



Research paper

Innovation in stable competitive tendering regimes: An insoluble knot?

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ABSTRACT

The transport sector is currently undergoing rapid development, which is to a large extent driven by innovation and technological changes initiated by various market actors. At the same time, public transport operations are largely framed by extensive procurement processes and a mature market where a few large companies compete for market share. In Europe, there is tension between rapid innovative development in the sector, on one hand, and stability given by regulation practices shaping procurement processes, on the other. This paper presents results from a study in which opportunities for innovation in procurement processes were examined. The findings are based on public transport authorities' and transport companies' experiences from tendering bus transport in the three largest cities in Sweden. By using a theoretical perspective of innovation and institutional logics, the paper explains the restrictive role innovation has in procurement processes and discusses the conflicting views transport authorities and transport companies put forward. The paper is of general value since it raises questions related to the complexity of existing tendering regimes and the possibilities of facilitating innovation.

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1. Introduction

Over the past years, digitalization and electrification have swept across all sectors of the economy. With these broad technological changes happening, there is undoubtedly innovation potential in the transport sector. This paper focus on innovation linked to procurement in the transport sector in Sweden. Sweden is usually ranked high on global innovation indexes. In 2021, 2020 and 2019, Sweden was ranked by the World Intellectual Property Organisation (WIPO) at number two, after Switzerland, in the world in terms of innovation (WIPO, 2021; World Economic Forum, 2021). Furthermore, Sweden was ranked in second place, after South Korea, in 2018 in Bloomberg's innovation

index (World Economic Forum, 2018). In 2018 and 2017, Sweden was ranked third and second, respectively, by WIPO (WIPO, 2018). Sweden is not only ranked high on these general innovation indexes, but also highly ranked in the field of mobility. For example, Stockholm was recently ranked at number one in the Urban Mobility Readiness Index. This index ranks 60 cities around the world according to how forward-looking, investment-willing, and innovative they are when it comes to sustainable mobility in which public transport is key (Oliver Wyman Forum, 2021).

Public transport authorities have a central role when new traffic is procured. In this setting, procurement can be used by the public sector to push for innovation and technological change. For example, transport authorities can steer development towards renewable fuel by setting requirements for a specific fuel or reduced emissions in the procurement process of bus traffic. The interest of using public procurement to promote innovation has increased rapidly over the last decades, and is also encouraged at the European Union level (Lember et al., 2014).

This said, major changes in procurement regimes, such as innovation-promoting procurements, are not common in regulated

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procurement systems, such as Sweden (Edquist, 2019). An investigation in Sweden showed that ‘many procurements are almost casually designed so that the contracting authority requests the same solution as in the most recent procurement’ (Innovationsupphandlingsutredningen, 2010, p. 145). This is explained by a lack of time and risk aversion among purchasers (Innovationsupphandlingsutredningen, 2010). Hence, despite Sweden’s high rank in innovation and mobility, its use of innovation in procurement regimes seems to be limited.

The purpose of the paper is to explore how public transport authorities and transport companies reason about innovation related to procurement of bus services and, by using a theoretical perspective on institutional logics, explain the restrictive role innovation has in procurement processes.

Underlying questions that have guided this study are: What is innovation according to central actors engaged in the procurement of bus traffic? How can innovation be promoted in contracting processes? What problems do different actors see? What actor group is pushing for innovation?

Studies addressing roles and relationships between public transport authorities as purchasers of traffic and transport companies as suppliers of traffic have been a central topic in many studies. From these studies, the relevance of a trusting partnership and of building on relational collaborative structures has been addressed. Literature has also addressed institutional factors within a competitive tendering setting (see an overview in Hensher, 2017). The transport governance literature is heterogenic and sometimes presents conflicting perspectives on the role contracts and contracting regimes have in this setting (Hansson, 2021, pp. 73–76). The paper complements existing research by addressing conditions of innovation in an existing contracting regime. This aspect is understudied (Vitestam et al., 2021). The paper also introduces institutional logic theory to the public transport literature and thereby provides a general perspective that explains differences and potential conflicts among actors within a given setting. Institutional logics is a rather under-investigated perspective in the transport literature, with only a few articles published. Grinevich et al. (2019) and Vaskelainen and Münzel (2018) have examined institutional logics in relation to car-sharing. Guyader et al. (2021) has applied it to mobility as a service (MAAS) and Fowler and Gillett (2021) to the public transport sector. This perspective is of general interest and can be used to investigate and explain conflicting behaviour and cultures within the transport sector.

The paper has the following structure: First, a short presentation of materials and methods used in the study is given, which is then followed by an introduction of the theoretical perspective of innovation and institutional logics. The result section presents different perspectives transport authorities and transport companies have on innovation, and challenges linked to procurement. The discussion positions the results in relation to the theoretical perspective of innovation and institutional logics. The paper ends with a concluding section.

