.0652)

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

in contracting difficulty is associated with a decrease in the probability of contracting out of 11%. Second, we observe that services for which future requirements are difficult to anticipate (variable *Uncertainty*) and for which residents' sensitivity is higher are more often contracted out to private sector firms. These results are not in line with the prediction according to which these factors are associated with higher transaction costs. It 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) and sensitivity (e.g. the risk of having a public discontent in the future). On one side, this might improve productive efficiency if the third part is best able to manage these risks 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, Välilä 2005). On the other side, this might be consistent with the view that public authorities resort to private contracting to reduce their accountability (see Ellman (2006) and Athias (2013) for theoretical insights into this issue). As for public choice predictions, we find no effect of municipality finances on make-or-buy decisions (*Debt* variable), nor of the political ideology of the municipality. These results are however in line with the Swiss institutional specificities, where strong citizen control may render political variables less relevant. Finally, regarding the impact of control variables, we find, as expected, that small municipalities are more prone to contract with other public entities to take advantage of economies of scale (they may also not have sufficient competencies to efficiently manage certain services).

5 Testing for Channels of Causality

The previous section has established a robust causal impact of the language border on the modes of provision of public services in Swiss municipalities, with French-speaking border municipalities being significantly less likely to contract with the private sector. In addition, our results indicate that the cultural factor is the most important one in municipalities' make-or-buy decisions. Several potential explanations exist for this impact. One possibility is that French-speaking Swiss municipalities have a preference, potentially biased, for the public sector over the private sector in public services provision. Another possibility stems from differences in the relative cost-efficiency of public provision across cultures. In this section, we discuss each channel in turn.

5.1 Cultural Bias

Greif (1994) has theoretically highlighted the importance of culture in determining institutional structures and in leading to their path dependence. The unique aspects of French history may have created a cultural legacy for French-speaking public authorities that favors public provision of public services. As highlighted by Athias (2024), France exemplifies Mukand and Rodrik (2018)'s model where ideas and vested interests intertwine to form a factual institutional narrative. Specifically, the current French Constitution emerged from the republican and universalist ideals of the French Revolution and the state capture by the Nobles of the Robe, who, to consolidate their legitimacy, bound public services with the State under the Third Republic. This appropriation explains why collective goods are referred to as public services in France. In contrast, the European Union, influenced by Germany, uses the term "services of general interest" to distinguish between collective goods and the public sector. Consequently, in French-speaking cultures, compared to German-speaking cultures, public authorities are more likely to view themselves as responsible for delivering public services. This cultural perspective could explain the observed differences in private sector involvement in public services provision, potentially resulting in a cultural bias.

To check whether culture introduces a potential bias in Swiss municipalities' choices, we estimate the heterogeneous effects of the technical variables across cultures in the multinomial logit model. Results in Table 3 clearly indicate that French-speaking border municipalities are not biased in their make-or-buy choices, with coefficients on the interaction terms very close to zero.

5.2 Differences in the Relative Cost-Efficiency of Public Provision across Cultures

A large body of literature, both theoretical and empirical, underscores the importance of mission matching for mission-oriented organizations, such as public bureaucracies, in increasing workers' effort without financial incentives and thereby enhancing organizational cost-efficiency (Besley and Ghatak (2005)), Akerlof and Kranton (2005), Prendergast (2007), Spenkuch et al. (2023)).

