# 10 Procurement and contracts for regional bus services

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Swedish public transport organisations have repeatedly recommended certain procurement procedures and contract structures. This chapter[11] aims to summarise the state of research with regard to some of the recommendations emerging in Swedish public transport. In Sweden, public procurement of regional public transport has been standard practice since the late 1980s. There are two main types of contract: production contracts and incentive contracts. Under production contracts, the regional public transport authority (RPTA) receives ticket revenue and the operator receives payment for bus kilometres and bus hours in particular. Incentive contracts are the common type used for large numbers of passengers. These have often involved production payments for bus kilometres and bus hours in combination with a payment per boarding passenger: the passenger incentive. Collaboration, the best combination of price and quality, passenger incentives and quality incentives are all contract elements identified by Partnersamverkan [29] and its predecessors as important for a functioning contract type.

## Collaboration

The term ‘collaboration’ is used to describe desirable practices within organisations, between public organisations and between commissioning public organisations and private operators. In a trivial sense, collaboration is necessary in all these contexts. Obviously, communication is needed between organisations that are to achieve results collectively by executing their respective tasks.

11 This chapter reuses parts of Pyddoke (2024) Konkurrens på marknaderna för upphandlad kollektivtrafik [Competition in the markets for procured public transport], Swedish Competition Authority, Contract Research Report 2024:2.

What is not trivial is whether a specific form of collaboration really delivers additional net value greater than if the work were organised differently. Controlled experiments would be needed to find out whether this is the case. However, this can be costly and time-consuming. Simpler follow-up could be used to avoid the best method undermining the good methods. One way is to allow parts of the organisation to work with a more ambitious form of operation with more collaboration and let another part of the organisation work with a simpler, less ambitious form of operation, and then compare the results and costs.

A study of public transport in the Västra Götaland and Skåne regions, by Pyddoke and Thoresson [1], followed up on bus contracts that were regarded as being particularly successful examples of collaboration on bus services. Costs and results in these regions were compared during a period when both public authorities were of the opinion that they had increasingly applied collaboration with a period of less collaboration, both for bus services as a whole and for two individual contracts. The forms of collaboration were described as jointly staffed groups for analysis of outcomes and preparation of proposals for adjustment of the offering (lower-level officials) and for decision-making (senior managers).

Senior managers at the RPTAs found it difficult to specify what tangible benefits they expected. However, these senior managers were convinced that a positive spirit of collaboration would lead to greater creativity. The perception of the collaboration model was more distinct for officials at lower levels within the organisations. These officials were of the opinion that it was mainly a matter of reallocating capacity from routes with less demand to routes with higher demand. However, it was noted that these opportunities could diminish over time, and that the options for reallocating capacity within a contract could be limited. That said, these officials indicated that collaboration had been interpreted as meaning that a greater degree of planning would be delegated to operators. This had resulted in a lack of coordination between contracts.

A further implication of collaboration set out by officials is that it involves managing day-to-day disruptions to services where neither the transport operator nor the RPTAs are able to intervene. This may involve addressing temporary obstructions on the roads, such as construction sites encroaching on streets where the municipality can intervene.

Follow-up of statistics from the two public authorities shows that travel in Västra Götaland continued to increase (albeit with reservation for underestimates in previous counts of boarding passengers); and that it also increased in Skåne, but to a lesser extent than in Västra Götaland. However, this was accompanied by even

faster cost increases in both regions. The latter raises doubts about both the economic soundness and the sustainability of the development. There was stagnation in customer satisfaction and punctuality at or above target levels. An earlier study [2] indicated that contracts with greater emphasis on collaboration and where passenger incentives were introduced could not be shown, on average, to have increased passenger numbers.

Overall, the study concluded that application of the concept of collaboration was not without its problems. Although no causal conclusions can be drawn from the follow-up, it indicates that passenger numbers increased during the period studied, but that this cannot be attributed with certainty to the collaboration. Finally, costs increased faster than passenger numbers.