2. Materials and methods

The empirical material comes from a research project in which we investigate innovation on the public transport market, through cases from the three metropolitan regions in Sweden. For this paper, the empirical material was analysed based on the theoretical framework of institutional logics. In line with this theoretical framework, qualitative methods are the most suitable approach since logics are ‘revealed through language, practices, and manifested in symbols and materials, which are naturally suited to qualitative data and methods.’ (Reay & Jones, 2016, p. 442). The data material is based on semi-structured interviews. In total, we interviewed 16 persons (six from the three largest public transport authorities in Sweden: Skånetrafiken, Stockholms länstrafik and Västtrafik and ten from the largest transport companies in Sweden (Nobina, Keolis, Arriva, Bergkvarabuss, Transdev) in addition to this we also interviewed representatives from VY Buss. To recruit

interviewees, we used our established contacts within the sector. We were interested in interviewing persons that worked strategically with purchasing within the organisations. We also included persons that had a more general business development approach linked to innovation.

Based on our purpose, we developed an interview protocol with seven themes and related sub-questions. The themes were linked to defining innovation, contract design, pilot-projects, collaboration, challenges and possibilities and future aspects on competitive tendering in relation to sector development/innovation. The questions further developed the themes, e.g., they concerned linkages between bids, an evaluation of bids, and innovation. We were particularly interested in the driving forces behind innovation and opportunities for innovation.

The interviews were done in a two-step process. First, we interviewed the transport authorities, and then analysed this material. We then interviewed the transport companies and analysed that material. The interviews were done online using Teams, some interviews were done in groups, and some were individual depending on the wishes from the respondents. Two persons from the project group attended each interview, to ensure validity and transparency between project participants. All interviews were recorded and transcribed.

The analysis of the material was performed in several steps. As described above, we first analysed the transcribed interviews based on each actor group, to get an overall understanding of that actor group. This was made based on an inductive approach, trying to identify similarities and differences within the actor group. Using the perspective of institutional logics, we then cross-analysed the material between the actor groups. Doing so enabled us to identify competing and multiple logics operating alongside each other (Reay & Jones, 2016).

3. Theoretical perspective

3.1. Innovation

The growing policy interest in public sector innovation has shared new light on the innovation literature, and especially innovation in relation to service production (Djellal et al., 2013). Studies have emphasized differences between business and public sector innovation, as well as providing reasons on why there might be challenging to work with innovation in the public sector (lack of market mechanisms, being under political influence and lack of resources to risky innovation projects, among others) (Djellal et al., 2013; Fuglsang, 2010; Chen et al., 2020). In the discussion, a need for definitions of innovation has occurred (Fuglsang, 2010). A now commonly used definition comes from the Oslo manual, which defines innovation in relation to the organisation: *an innovation must be novel (new or significantly improved) to the organisation, but there is no requirement for an organisation to be a market novelty* (Arundel et al., 2019, p. 792). This means that innovation can include a range of aspects, from minor changes to disruptive ones. It includes both products as well as processes. The emphasis in this definition lies on *improvements* that differs from previous products or processes (Arundel et al., 2019). Another definition of innovation in public services include a condition that the element(s) should be able to be *repeated* in new situations (Toivonen et al., 2007, p. 269, in Fuglsang, 2010). Fuglsang (2010: 68) also include the notion of some type of *intention* behind the innovation. This goes in line with the definition of Lämsäalmi et al. (2006:67) that defines innovation as “*the intentional introduction and application within a role, group, or organisation, of ideas processes, products or procedures, now to the relevant unit of adoption, designed to significantly benefit the individual, the group or wider society*” (cited in Van den Broek et al., 2014).

Sørensen and Torfing (2022) further defines innovations as; innovative solutions; innovative processes and innovative institutions. These sprung from literature on public sector innovation, and in specific how public sector can transform themselves to be more innovative. A focus on *innovation as solution* is about improving and addressing problems in society to meet citizen’s needs. Innovation solutions can take different

forms, it can be regulatory innovations (for example introducing new regulatory tools or standards), service innovation (developing new technologies/measures etc that creates better or new service) or policy innovation (introduce new politics etc). Innovation also includes *innovative processes*. Innovative processes, as the name indicate, is about generating processes “stimulate and facilitate the development and emergence of yet undiscovered solutions ...” (Sørensen & Torfing, 2022: 41). Example of such processes might be co-creation, design thinking, and collective impact. This process entails some type of collaborative element between various market- and public actors. Thirdly, is *innovative institutions*, which is described as “infrastructures that create the spaces and opportunities for collaborative innovation processes to emerge, develop, and adapt” (Sørensen & Torfing, 2022, p. 43). It can for example be shared platforms, workshops or rules and procedures for how to work. Sørensen and Torfing (2022) describe the three components as “three orders of innovation”, arguing that institutional innovations facilitate innovative processes, which in turn support innovative solutions. Drawing on the definitions, this article acknowledged that an innovation must be novel to the organisation and repetitive, but there is no requirement for it to be a market novelty. There also needs to be some type of intention behind the work with innovation. The components, proposed by Sørensen and Torfing (2022) are used to further identify in the procurement setting. It is recognised that there might be an order of innovation, but the order itself is not of main focal point of this paper.