The aforementioned specifics of French history have also led to the public sector's mission orientation being more salient in French-speaking cultures. As a result, mission matching may be stronger in these areas, leading to better cost-efficiency in the public sector. Therefore, French-speaking Swiss municipalities might not be biased but rather more inclined to choose in-house provision over contracting out to the private sector compared to their German-speaking counterparts, as it enhances cost-efficiency for them. To test this hypothesis, we estimate the following RDD model:

$$\ln y_{it} = \alpha_l + \delta French_i + \sum_{k=1}^{2} \beta_{lk} D_i^k + \sum_{k=1}^{2} \beta_{rk} D_i^k \cdot French_i + \theta PrInhouse_i + \gamma PrInhouse_i \cdot French_i + X_{it}'\eta + Provided_i'\phi + \lambda_t + \epsilon_{it} \quad (2)$$

where y_{it} is our measure of per capita municipal spending in the following three categories: expenditure for personnel (wages), purchases of goods and services, and payments to other public entities. Doing so, our variable is cleaned-up from several expenditures

Table 3: RDD-Multinomial Logit Models and Cultural Bias

	(1)		(2)		(3)	
	Public	Private	Public	Private	Public	Private
Cultural aspects						
French	0.0643	-0.152***	0.0815	-0.1608***	0.0702	-0.1608***
	(0.0522)	(0.0586)	(0.0534)	(0.0558)	(0.0525)	(0.0573)
Distance	-0.0043	-0.0017	-0.0048	-0.0017	-0.0043	-0.0017
	(0.0033)	(0.0022)	(0.0034)	(0.0022)	(0.0034)	(0.0022)
French X Distance	0.002	0.0085*	0.0023	0.0086*	0.0021	0.0085*
	(0.0051)	(0.0044)	(0.0052)	(0.0044)	(0.0051)	(0.0044)
Technical factors						
French X Contr. Diff.	0.0201	0.0094				
	(0.0159)	(0.0143)				
French X Uncertainty			0.0448	-0.0079		
			(0.0311)	(0.0252)		
French X Sensitivity					0.0001	0.0001
					(0.0192)	(0.0179)
Contr. Diff.	0.0812***	-0.0295**	0.0918***	-0.0247**	0.0914***	-0.0248**
	(0.0125)	(0.0118)	(0.0099)	(0.0096)	(0.0099)	(0.0096)
Uncertainty	-0.0095	0.0676***	-0.0337	0.0728***	-0.0086	0.0677***
	(0.017)	(0.0143)	(0.0259)	(0.0197)	(0.0168)	(0.0143)
Sensitivity	-0.0155	0.0222**	-0.0157	0.0216**	-0.0164	0.0216
	(0.0101)	(0.0105)	(0.0101)	(0.0105)	(0.0161)	(0.0143)
Other controls						
Big	-0.0651	-0.0561	-0.0623	-0.0566	-0.0655	-0.0563
	(0.0445)	(0.0401)	(0.0467)	(0.0398)	(0.0452)	(0.0401)
Small	0.1116***	0.0308	0.1111***	0.031	0.1107***	0.0308
	(0.037)	(0.0326)	(0.0369)	(0.0325)	(0.0371)	(0.0326)
Urban	0.0886**	-0.0138	0.0865**	-0.0134	0.0875**	-0.0137
	(0.0351)	(0.0321)	(0.0357)	(0.0321)	(0.035)	(0.0317)
Mountain	-0.0673*	0.0421	-0.0722*	0.0441	-0.0654*	0.0426
	(0.0378)	(0.0376)	(0.0381)	(0.0377)	(0.0379)	(0.0376)
Demographic Dependancy Ratio	0.0013	0.0008	0.0014	0.0008	0.0011	0.0008
	(0.0028)	(0.0023)	(0.0028)	(0.0023)	(0.0028)	(0.0023)
Income	0.0727***	0.042	0.071***	0.0437	0.0712***	0.0421
	(0.0255)	(0.0355)	(0.0256)	(0.036)	(0.0251)	(0.0353)
Budget weight	0.0129	0.0288	0.011	0.0306	0.0142	0.0298
	(0.02)	(0.0196)	(0.0203)	(0.0195)	(0.0201)	(0.0194)
Debt	-0.2461	-0.4316	-0.2943	-0.398	-0.2738	-0.4259
	(0.8216)	(0.8551)	(0.8237)	(0.8457)	(0.8102)	(0.8512)
Executive: Right	0.0258	-0.0158	0.0215	-0.0147	0.0241	-0.0158
	(0.0412)	(0.0356)	(0.0406)	(0.0354)	(0.0411)	(0.0355)
Executive: Non partisan	0.0386	-0.0859**	0.0356	-0.0861**	0.0371	-0.0858**
	(0.0507)	(0.0381)	(0.0511)	(0.038)	(0.0505)	(0.0384)