## Most economically advantageous tender

Since 2014, the EU has recommended that Member States' procuring authorities should apply the *Most Economically Advantageous Tender* (MEAT) award method, rather than aiming for the lowest price. This has also resulted in increased application in Sweden, as well as the rest of Europe [3].

A theoretical advantage of MEAT is that the client can incentivise bidders to tender additional quality as long as the cost is below a certain value. If the client knows how much a quality dimension is worth but not how much it costs to produce it, the client can explain how more quality tendered will lead to cost reductions in the tender evaluation. This provides the operator with an incentive to offer quality in the tender as long as the cost is below the promised cost reduction. It is not worthwhile offering more quality when the cost of the measures exceeds the value of the enhanced quality. This can be applied when evaluating tenders if the tenderer undertakes to deliver the desired quality above a certain level. Additionally, a bonus can be promised that is equal to users' valuations for each additional unit of quality delivered.

In a survey of MEAT terms and conditions in public transport contracts in force in 2015, Ridderstedt [3] sums up the terms that were applied. Ridderstedt notes that there are few examples in the empirical literature of how MEAT requirements are applied in specific procured contracts. In one of these few examples [4], it was found that MEAT requirements were applied in many different ways, including ways that were unlikely to function as intended. The starting point for Ridderstedt's survey is that economic contract theory defines how effectively

MEAT requirements would need to be designed in order to produce the desired results.

Ridderstedt's main finding, as for Bergman and Lundberg [4], is that the current requirements in real contracts show significant differences in how MEAT requirements have been formulated, and that these are partly inconsistent with the recommendations of economic theory. Important implications from economic theory, according to Ridderstedt, are that there should be few quality dimensions subject to MEAT requirements rather than many, that they should be valued on a monetary scale, that they need to be possible to observe sufficiently clearly so that the parties can agree on the outcome, and that this observation can take place at reasonable cost. In contrast, Ridderstedt observes that several of the RPTAs use several scales, a large number of quality dimensions and vague criteria relating to bidders' plans and internal processes.

Ridderstedt argues that these circumstances may make it difficult to achieve effective fulfilment of goals. Instead, having many vague requirements may lead to increased costs for preparing and evaluating tenders. Moreover, it can create rivalry in describing qualities and processes that are difficult to verify and so cannot be used to demand changes. This risks weakening the incentives to endeavour to achieve the quality ultimately desired by citizens and passengers. He notes that having a large number of quality requirements may result in little emphasis on each, and that requirements for organisational quality do not necessarily affect performance quality. Ridderstedt therefore concludes that public procurement officers need better guidance on when and how they should apply MEAT requirements in order to achieve their public authority's goals and on how results and effective methods can be disseminated.

There has been very little quantitative empirical research into the relative benefits of applying the MEAT method. A study by Ridderstedt and Pyddoke [5] analysed both bus contracts procured at the lowest price and with MEAT in Västra Götaland, where the MEAT requirements included aspects such as organisational quality. The empirical question analysed considered whether the MEAT variants valid in 2015 that were applied in 18 contracts gave better results in terms of measured delay than corresponding contracts using the lowest price method. No statistically significant difference in outcome could be demonstrated.

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## Passenger incentives

Passenger incentives have been recommended by Partnersamverkan for a long time. These passenger incentives often involve the operator receiving a fixed sum of money for every passenger who boards one of the buses run by the contracted operator. Where passenger incentives have been applied, these have often been in the order of 30 per cent of the total payment. The remainder has been paid as remuneration for production. These passenger incentives have been analysed in a number of studies of Swedish public transport [6] [7] [8] [2]. These studies analysed data from contracts with and without passenger incentives in order to determine the impact of passenger incentives on passenger numbers. The studies consistently failed to find statistically significant higher increases in passenger numbers in contracts with passenger incentives.

There are several potential reasons for the lack of results. One key reason is that increased passenger numbers in a particular area or on a particular route may cost more than the incentive provides. One study [9], using average costs that were recent at that time, produced results indicating that the cost of increasing passenger numbers in a number of Swedish cities would have had to have been significantly higher than the passenger incentives at that time. Therefore, passenger incentives where the incentive times the number of boarding passengers equals 30 per cent of revenues would lead to only minor increases in passenger numbers.