3.2. Institutional logics

The institutional logic perspective is used to understand and explain the views of public transport authorities and transport companies when they are reasoning about procurement and innovation. The institutional logic perspective was introduced by Alford and Friedland (1985); Friedland & Alford (1991). The perspective pays attention to how actors act in organisations and explains institutional heterogeneity and transformation (Thornton & Ocasio, 2008). Thornton and Ocasio (1999, 2008) and Thornton et al. (2012) further developed this perspective by using institutional logics to identify, through social arenas or social subsystems, how organisations are structured. Institutional logic can be interpreted as values and rules for action that are implicitly or explicitly current in organisations and society at large (Thornton et al., 2012). Institutional logics shape how actors interpret and assess situations as well as how they react to in different settings and shapes the premises of decision-making (Thornton et al., 2012).

The institutional logic perspective has been applied to multiple studies covering a range of topics. Due to the range of applications, multiple logics have been identified.¹ For this paper, four different logics are presented. We believe these are the most relevant for the findings analysed in this paper. The four logics are: bureaucracy, market, society, and innovation. *The bureaucratic logic* is grounded in classic public administration theories describing the role of government organisations (Nederhand et al., 2019). It leans on the assumption that ‘government organisations are characterized as impersonal rational systems that prescribe neutral behaviour for policy officials’ (Nederhand et al., 2019, p. 221). In this logic, public officials are seen as impartial implementers of politicians’ decisions. The officials’ work is standardised and rule-based and falls within a chain of hierarchy. Rule-based work is there to ensure fairness and shield citizens from unpredictability and abuse of power by public officials and politicians (Nederhand et al.,

2019; Wagenaar, 2004). *Market logic* emphasises the market position of a firm. Capital is connected to market return and growth by acquisition. In market logic, the market as well as the roles of buyers and sellers are clearly defined (Thornton, 2004). The market logic concept extends beyond the economic sphere through the process of neo-liberalization. The health care and educational sectors are examples where market logic has been frequently implemented in public sector services (e.g. Saunders, 2014; Van den Broek et al., 2014). *Societal logic* is described as a commitment to society and to the prevailing ideologies that now exist. There is a motivation to uphold an organisation’s reputation towards society which is, for example, seen in strategic documents and the mission statement of the organisation (Thornton et al., 2012). The societal logic can be seen as a response to the current ideologies in society. Sustainable development has received increased attention in society and on policy agendas. New legislation that requires organisations to craft new working methods, products, services, that meet social and environmental demands has been enacted. In line with this a new logic, the sustainability logic, has emerged in the literature (De Clercq & Voronov, 2011). In other studies, sustainability, has been connected to Thornton et al.’s (2012) original societal logic. For example, Lee and Lounsbury (2015) pointed out that this sustainability dominates in some societies, and it ‘forces’ organisations to work proactively to address sustainability issues. There might be both real as well as normative sanctions (loss of legitimacy, etc.) on an organisation if it does not meet society’s expectation. For this paper, we will treat societal and sustainability logics as one (calling it a societal logic). Studies have also introduced other newer logics (Dahmann & Grosvold, 2017; Greenwood & Suddaby, 2006). In line with this, *innovation as a logic*, has emerged in the literature. Innovation logic constitutes organisational cultures that stimulate idea-generation as well organisational strategies that can be employed to generate innovative ideas (Smith, 2003). In organisations where innovation logics have been identified, there is also internal and external networks that support innovators (Bygballe & Ingemansson, 2014).

Multiple logics exist; and, over time, dominant logics within an organisation or actor group might change and new logics may appear. The first studies of institutional logics were concerned with how old logics were challenged and outcompeted by new logics. In recent times, studies have paid attention to the fact that organisations are not homogeneous and how various institutional logics play a part in creating heterogeneity. This perspective recognises that multiple competing logics can live side by side in the same organisation. The heterogeneity of logics can create power conflicts between organisations and units or actors within an organisation. However, if actors manage to find new ways of collaborating, these conflicts can be broken or at least put on pause and, in the long run, provide ground for change (Lounsbury & Boxenbaum, 2013; Reay & Hinings, 2009). This means that logics may both contribute to competitive and/or collaborative practices (Lounsbury & Boxenbaum, 2013). Hence, institutional logics are an important theoretical tool because they explain what creates a sense of community and unity within an organisation and between organisations. Tensions and changes observed in modern organisations can also be addressed using this perspective by focusing on competition and struggle between different actors’ logics (Thornton et al., 2012). The perspective may explain why actors dominated by logics from the same orders can more easily cooperate with each other and why conflicts and indifferences may arise when actors from different logics collide.