Notes: 20 km Bandwidth. 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 states dummies. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

on which the municipality has no control (e.g social grants that are determined by cantonal and federal norms, and spendings due to past decisions (such as interests and depreciations)). Two variables are constructed based on the previous data: $PrInhouse_i$ corresponds to the fraction of the services that are provided in-house in municipality i; $Provided_i'$ is a vector of dummies taking the value 1 if the service j is provided in municipality i (whatever the mode of provision). Finally X_{it}' is a vector of other municipality controls (including states fixed effects), and λ_t are year fixed effects. Table 8 in Appendix B presents the descriptive statistics for the new variables used in this section.

The coefficients can be interpreted as follows: δ measures the public spending p.c. differential between border French and German-speaking municipalities when $PrInhouse = 0$. θ measures the public spending p.c. differential among German-speaking border municipalities according to their propensity to provide services in-house. Similarly, γ captures the public spending p.c. differential among French-speaking border municipalities according to their propensity to provide in-house. We also estimate the same model without spatial trend.

An important presumption in this model is that the quality of public services is uniform across border municipalities. We believe this presumption is valid for the following reasons. First, we compare French-speaking and German-speaking municipalities across the language border that belong to the same states (cantons). Due to the principle of executive federalism, municipalities are responsible for delivering public services according to the standards set by the state or, in some cases, the federal government. For instance, considering the services indicated in Table 5, the federal Waters Protection Ordinance governs waste-water disposal and treatment, setting maximum pollutant levels for water discharged into the environment. Similarly, drinking water quality and waste management are subject to federal standards. In education-related services (such as specialized services, school canteens, and child day-care centers), state laws specify requirements regarding teacher and educator qualifications, as well as the maximum number of children per caregiver. Second, as already discussed, Eugster and Parchet (2019) find that preferences for public goods differ systematically between French-speaking and German-speaking Swiss municipalities. However, their estimates indicate that tax competition significantly constrains the tax choices of jurisdictions favoring higher taxes within approximately a 20-kilometer radius. Therefore, public services quantity and quality are likely to be uniform across the French-German language border within 20 kilometers. Finally, in Equation (2), we identify the impact of the provision mode within states and within French- and German-speaking border municipalities. Specifically, γ captures the public spending p.c. differential among French-speaking border municipalities according to their propensity to provide in-house (and θ captures the same among German-speaking border municipalities). This strategy further alleviates potential unobserved heterogeneity bias related to service quality insofar as the quality of public services is highly likely to be homogeneous across border municipalities of the same side of the language border within the same state.

Table 4 reports the estimations of these RDD and non-RDD models. Our results show that in-house provision is more cost-efficient on the French-speaking side of the language border: γ – the coefficient of the interaction term – is negative and statistically significant under the 1% threshold in both models. In terms of magnitude, a 10% increase of the number of services provided in-house leads to a reduction of public spending per capita of about 10 percentage points in French-speaking Swiss municipalities. By contrast, in-house

provision tends to increase public spendings per capita in the German-speaking side[8].