Reallocating capacity within a contract does not cost more if the same capacity can create value in the form of increased passenger numbers. This would require the transport operator to be able (free) to actually reallocate capacity. However, such a gain can only be achieved once, unless another potential gain arises due to construction of housing or creation of jobs, for example. Analysts have pointed out that if a transport operator has several contracts, the transport operator might accept a reduction in one contract if that same transport operator were to receive an expanded mandate in another contract, as long as the net is positive.

Thus, there may be individual contracts where passenger numbers have increased, but the overall supply has not. The studies focus on investigating whether statistical differences exist, and not on the potential reasons for the absence of an average difference. However, there may be several reasons for the lack of impact. As mentioned above, one study indicated that most incentives were too small to cover the costs incurred by the transport operator in increasing passenger numbers. Another reason stated is whether the contracts prevent transport operators from amending their offering.

## Quality incentives

Quality incentives refer to either bonuses for quality above a certain predetermined level or penalties for quality below that predetermined level. Common forms of quality incentives in public transport by bus relate to punctuality, service provision and customer satisfaction. These incentives have been structured in a variety of ways, but overall, there has been little systematic analysis of quality incentives. However, there have been a few research studies on public transport quality incentives and other areas, including one foreign study [10] [11] [12] [13]. These analyses indicate that whether quality incentives are having the intended effect is unclear and suggest that it has not been easy to get the quality incentives right. There is a risk of setting the incentive at the wrong level if the client is unaware of how passengers value different quality dimensions. If the level is too low, the measures will be insufficient and so the quality outcome will be too low. Conversely, if the level is too high, there is a risk of the transport operator doing more than is desirable and costs exceeding passengers' valuation of the improvement. Another risk indicated is that penalties may be imposed and bonuses paid for outcomes that are beyond the operator's control. In this case, all the operator can do is add sums to or subtract sums from the tender to cover anticipated expenses or deduct anticipated bonuses, respectively, without influencing the outcome in respect of services. The implication is that the client should therefore ensure it remains well-informed about what the operator is able to influence and the approximate cost of this, and to avoid penalties and bonuses for outcomes that the operator is unable to influence.

Given the fact that an incentive is included in the contract, it is also important for the operator to believe that the client will verify the quality and actually impose the penalties. The incentive effect of penalties may be undermined if there is reason to believe that the operator can 'talk their way out of' penalties. No major studies analyse the imposition of penalties.

A study by Pyddoke [13] analysed penalties for bus service quality in the Stockholm and Skåne regions, using data with varying availability from 2007 to 2017. The study found little in terms of verbal or written explanations at the RPTAs in respect of the intended impact of the selected forms of penalties and bonuses. The interviews showed that officials believed that passenger incentives would reduce the need for quality incentives, and that remaining quality incentives were necessary in order to ensure sufficient quality. The study also presented observations indicating that there may have been extensive failure to impose penalties. Both RPTAs record contractual payments, but neither states that

penalties or bonus payments are recorded by type. If this is true, it means that they are unable to study the link between quality and penalties imposed.

The study found that there was little change in quality outcomes over the period studied. In cities, however, punctuality is declining. This decline is thought to be due to increased congestion resulting from factors such as increased traffic, construction activities and hence greater congestion. The following conclusions were drawn:

- → Terms and conditions of contracts in respect of penalties should be public.
- → Reporting of quality outcomes and penalty payments should also be public and subject to regular audits.
- → Penalties based on the above data should be subject to regular evaluation.

## Nature and scope of procurement procedures

Procurement documents are very comprehensive and detailed as they contain all mandatory requirements and a large number of less stringent requirements or preferences, particularly in respect of behaviour [14]. Lidestam [15] examined the scope and level of detail of requirements in different areas and analysed three years' worth of procurement documents. The results of the study showed that many requirements are detailed, particularly with regard to bus exteriors and bus sizes. Bus sizes and their impact on costs were analysed in greater depth in [16], where a mathematical model was used to investigate the environmental benefits of being able to adapt bus sizes to the number of passengers instead of predefining which bus sizes should be used.