How does the definitions of innovation and the theoretical perspective of institutional logics complement each other? Logics can play an important role in explaining how actors may reason behind resistance or adaptation of innovation. By adapting the process of innovation to fit their logic, implementation problems can be reduced (Van den Broek et al., 2014). For example, an organisation dominated by a bureaucratic logic, might easier adopt to a new innovative process, if it is linked to existing rules and guidelines within the organisation. In settings where multiple logics exist implementation of innovation is more challenging, since competing logics might re-define the need for, how, and to what

¹ For example, Thornton (2004) showed the effects of editorial and market logics in the publishing industry. Dahmann and Grosvold (2017) identified an environmentally driven logic and a market-based logic when analysing environmental managers’ work (2017). Greenwood and Suddaby (2006) focused on audit and law firms, thus addressing market, professional, and family logics’ interplay.

extent new (innovative) practice might be implemented in the organisation (Van den Broek et al., 2014).

4. Short introduction to the Swedish bus procurement context

Sweden is located in northern Europe and has a population of approximately 10 million inhabitants. Buses, which carried almost 551 million travellers in 2021, are the main mode of transport (Transport Analysis, 2021). Due to Sweden's membership in the EU, the Swedish Public Transport Act is based on the EU Public Transport Regulation. Sweden has also adapted the procurement regulation used in the EU. Twenty-one regional public transport authorities have the overall responsibility for regional public transport in all counties in Sweden. Each public transport authority develops a regional traffic supply program. The program sets strategic goals for the development of public transport and determines which routes are to be covered by public service obligations. The Public Transport Act also makes it possible for companies to operate commercial public transport. However, almost all public transport provision is procured via competitive tendering (SKR, 2022). The largest supplier of public transport in Sweden is Nobina, which sold just over SEK 4.5 billion on the public market. Then follows Keolis, Arriva, Bergkvarabuss and Transdev (Transport och logistik, 2022). For this study, we interviewed all the major bus transport companies as well as VY Buss.

The context in which a procurement process operates is characterized by a legal framework that regulates the procurement procedure. Although procurement legislation can sometimes be perceived as restrictive, there is room within the legislative frameworks to stimulate innovation (6th chapter, SFS, 2007, p. 1092 The Act on Procurement in the Utilities Sector). In relation to contracting design, there are three main ways to promote innovation: innovation procurement, functional requirements, and special contract terms (Upphandlingsmyndigheten, 2022). The term innovation procurement is used when there is no finished product or service at the time of procurement. The purchaser defines what type of service/product the procurement should fulfil, and tenderers are given free rein to present solutions that best fulfil a requested service/product (Edquist, 2019; Edquist & Zabala-Iturriagoitia, 2012). The idea is that procurement will promote, in the market, a willingness to innovate; but this approach has shown that it can lead to bidders trying to reduce costs by suggesting already known standard solutions (Vitestam et al., 2021). A purchaser can also use functional procurement or set functional requirements in a procurement. This type of procurement can be seen in contrast to traditional procurements that include detailed requirements that are predefined by a purchaser. A functional procurement is based on the idea that the purchaser describes a function in the procurement documentation and tenderers decide how this function is to be performed. In Sweden, it is common for procurements to contain a mixture of functional and detailed requirements. A third way to stimulate innovation is to use special contract terms in the procurement contract. A special contract term typically contains a requirement that the supplier does not have to meet when the tender is submitted. The requirement must instead be accepted by the supplier and fulfilled during the contract period. The conditions may be economic, innovation-related, environmental-related, social or employment-related requirements. However, there may also be other types of requirements (Thoresson et al., 2021).

5. Findings

The result section is divided into five subsections that present different aspects of innovation in public procurement of bus transport, from the perspective of transport authorities and bus companies.

5.1. Defining innovation

Central to this paper is identifying what public transport authorities

and transport companies define as innovation. This is important since a common view of a service that is to be purchased might lead to a smooth procurement process and implementation. It is clear that the persons we interviewed have not discussed definitions of innovation in the transportation setting before. They provided vague descriptions of what innovation is and it was extremely difficult for them to link it to procurement.

Public Transport authorities (PTA) defined innovation as something associated with something other than slow or continuous improvement – “innovation is related to leaps or phases of rapid change or to leaps or phases with large changes” (Interview, PTA 2). Another state “... we don't talk about it as innovation in that sense, we say development ...” (Interview, PTA 2). The authorities exemplify with technological changes, such as electrification, MAAS, inter-modality, and autonomous vehicles (Interview, PTA 1; PTA 2; PTA 3). In addition, innovation is related to processes and changes of services; for instance, social aspects such as treatment of different groups of passengers or customers (Interview, PTA 2; 3). The example of innovation is often linked to the political goals of increased travel, satisfied customers, and energy efficiency (Interview, PTA 1; 2; 3).

Transport companies (TC) also stressed the importance of innovation. However, just as with transport authorities, it was difficult for them to define what innovation is. Some interviewees mentioned that innovation is incremental and process-oriented. Innovation can also concern everything from modest iterative steps to large paradigm shifts (Interview, TC 6). Transport companies provided different descriptions of innovation. Most focus was on technological innovations which can involve both vehicles as well as software and system development (Interview, TC 2; 4; 6). They also gave examples that would make “the whole-trip”-perspective easier and service improvements related to this (Interview, TC 1; 5).