Table 4: Effects of in-house versus contracting within and across culture

	RDD Ln (Spendings p.c.)	non-RDD Ln (Spendings p.c.)
French	0.466**	0.401*
	(0.215)	(0.201)
Dist	0.0201**	
	(0.00765)	
French × Dist	-0.0390**	
	(0.0158)	
Pr. In House	0.266	0.446**
	(0.209)	(0.220)
French × Pr. In House	-0.962***	-0.991***
	(0.318)	(0.333)
Big	0.0503	-0.0259
	(0.108)	(0.111)
Small	-0.266***	-0.211**
	(0.0897)	(0.0870)
Urban	0.267*	0.149
	(0.155)	(0.118)
Income	5.95e-05	0.000111
	(6.54e-05)	(7.44e-05)
Mountain	0.0342	0.225
	(0.117)	(0.136)
Debt	-1.504	-1.504
	(1.298)	(1.439)
Demographic Dependency ratio	0.0608	0.0542
	(0.493)	(0.465)
Executive: Non partisan	0.119	0.0975
	(0.0856)	(0.0846)
Executive: Right	0.0533	0.0126
	(0.0971)	(0.0904)
Constant	7.191***	7.365***
	(1.057)	(0.985)
Observations	138	138
R-squared	0.712	0.663

Notes: 20 km Bandwidth. OLS estimations for the years 2013 and 2014. Additional controls: dummy variables for each service (1 if the service is provided in the municipality). All regressions include state and year dummies. Standard errors are clustered at the municipality level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Thus, these results show that in-house provision is more efficient than private provision in the French-speaking area, corroborating that mission matching in the public sector is culturally determined.

6 Conclusion

This paper shows that culture significantly influences the choices made by public authorities in the provision of their services, because it affects the relative cost-efficiency of public provision. French-speaking Swiss municipalities are 60% less likely to contract out to the private sector compared to their German-speaking counterparts, because public provision is relatively more cost-efficient for them. French history has heightened the mission orientation of the public sector in French-speaking cultures, leading to stronger mission matching and, consequently, increased public sector efficiency.

[8]These results corroborate the notion that language captures culture (as in Brown et al. (2018)) rather than language barrier (as in Tam and Tian (2023) and Deltas and Evenett (2023)).

Cultural legacies that foster a strong public spirit in the public sector can influence the role of the private sector in the economy and explain bureaucratic conservatism and resistance to public sector reforms that interfere with mission matching.

References

Akerlof, George A. and Rachel E. Kranton (2005) "Identity and the Economics of Organizations," *Journal of Economic Perspectives*, 19 (1), 9–32, 10.1257/0895330053147930.

Athias, Laure (2013) "Local Public-Services Provision under Public Private Partnerships: Contractual Design and Contracting Parties Incentives," *Local Government Studies*, 39 (3), 312–331.

——— (2024) "Common Good Institutions, Identity in the Workplace, and Value Dynamics," MPRA Paper 120588.

Athias, Laure and Stéphane Saussier (2018) "Are Public Private Partnerships that Rigid? And Why? Evidence from Price Provisions in French Toll Road Concession Contracts," *Transportation Research Part A: Policy and Practice*, 111, 174–186.

Atkinson, Scott E. and Robert Halvorsen (1986) "The relative efficiency of public and private firms in a regulated environment: The case of U.S. electric utilities," *Journal of Public Economics*, 29 (3), 281–294.

Bel, Germà and Xavier Fageda (2017) "What have we learned from the last three decades of empirical studies on factors driving local privatisation?," *Local Government Studies*, 43 (4), 503–511, 10.1080/03003930.2017.130.

Besley, Timothy and Maitreesh Ghatak (2005) "Competition and Incentives with Motivated Agents," *American Economic Review*, 95 (3), 616–636, 10.1257/0002828054201413.

Bisin, Alberto and Thierry Verdier (2001) "The Economics of Cultural Transmission and the Dynamics of Preferences," *Journal of Economic Theory*, 97 (2), 298–319.

Boycko, Maxim, Andrei Shleifer, and Robert W. Vishny (1996) "A Theory of Privatization," *The Economic Journal*, 106, 309–319.

Brown, Martin, Caroline Henchoz, and Thomas Spycher (2018) "Culture and financial literacy: Evidence from a within-country language border," *Journal of Economic Behavior & Organization*, 150, 62–85, https://doi.org/10.1016/j.jebo.2018.03.011.