The importance of environmental requirements was analysed more comprehensively in [17]. A content analysis of ten years of procurement documents was carried out, and the topic was also addressed in workshops. The purpose of the study was to investigate how an RPTA can support the process of creating more sustainable procurement procedures for bus services. The results showed that RPTAs have major opportunities to contribute to more Green Public Procurement by defining precise environmental requirements in procurement documents.

One hypothesis set out by bus operators and industry organisations is that the industry is looking for functional requirements rather than specific requirements. This was highlighted in WSP's report [18], which analysed the literature and conducted a number of interviews to demonstrate how specific requirements lead to high costs, estimated at over SEK 375 million annually in Sweden. Examples of how specific requirements can lead to unnecessarily high costs for public transport were also shown in a study by Camén and Lidestam [19], which examined the reasons for cost increases for bus services in Sweden. Nine different reasons for high cost increases in bus services were identified by interviewing RPTAs and bus operators, as well as stakeholders in industry organisations: contract length, specific requirements for buses, peak hours, working hours agreements, the procurement process, counterproductive political governance, accessibility, and age-related and environmental requirements for buses.

Many of these reasons were rooted in the procurement procedure and the process behind the procurement procedures. If tendering becomes more expensive for bus operators, bus operators will have to submit higher tenders in order to cover their costs. These higher tenders then lead to higher costs for RPTAs, and therefore, ultimately, higher costs for passengers and citizens in the form of increased ticket prices and/or increased taxes. An in-depth study was conducted in Lidestam et al. [20], which further analysed and ranked the factors behind the cost increases. The results of this study showed that peak traffic, specific requirements and age requirements for buses were the most important and most significant reasons for the cost increases. Maximum age requirements for each bus and maximum average age of the bus fleet have been analysed further and were presented at the Transport Forum in Linköping in 2024 [21]. This study mapped the extent of age requirements in procurement procedures and calculations of the increased costs associated with the application of the same.

The application of the Bus Nordic policy document [22] has also been mapped, and additions and exceptions have been studied further. The results of this study were also presented at the 2024 Transport Forum [23]. Bus Nordic is a policy document relating to the characteristics of buses. It is a joint document for the Nordic region as a whole, unlike the previous policy document, Buss 2014 [24], which related only to Swedish circumstances. Virtually all RPTAs refer to Bus Nordic, but most of them have made additions, exceptions or clarifications to its content. This risks undermining Bus Nordic as a policy document, which may impair confidence in its role as a leading guideline for the industry.

Bus operators are requesting greater flexibility in their contracts, while tender documents are tending to be more extensive and more detailed. Flexibility in contracts in general has been studied by Camén et al. [25]. This study mapped the degree of flexibility in different types of requirements in procurement documents for the 2008–2018 period. The study focused on the level of flexibility in the following categories: contract types, timetables, bus sizes, age requirements and application of standards. A number of interviews and complementary workshops involving industry stakeholders were also held. The results of the study indicated a fairly low level of flexibility. Hansson et al. [26] examined opportunities for innovation in procurement procedures and focuses on the three metropolitan regions of Sweden: Stockholm, Västra Götaland and Skåne. Interviews were conducted with six RPTAs and ten of the biggest operators in Sweden. The results reveal difficulties in defining the concept of 'innovation' in this context, and also in determining who is actually responsible for innovative procurement procedures: RPTAs or operators. Although both operators and RPTAs have the ambition to introduce innovations to procurement procedures, it is difficult to make progress or, as the authors put it in the title, an 'insoluble knot'.