Hence, there is no common view on what innovation is, either among the transport authorities or the transport companies. Overall, the descriptions of innovation can be categorised into two themes: technical changes related to electrification or IT-development and improvements that smoothen the whole-trip service. The examples provided are mainly linked to technical development than more radical changes of novel innovations. For example, electrification of bus fleets has been around for many years and is perhaps not seen as innovative by some today. Hence, it is difficult to connect clear innovative characteristics to public procurement.

5.2. Who is responsible for driving innovation forward?

The transport authorities argue that innovation is not primarily related to a public organisation or the role of the purchaser. To push forward and take responsibility for innovation is not the public transport authorities' main task; instead, they are focused on the provision of public transport. This is reflected in the quote, ‘We don't have the capacity, nor is it in our “DNA” as an organization, to be successful in innovation’, (Interview, PTA 2).

In recent years, many public transport authorities have delegated responsibility to transport companies by incorporating an increased element of financial incentives into the contracts. These are typically incentives related to passenger travel, sometimes combined with incentives for customer satisfaction. The present business model is based on increased responsibility toward transport companies in combination with greater risk than in traditional production agreements. The overall purpose of incentive agreements is to stimulate the drive and creativity of market actors, which is assumed to lead to more effective solutions (Interview, PTA 1; 2; 3).

We have tried to place more responsibility on the transport companies to develop these solutions [...]. [...] This is how we have managed our new agreements, more based on the goals and what it is we want to fulfil, more functional ... [...] not so much details about

the requirements but instead what it is we should achieve and then the transport companies [...] come up with solutions (Interview, PTA 1)

In line with this assumption, transport companies are regarded as being knowledgeable and endowed with a great capacity to develop traffic.

We see that the transport companies have great knowledge, it is often multinational companies that can tell us: this is how we work in Nice. [...] We must have that cooperation and exchange. Otherwise, we will stagnate. (Interview, PTA 2)

We now turn to the role transport companies' perception of working with innovation in procurement processes. There are variations to the degree that transport companies see themselves working with innovation. One interviewee said:

It is very important with innovation. We follow it a lot. It is very exciting, I think. It has not happened so much for forty years, until the last ten years ... Then it is about how we get innovation within procurement. We would like to see that the procurement in some way was designed to allow a certain room to work with innovation under the contract period. (Interview, TC 2)

Another interviewee does not consider anything they do as innovation: 'I do not define anything we do as innovation. There is technical development, but that I do not call innovation', (Interview, TC 3). To some extent, the above quote is connected to how the interviewee defines innovation. What some describe as innovation, others consider normal technical development.

The quotes from the transport authorities and transport companies combined illustrate that none of the actor groups believe they drive innovation. On one hand, transport authorities argued that they have an indirect control function with a focus on providing conditions that can influence transport companies' actions in a desired direction. There is a clear tendency to place the driving force or responsibility for innovation close to the 'market'. On the other hand, the transport companies argued that they cannot take a driving role if the incentives for them to work with innovation are not right. Hence, the companies believe public transport authorities must provide a setting for transport companies to be able to employ innovation.

5.3. Conditions for innovation and contract design

Both transport companies and public transport authorities pointed out the importance of integrating elements that can stimulate innovation into a contract design (Interview PTA 1; 2; 3 & Interview, TC 1; 2; 3; 5). Hence, there is a common view in the transport sector that stimulation of innovation and contract design is linked. However, the view on how contracts should be designed and what role the two actor groups have in this process differs.

Both transport authorities and transport companies said that innovation can be stimulated before a contract is signed as well as within the contract. The period before the contract is related to the tendering process; and, here, specifications can be made in a tender document. Within the contract relates to a flexible, functional contract design. It is also possible to include clauses in the contract regarding innovation that has not yet been carried out. Such clauses can, for instance, regulate the allocation of costs, profit, or property rights in relation to innovation (Upphandlingsmyndigheten, 2022).

The transport authorities discussed innovation in relation to how a contract is formulated with regards to the degree of specification connected to an openness for initiatives and development within the contract period. Some interviewees see an allowance for flexibility as necessary (Interview, PTA 1), while others regard it as problematic, arguing that is essential to be able to specify – in enough detail – the terms of a contract to pressure price without specifying risk increases

which translates to high bids (Interview, PTA 3).

There is a general expectation among public transport authorities that private transport companies can be creative and innovative if given the right conditions (Interview, PTA 1; 2; 3). However, they find it difficult to see how one can stimulate innovation by means of a formal contract and get the transport companies to take the initiative to propose new solutions/innovations (Interview, PTA 3). A common view among transport authorities is that innovation is both promoted through incentives in the contract, but also based on relationships with companies. Hence, from the public transport authority's perspective, a long relationship and collaboration between the transport authority and a transport company is fundamental in innovative processes (Interview, PTA 1; 2; 3).