Brown, Trevor L. and Matthew Potoski (2003) "Transaction Costs and Institutional Explanations for Government Service Production Decisions," *Journal of Public Administration Research and Theory*, 13 (4), 441–468.

Buchanan, James M. and Gordon Tullock (1962) *The Calculus of Consent*, Ann Harbor: University of Michigan Press.

Büchi, Christophe (2000) *Röstigraben: Das Verhältnis zwischen deutscher und welscher Schweiz. Geschichte und Perspektiven*, Zurich: NZZ Libro.

Debande, Olivier (2002) "Private Financing of Transport Infrastructure: An Assessment of the UK Experience," *Journal of Transport Economics and Policy*, 36 (3), 355–387.

Deltas, George and Simon Evenett (2023) "Language as a Trade Barrier in Public Procurement: Evidence from Georgia's Policies on English Language Documentation," 10.2139/ssrn.4652768, mimeo.

Ellman, Matthew (2006) "Does privatising public service provision reduce accountability?" Economics Working Papers 997, Department of Economics and Business, Universitat Pompeu Fabra.

Engel, Eduardo, Ronald Fischer, and Alexander Galetovic (2013) "The Basic Public Finance of Public–Private Partnerships," *Journal of the European Economic Association*, 11 (1), 83–111, 10.1111/j.1542-4774.2012.01105.x.

Eugster, Beatrix, Rafael Lalive, Andreas Steinhauer, and Josef Zweimüller (2011) "The Demand for Social Insurance: Does Culture Matter?" *The Economic Journal*, 121, 413–448.

Eugster, Beatrix and Raphaël Parchet (2019) "Culture and Taxes," *Journal of Political Economy*, 127 (1), 296–337, 10.1086/700760.

Färe, Rolf, Shawna Grosskopf, and James Logan (1985) "The Relative Performance of Publicly-Owned and Privately-Owned Electric Utilities," *Journal of Public Economics*, 26 (1), 89–106.

Greif, Avner (1994) "Cultural Beliefs and the Organization of Society: A Historical and Theoretical Reflection on Collectivist and Individualist Societies," *Journal of Political Economy*, 102 (5), 912–950.

Hart, Oliver (2003) "Incomplete Contracts and Public Ownership: Remarks, and an Application to Public Private Partnerships," *The Economic Journal*, 69–76.

Hart, Oliver, Andrei Shleifer, and Robert W. Vishny (1997) "The Proper Scope of Government, Theory and an Application to Prisons," *The Quarterly Journal of Economics*, 112, 1127–1161.

Hug, Simon and Tobias Schulz (2007) "Left—Right Positions of Political Parties in Switzerland," *Party Politics*, 13 (3), 305–330, 10.1177/1354068807075938.

Kay, John and David Thompson (1986) "Privatisation: A Policy in Search of a Rationale," *The Economic Journal*, 96 (381), 18–32.

Klein, Benjamin, Robert G. Crawford, and Armen A. Alchian (1978) "Vertical Integration, Appropriable Rents, and the Competitive Contracting Process," *Journal of Law and Economics*, 21 (2), 297–326.

Lee, David S. and Thomas Lemieux (2010) "Regression Discontinuity Designs in Economics," *Journal of Economic Literature*, 48 (2), 281–355.

Levin, Jonathan and Steven Tadelis (2010) "Contracting for Government Services: Theory and Evidence from U.S. Cities," *The Journal of Industrial Economics*, 58 (3), 507–541.

López-de-Silanes, Florencio, Andrei Shleifer, and Robert W. Vishny (1997) "Privatization in the United States," *RAND Journal of Economics*, 28 (3), 447–471.

Mukand, Sharun and Dani Rodrik (2018) "The Political Economy of Ideas: On Ideas Versus Interests in Policymaking," Working Paper 24467, National Bureau of Economic Research, 10.3386/w24467.

