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SPECIALISATION PATTERNS IN THE ENERGY SERVICE CONTRACTING MARKET

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Overview

Energy service contracting is an organisational innovation for the supply of useful energy, e. g. of heat instead of gas. There is a high variety of actors involved in the supply of contracting arrangements. This includes specialised contracting firms, consulting engineers, equipment manufacturers, municipal utilities and the real estate industry. This variety is surprising, because we would expect that seemingly homogeneous transactions are supplied under similar governance structures (Ménard 1996; Ménard, Saussier, 2000). This paper investigates possible explanations and consequences of this variety with a particular focus on the role of municipal utilities.

Based on an empirical record of approximately 2,500 contracting projects in the domain of space heating in Germany, the paper depicts specialisation patterns of contractors on specific project types. The rationale for such specialisations is explained from the view of transaction cost economics. We distinguish between contracting projects as a downward integrated business segment in the value-added chain and projects as a delivered as stand-alone market-oriented service. The former applies, for example, to municipal utilities and equipment manufactures and the latter to specialized contractors who pursue contracting as exclusive core business. According to transaction cost economics, more integrated governance forms provide greater protection for specific investments, e. g. CHP, whereas the pure market is more cost-efficient and competitive.

Methods

The specialization patterns are computed with descriptive statistics including cross tabulations. Further, a multinomial logit regression with five alternatives of contracting actors, e. g. municipal utilities and specialized contractors, is applied to deduce the effects of the project features on the choice of governance mode. As an important exogenous variable, asset specificity of investment is measured by dummy variables. Whereas combined heat and power projects account for physical asset specificity, the type of building (private versus public) and the type of fuel used (gas or oil) are interpreted as indicators for human asset specificity. Frequency of contracting projects and project size are further exogenous variables included in the analysis.

Results

As Table 1 shows on a purely descriptive basis, projects in private sector buildings (industry, commerce, private housing) are predominantly realised by specialised contractors, whereas projects in public buildings (social housing, schools, hospitals, other public buildings) are predominantly realised by municipal utilities (see Table 1). This is also established in the multinomial logit regression. Thus, the hypothesis is confirmed that municipal utilities can better exploit their specific human assets, i. e. their knowledge of the public sector, to acquire more projects in this domain. With a view to the other asset specificity variables, it can be stated, generally, that municipal utilities dominate the contracting market for projects with high asset specificity. This supports the hypothesis that integrated governance structures are the preferred governance mode if asset specificity is high. Specialized contractors prevail as the size of the project and the frequency of

contracts increase. This is not immediately in line with the predictions of transaction cost theory. We discuss these discrepancies referring to barriers, e. g. finance restrictions, which hinder municipalities to fulfil their predicted role.

Table 1: Specialisation patterns among contractors

Contracting actors / Project types	**Public buildings (%)**	**Private buildings (%)**	**Total (%)**
Specialised contracting firms	21.16	78.84	100.00
Municipal utilities	57.94	42.06	100.00
Equipment manufacturers	27.06	72.94	100.00
Real estate industry	29.95	70.05	100.00
Consulting engineers	30.26	69.74	100.00
Total	28.14	71.86	100.00

Pearson chi2 (4) = 139.6669 Pr = 0.000

Conclusions

Our detailed characterisation of space heating contracting projects reveals important differences between projects. According to our results, transaction cost economics delivers valid explanations for the specialisation patterns of contractors on these different project types. As far as municipal utilities are not the selected contractor, contrary to what theory would predict, it can be argued that they do not yet fully exploit their potential in the contracting market. Further work could evaluate performance differences resulting from this misalignment of transactions and governance modes or - in our case - a misalignment of project and contractor types, provided that performance data, e. g. project specific energy efficiency indicators, become available.

References

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