Also, among transport companies, there is a consensus that contract design and innovation are linked. As public transport in Sweden is market-driven, the need for transport companies to keep or enhance their market position has a crucial influence on the possibility of being innovative. One interviewee summarises it as, 'everything we do, we actually do to make sure we keep, or increase our market position, which in the end is economical', (Interview, TC 1). Ultimately, the transport companies argued that a market-driven organisation of public transport means that innovation and development must be included in contracts if the organisation is not directly profitable to the transport company. As the contracts are designed today, the companies believe they often work as a barrier to innovation since the contracts do not allow enough room for transport companies to be as innovative as they would want to be (Interview, TC 1; 2; 5).

The potential to promote innovation through requirements in the tender documents is seen to be especially true for technological development. However, in this also lies difficulties in pricing future innovations.

... the public transport authorities can really steer towards new technology ... of course we always want to win the tender when we bid ... and we, therefore, choose the arrangement that gives us the best chance to win. And the price is a large part, almost always, in the evaluation. So of course, is there a more expensive technology than the old technology, then we might choose the old one so we will win the tender (Interview, TC 2).

One interviewee expressed a wish for more room for negotiation between parties within the framework of a contract (Interview, TC 2). Yet another interviewee argued that it is costly for all parts to continually re-negotiate traffic. Negotiations do not create value. Instead, it is important to have the ability to handle new problems when the contract does not follow changing circumstances (Interview, TC 1). Transport companies also stressed the need to include processes of innovation in contracts (Interview, TC 1; 5).

Several transport companies also brought up increased freedom over traffic planning as something positive; and one interviewee argued that giving such responsibility to transport companies can lead to an indirect motivation to work with innovation (Interview, TC 5). However, there are no concrete examples of this strategy leading to innovation.

5.4. Flexibility, risk, and politics linked to contract design

The challenge with linking innovation to contracts is related to a general tension between legal requirements, specification, and low risk, on one hand, and openness, experimentation, and uncertainty, on the other. What is not known, and hence impossible to specify, is the difficulty of handling a contract, both for transport authorities and transport companies.

Transport authorities use different approaches to this tension between control and flexibility. One interviewee stated that it is extremely important 'to know what you buy' and that any uncertainty regarding conditions in the contract will lead to high bids, which is unfavourable from the purchaser's point of view (Interview, PTA 3). For all the

transport authorities that we interviewed, it is important not to exceed the legal boundaries of an agreement. However, one interviewee stated that, occasionally, it can be useful to legally test where a border lies (Interview, PTA 1).

Transport authorities argued that one strategy is to engage in innovative projects and learning activities before a procurement process. For this strategy, demonstration projects are important: 'The reason to work with development or demonstration projects before [procurement], is to be able to know what you [the purchaser] want, because when you procure it is important to know what you want', (Interview, PTA 1). Another interviewee said, '... when it comes down to procurement, it needs to be concretized. We don't really create much space for vague opportunities during the contract period. [...] Generally, we prefer to test innovations first [...]', (Interview, PTA 3).

The transport companies revealed several causes of why innovation does not play a large role in public transport procurements today. One of them is the difficulties in dealing with risk within contracts and linked to pricing. '... I mean, if we take all risk, then we have to put a higher price, so is it', (Interview, TC 2).

Politics can have a large influence on innovation. Politics, for example, setting a climate-friendly target, can be seen as a driver for innovation. However, from transport companies' perspective, politics was also brought up as a barrier to innovation:

"I think that it sometimes can be a bit unfortunate when politicians point toward a certain technology. We prefer when there are functional requirements in the tender documents when we choose technology (Interview, TC 2).

Political priorities can also change fast, which in turn can lead to unnecessary investments and become a waste of tax money. An example given was the case where large investments were done in biogas infrastructure in depots only to be replaced by infrastructure for electric buses ten years later (Interview, TC 3).

5.5. Partnerships and relational collaborations

The transport companies see that working in partnerships with public transport authorities are important in connection to innovation. However, the view of how it works and how large a role the partnerships may have varies slightly.

While one interviewee at a transport company said that a 'partnership is maybe most so we will understand each other, and each other's limitations and interests' (Interview, TC 3), another interviewee expressed high expectations of the use of partnerships: 'partnerships are really good ... The more we can work together in collaboration with the public transport authorities, the larger the benefit, because then we can develop public transport together' (Interview, TC 2).

The transport companies stressed that partnerships only work if they are real and not just words on paper (Interview, TC 5; 3). One interviewee brought up the dialogue phase as an example that does not currently work well. The perception is that public transport authorities do not integrate the suggestions from transport companies into a tender. Hence, while partnerships are important, there must be a drive and actual willingness to innovate among the individuals involved (Interview, TC 3).

Some interviews with transport authorities also emphasized partnerships as a precondition for innovative processes of public transport (Interview PTA 1; 2). There are also several examples of written contracts that have, as a pre-condition, collaboration with transport companies during the contracting period (Thoreson, 2021).

6. Discussion

Based on the findings, how can we understand public transport authorities' and transport companies' reasoning about innovation related to procurement of bus services and, explain the restrictive role innovation has in procurement processes?