Niskanen, William A. (1971) *Bureaucracy and Representative Government*, Chicago: Aldine-Atherton.

Novembre, John, Toby Johnson, Katarzyna Bryc et al. (2008) "Genes mirror geography within Europe," *Nature*, 456, 98–101.

Parker, David (1995) "Ownership, Organizational Changes and Performance," in Clarke, Thomas and Christos Pitelis eds. *The Political Economy of Privatization*, 2nd edition, 31–53, London and New York: Routledge.

Picazo-Tadeo, Andrés, Francisco González-Gómez, Jorge Guardiola Wanden-Berghe, and Alberto Ruiz-Villaverde (2012) "Do ideological and political motives really matter in the public choice of local services management? Evidence from urban water services in Spain," *Public Choice*, 151.

Prendergast, Canice (2007) "The Motivation and Bias of Bureaucrats," *American Economic Review*, 97 (1), 180–196, 10.1257/aer.97.1.180.

Spenkuch, Jörg L., Edoardo Teso, and Guo Xu (2023) "Ideology and Performance in Public Organizations," *Econometrica*, 91 (4), 1171–1203, https://doi.org/10.3982/ECTA20355.

Stigler, George J. (1971) "The Theory of Economic Regulation," *The Bell Journal of Economics and Management Science*, 2 (1), 3–21.

Tam, Lewis H.K. and Shaohua Tian (2023) "Language barriers, corporate site visit, and analyst forecast accuracy," *The Quarterly Review of Economics and Finance*, 91, 68–83, https://doi.org/10.1016/j.qref.2023.07.010.

Välilä, Timo (2005) "How expensive are cost savings? On the economics of public-private partnerships," EIB Papers 4/2005, European Investment Bank, Economics Department.

Wallsten, Scott J. (2001) "An Econometric Analysis of Telecom Competition, Privatization, and Regulation in Africa and Latin America," *Journal of Industrial Economics*, 1–19.

Warner, Mildred and Robert Hebdon (2001) "Local Government Restructuring: Privatization and Its Alternatives," *Journal of Policiy Analysis and Management*, 20 (2), 315–336.

Williamson, Oliver E. (1979) "Transaction Cost Economics: the governance of contractual relations," *Journal of Law and Economics*, 22 (2), 233–261.

——— (1985) *The economic institutions of capitalism: firms, markets, relational contracting*: Free Press.

Zhang, Yin-Fang, David Parker, and Colin Kirkpatrick (2008) "Electricity Sector Reform in Developing Countries: an Econometric Assessment of the Effects of Privatization, Competition and Regulation," *Journal of Regulatory Economics*, 33, 159–178.