## Impact of contract requirements on costs and the number of tenders

Two studies [27] [28] have analysed data from the procurement of bus services by RPTAs with contracts valid in 2015. Since then, as far as the authors are aware, no compilation of the contracts has taken place. Vigren [28] studies factors that may influence the number of tenders in a procurement procedure. The analysis uses the following variables from the call for tenders: vehicle kilometres, number of routes, median route length, contract duration, combinatorial bidding, MEAT (evaluation according to the Most Economically Advantageous Tender), presence of incentives for passengers and quality, presence of environmental requirements in respect of fuel, whether the client provides depots that may or must be used, whether the client requires the winning tenderer to take over staff or other resources, the number of potential tenderers in the region (county), the number of simultaneous calls for tender, and population density. The study found no statistically significant effect of contract duration on costs in bus contracts in Sweden.

An average of 3.4 tenders had been submitted in the studied sample of bus contracts from 17 RPTAs (excluding Västmanland, Kronoberg, Västerbotten and

Norrbotten). The estimated model indicates that the number of tenderers could be influenced by at most 0.5 of the variables stated above, on average. Therefore, by varying the criteria studied, the number of tenders could – hypothetically – be increased by 0.5 in a tender, on average. Any additional requirements defined for operators – that is, the existence of environmental requirements for fuel, whether the client provides depots that may or must be used, and whether the client requires the winning tenderer to take over staff or other resources – reduce the number of tenders. These requirements reduce the number of tenders by approximately 0.4 each. The number of tenders was reported to be reduced by 0.8 if all these requirements were applied.

## Null and void contracts and procurement procedures with problems?

A number of research projects studying cherished contract recommendations for public transport have raised doubts about their effectiveness. These are summarised in brief below:

A project on collaboration [1] shows that projects involving increased collaboration may have helped to increase passenger numbers, while another project [2] that analysed many contracts with increased collaboration were unable to identify any impact on passenger numbers. That said, costs have risen sharply in the regions studied, which appears to be unsustainable. There is no clear indication as yet of the effectiveness of collaboration contracts.

Two projects analysed the most economically advantageous tender. The first project [3] mapped the design of the requirements for Swedish contracts for bus services procured by regions. The results show a wide variation in the design and abundance of vague criteria and requirements relating to bidders' plans and internal processes. The second project [5] analysed data from an RPTA that used both lowest price and most economically advantageous tender. The outcomes were compared with regard to punctuality. No statistically significant difference could be identified.

Several projects (such as [2]) have analysed contracts with and without passenger incentives, whereby the operator is paid a fixed sum of money for each additional passenger boarding buses run by the contracted operator. None of these studies have found statistically significant higher passenger numbers in contracts with

passenger incentives. Few studies have analysed quality incentives, but those that have indicate uncertain results.

As regards procurement issues, studies [19] have shown that several reasons for high costs for bus services stem from procurement aspects. Despite the fact that functional requirements have been requested by the industry for a long time, many detailed requirements remain in place in many procurement procedures. These include age requirements, stipulating both a maximum age for every bus and a maximum average age for the fleet. Furthermore, Bus Nordic has evolved over the years (previous different versions of Buss2010); but research has also shown that while RPTAs refer to the document, many additions, exceptions and clarifications are made, thereby making it more difficult for bus operators to be able to relocate buses to other areas.

## What do we know now that we did not know ten years ago?

Looking at public transport in general, it has delivered what politicians wanted most of all – more passengers travelling. However, this has come at the price of a sharp increase in costs. Neither procurement procedures nor renewal of contracts appears to have been able to influence the latter.

The most significant thing we know now is that controlling contract outcomes is not as simple a task as the authors of the early recommendations appeared to hope it would be. One factor that may be contributing to the increased costs is that despite wishes to the contrary, operators are still significantly limited in terms of what they can influence. Another factor is that this has been combined with a high level of revenue certainty, achieved by indexation of compensation corresponding to input prices, which has reduced incentives to cut costs.

We also know that follow-up has been lacking in significant areas. However, more and stricter follow-up would also cost more. At best, smarter follow-up may result in more lessons being learned about how requirements can be made more effective and how costs can be reduced. It may appear rational not to increase follow-up if politicians have wanted to limit client costs. However, this may prove to be a poor strategy. More follow-up could improve governance, but it may not lead to greater efficiency unless a smart approach is taken.