Both the transport authorities and the transport companies emphasise that innovation is central; however, the findings show a lack of common understanding of what innovation actually is and how it can be achieved. The descriptions of innovation are mainly related to either a) technical changes, for example electrification and ICT-development or b) solutions that are to improve the whole-trip service provision. Both themes are connected to the societal goals of public transport, namely environmentally friendly public transport that is accessible for all. Using the framework of Sørensen and Torfing (2022), these descriptions of innovation are *innovation solutions* since it involves technical solutions/improvements or service improvements. The findings also show that demonstration projects and collaborative partnership can be facilitators of this type of solutions, indicating that there are elements of both *process* and *institutional innovation* in tendering regimes (Sørensen & Torfing, 2022). The description of innovation also goes in line with the definition by Arundel et al. (2019) which included *improvements* from previous products and processes as innovation. It is also possible to assume that the description of innovative solutions (for example electrification) is of repetitive art (Toivonen et al., 2007). In the theoretical definition of innovation, there is an assumption of intent (Lämsäalmi et al., 2006; Fuglsang, 2010). This can also be identified in the findings, as both actor groups believe innovation is something that the sector should work with. Hence, the findings show several examples of innovation that goes in line with the theoretical definitions.

One can determine, from the results, that both actor groups provided rather similar descriptions of innovation, which responds with the public transport sector goals. However, the findings also show that there is no established view of *who* should be the driving force of pushing for innovation in procurement settings. Transport companies argued that transport authorities have a responsibility to take this role, while the transport authorities argued that transport companies should do it.

How can we explain the different views between the transport authorities and the transport companies?

Drawing from the institutional logic framework, a common logic creates an inclination among actors to concentrate on questions and solutions that are consistent with the established logic (Thornton & Ocasio, 2008). The findings show that there is no single established logic among actor groups in the sector, instead there is an institutional heterogeneity in the transport sector. This means that multiple logics exist (Thornton et al., 2012).

What logic does the transport authorities show examples of? Several examples from interviews with public officials can be linked to rule-based work within the chain of hierarchy (Nederhand et al., 2019; Wagenaar, 2004). The findings show that political aims shape decisions and there is risk aversion linked to costs and procurement legislation violations. The transport authorities also show signs of control in favour of flexibility when it comes to contract design, providing several examples of how they find it difficult to design contracts that are too un-specified and hold too much leverage for transport companies to work without specifications. Their reasoning are in line with the bureaucratic logic (Nederhand et al., 2019; Wagenaar, 2004). In the transport authorities' description of innovation, there are examples of reasoning linked to a societal logic, in the sense that the innovations should lead to an improvement of transport services that are assessable to all and sustainable. This is in line with the overall goals set in the transport sector and can be seen as a commitment to society and prevailing ideologies that now exist (Thornton et al., 2012). In the findings, it is not possible to identify any conflicts behind the bureaucratic and societal logic, instead there is indications that there has been a merging of logics.

What logics can be identified among the transport companies? The market logic emphasises the market position of a firm and growth by acquisition (Thornton, 2004). Transport companies' reasoning on innovation, which is linked to flexible contracts or functional contracts with incentives, is in line with the market logic. The findings show that the transport companies are not motivated to include innovation in their

work related to a contract, if there are no incentives for doing so, or if they cannot be ensured that the cost will not exceed the compensation they have been given. This is an example of rationalising based on growth for the firm (Thornton, 2004). It is also possible to see examples of the societal logic within the transport companies as well. The transport companies show examples of how they work actively to develop new greener service solutions and adapt to the current needs of sustainable demands in society (Lee & Lounsbury, 2015). Hence, the strong trend in society to work with sustainability is also reflected in the results of our study.

Studies that have identified innovation as a logic, describe organisations that work with strategies that can be employed to generate innovative ideas (Smith, 2003). In the contract setting, it is difficult to identify such strategies among the two actor groups. There is a lack of common understanding when it comes to how to integrate work with innovation in contracting regimes. The findings instead indicate a kind of 'blame game' in which one actor group argue that the other actor group should take responsibility for pushing innovation forward. The transport authorities argue that the market should be forward in providing innovative services in the transport sector, while transport companies argued that the public authorities need to adjust their procurement processes to make the processes open/flexible if the companies are to use innovative approaches. Consequently, innovation becomes 'non-existent' and de-coupled from procurement processes. From an institutional logic perspective, the findings point at an absence of an innovation logic among both actor groups.

Logics can play an important role in explaining how actors may reason behind resistance or adaptation of innovation (Van den Broek et al., 2014). The findings show that the transport companies hold a view that transport authorities are rigid when it comes to contract design. The authorities do not allow enough room in the contracts or in tender specifications, that makes it possible for the transport companies to be as innovative as they would want to be. The political setting can also be a hindrance to innovation. Transport companies believe political priorities may change fast, which in turn can lead to unnecessary investments and waste of money. This is not in line with the market logic that is identified among the transport companies. The work with innovation would be easier if the processes are fit to the actor's logic (Van den Broek et al., 2014). One can therefore explain the transport companies' resistance of working with innovation in procurement settings, as a misfit to the logic they operate in. Hence, the process for stimulating innovation is not in line with the actors' logics (Van den Broek et al., 2014). It should be pointed out, that within the legal framework, there are several ways to integrate innovation in the existing procurement regime (innovation procurement, functional procurements, and specific requirements). The transport authorities, believe they have introduced more measures that may stimulate innovation among the transport companies, for example functional demands. But the authorities are risk-adverse and restrictive to additional adaptation of innovative practices, despite possibilities within the legal framework. It seems that the contract setting for stimulating innovation also hold some misalignment to the logic that the transport authorities operate in as well.