A Appendix: Map of Switzerland

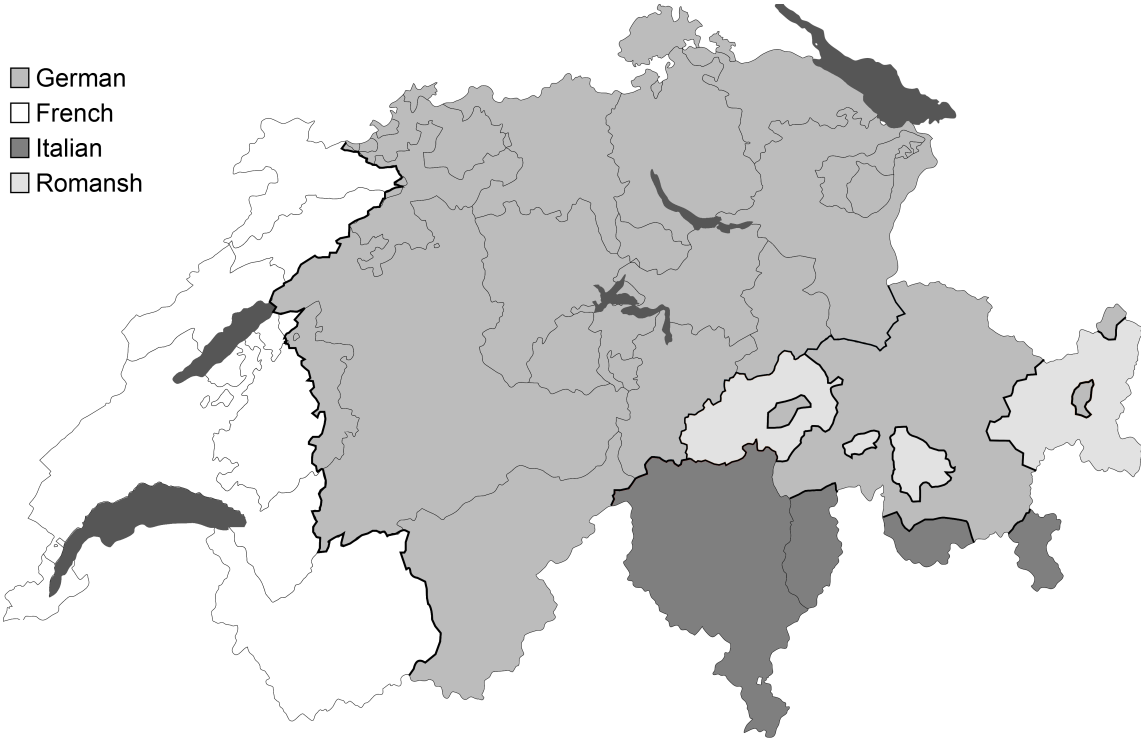


Figure 3: Administrative language, by municipality

Source. Swiss Federal Statistical Office.

Notes. This Figure displays a map of Switzerland shaded according to the administrative language of each municipality. This map highlights the sharp cut off between French and German areas. Within a distance of 5 km, the fraction of French-administratively speaking Swiss municipalities falls from 100 % to 0% (and vice versa for German-administratively speaking Swiss municipalities). However, there is no associated change in geography at this language border, and large portions of the language border run within three cantons (Bern, Fribourg and Valais). By contrast, the Italian-speaking area is clearly separated from other language areas by mountain chains.