The heterogeneity of logics can create conflicts between organisations, as well as within an organisation. However, if the actors/organisations manage to find new ways of collaborating, these conflicts can be broken, or at least put on pause, and in the long run provide ground for change (Lounsbury & Boxenbaum, 2013; Reay & Hinings, 2009). Multiple competing logics can live side by side (Thornton et al., 2012). In the procurement regime of public transport, there is an emphasis on collaboration and partnership between public transport authorities and transport companies throughout the contracting period (Hensher, 2017). A partnership could be one way to overcome potential conflicts or mismatches between logics (Lounsbury & Boxenbaum, 2013). The findings, especially the interviews with transport companies, show examples of problems in the collaborative practices. If one is to be

successful, there needs to be a driving force from individuals who are willing to collaborate and change perspectives (Hensher, 2017). In this study, relational aspects, such as collaboration and partnership, are not seen to be sufficient to overcome the different views transport authorities and transport companies have on how innovation can be achieved.

7. Conclusion

Sweden is ranked high on global innovation indexes as well as in the field of mobility. Large technological changes in the transport sector have shown that there is undoubtedly innovation potential in the sector. Public procurement can be a tool that the public sector can use to facilitate innovation. However, in Sweden, the use of innovation procurement in the bus sector is limited. We named this paper 'Innovation in stable competitive tendering regimes: An insoluble knot?' The title reflects the conflicting perspectives that exist in the sector. Using a theoretical perspective of innovation and institutional logics, the paper has explored how public transport authorities and transport companies reason about innovation related to procurement of bus services.

It is concluded that both transport authorities and transport companies have difficulties in defining what innovation is when it comes to procuring public transport. The descriptions show that innovation is mainly related to solutions and their descriptions are mainly related to technological- and service improvement. One explanation of why innovation is vaguely defined, and why there is a difficulty in addressing this vagueness, might be because neither authorities nor companies believe it is their role to drive innovative work forward. Transport authorities believe innovation should take place in the market, while the transport companies believe innovation in the tendering process should be stimulated by the public through the contracts. Currently, no organisation is driven by a logic of innovation.

By applying an institutional logics perspective, the article, due to conflicting logics among the transport authorities and the transport companies. The institutional logic perspective has made it possible to provide explanations of why it is difficult to work with innovation within existing contracting regimes. The transport authorities and the transport companies are two actor groups that relies on different logics in their day-to-day work, and this is transferred to the procurement context. Contrasting logics can work side by side, but this requires good collaborative arrangements. It has not been possible to identify successful collaborative areas in the procurement context. Instead, the competitive environment between market actors as well as the principal-agent structure between transport authorities and transport companies might hinder constructive relational arrangements. From an innovation perspective, this is problematic; and more studies linking innovation to procurement processes are encouraged.

It is also concluded that both transport authorities and transport companies believe there is potential to stimulate innovation using procurement contracts. Transport authorities have shown examples of both functional and special requirements that can stimulate innovation; however, transport companies believe there are insufficient incentives in contract design. Because risks have such a large effect on price, it is important to find ways to share risks between public transport authorities and transport companies. Models for how to handle risks in contracts are therefore of importance for further research.

Outside of contracts, non-functioning partnerships, lack of knowledge and short-term politics provide barriers to innovation in the procurement of public transport. These factors are also central in understanding innovation and needs more research on.

Interviews

- Representative from Public Transport Authority 1, January 2021
- Representative with management role, from Public Transport Authority 1, January 2021
- Representative from Public Transport Authority 1, February 2021

- Representative from Public Transport Authority 2, February 2021
- Representative from Public Transport Authority 2, February 2021
- Representative from Public official, Public Transport Authority 3, January 2021
- Representative with management role, from Transport Company 1, August 2021
- Representative from Transport Company 2, October 2021.
- Representative from Transport Company 3, September 2021.
- Representative with management role from Transport Company 4, September 2021.
- Representative with management role from Transport Company 4, September 2021.
- Representative with management role from Transport Company 5, October 2021.
- Representative from Transport Company 5, October 2021.
- Representative with management role from Transport Company 6, September 2021
- Representative with management role from Transport Company 6, September 2021

CRediT authorship contribution statement

Lisa Hansson: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft, Writing – review & editing. **Malin Aldenius:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft. **Alexander Paulsson:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft. **Karin Thoreson:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft.

Declaration of competing interest

The authors declare that they have no conflict of interest.

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