B Descriptive Statistics

Table 5: The 22 services

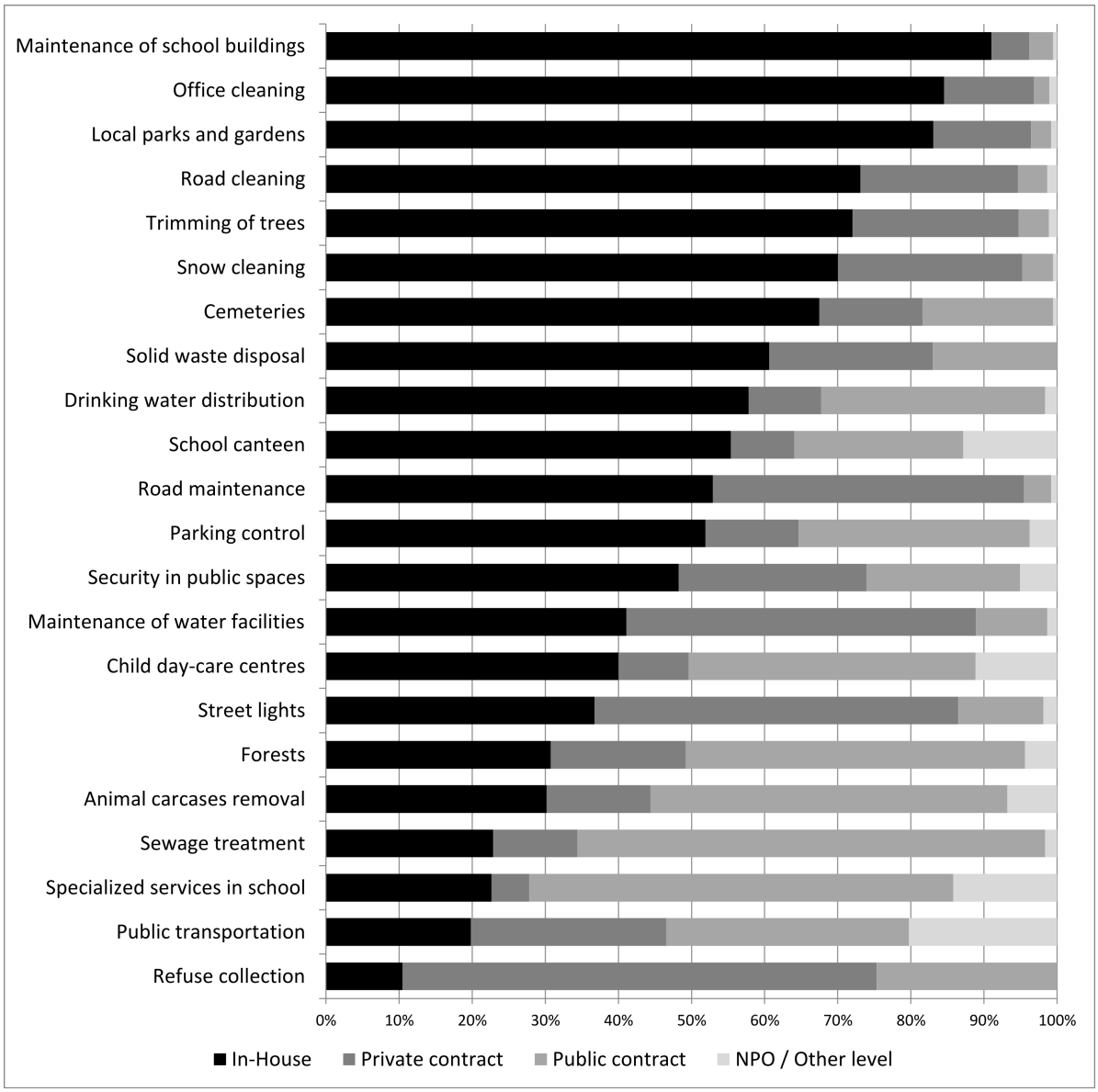
Office cleaning	Sewage treatment
Snow-cleaning	Child day-care centres
Road-clearing	School canteen
Road maintenance	Specialized services in school
Parking control	Maintenance of school buildings
Refuse collection	Security in public spaces
Solid waste disposal	Local parks and gardens
Animal carcases removal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

Table 6: Descriptive statistics of the modes of provision

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

Notes: 'Public contract' corresponds to contracting with other public entities. 'Private contract' corresponds to contracting with the private sector. 'Other' corresponds to services provided by another level of government, or by non-for-profit organizations.

Figure 4: Modes of provision by services



Notes: 'Public contract' corresponds to contracting with other public entities. 'Private contract' corresponds to contracting with the private sector. 'NPO/Other level' corresponds to services provided by another level of government, or by non-for-profit organizations.

Table 7: Descriptive statistics for our explanatory variables

	Mean	Std Dev	Min	Max	Source of the data
City × Service characteristics					
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
City characteristics					
Language	French 0.41	German 0.59			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 [1000 CHF]	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
Ideology	Left 0.134	Right 0.416	Non Partisan 0.451		Authors' computation using *Parlarating* data
Mountain	Yes 0.49	No 0.51			Swiss Federal Statistical Office: "Niveaux géographiques de la Suisse 2012"
Service characteristics					
Contracting Diff.	0.00	1.00	-3.13	3.42	Athias Wicht Restricted survey
Budget weight	0.00	1.00	-1.19	2.47	Athias Wicht Restricted survey

Table 8: Descriptive statistics for the expenditure estimations

	Mean	Std. Dev.	Min	Max
Expenditure p.c.	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	0.8