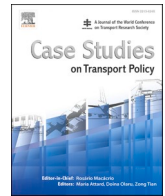


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# Increasing public transport patronage – An analysis of planning principles and public transport governance in Swedish regions with the highest growth in ridership

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## ABSTRACT

Increasing the attractiveness of public transport is a key issue in the endeavours towards more sustainable transport systems. While there is a lot of knowledge on what can be done to increase public transport patronage, there is a lack of empirically based research analysing how to do this in practice. Using a comparative case analysis of six regions in Sweden with the highest increase in passenger volumes for public transport between 2009 and 2015, this paper examines the prerequisites for increasing public transport patronage, with a focus on the governance conditions required to implement such measures. The empirical material consists of semi-structured interviews with public transport planners and strategy documents for the six regions. The findings show that all regions but one employed a similar approach and implemented measures aimed at concentrating resources to corridors where the potential demand was the greatest. Only one region chose a different approach by investing in services in both strong routes and in the peripheral network. However, regardless of approach, the results highlight that there is considerable coherence regarding the governance conditions that enable implementation. Three main conditions were identified, namely political support, well-functioning collaboration between organisations, and public support through citizen dialogue. The results support key findings on collaborative conditions from previous research, including the importance of joint objectives, trust between key individuals, and the need for long time frames in order to develop collaborative capacity.

## 1. Introduction

Public transport is today recognised as one of society's most important tools for reconciling mobility needs with sustainability challenges such as air pollution and climate change (e.g. [Banister, 2005](#); [Curtis and Low, 2012](#); [Newman and Kenworthy, 2015](#)). To enable public transport to contribute to achieve societal goals, high-quality public transport systems with the ability to attract more passengers must be created.

On the planning level, where the actual 'design' of the services takes place, decisions on the public transport system need to be made concerning a number of well-known trade-offs, for example, area coverage versus frequency of services, the speed of services versus the number of stops, operating hours versus frequency, etc. ([van de Velde, 1999](#), [Nielsen et al., 2005](#), [Mulley et al., 2018](#), [Hansson et al., 2019](#)). These

trade-offs can be viewed as levers that public transport planners can use to tweak the system and thereby increase patronage. However, decisions made at the planning level are linked to governance conditions that must be taken into account if we are to understand the on-going operations and processes of change on the system level. The levers influencing the planning trade-offs cannot be used indiscriminately; instead, their availability to planners, how much they can be adjusted, and in what direction depends on governance conditions. This includes how political objectives for public transport are defined, budget restrictions, and acceptance for public subsidies ([Walker, 2008](#)). How citizens view the proposed and implemented changes regarding the trade-offs is also a key issue influencing political support for changes concerning system design ([Pettersson, 2018](#)). Finally, various organisations on different governance levels (e.g. the local, regional, and national level) typically control different levers that influence the attractiveness of public transport (e.g.

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Veeneman and Mulley, 2018; Hrelja et al., 2016, 2019), and therefore collaboration between stakeholders is an important governance condition.

Currently, there is a great deal of knowledge of what should be done in order to increase patronage in terms of planning principles and measures (we will provide a more detailed account of this in section 2.1), and there is a substantial body of literature discussing governance challenges in public transport (we will return to this in section 2.2). However, despite the apparent linkages between the planning level concerning trade-offs and the governance conditions influencing such decisions, joint analyses of important planning *and* governance-related prerequisites for high-quality public transport in real-world cases are rare (although some examples exist, e.g. Kim and Dickey, 2006; Buehler et al., 2019).

A starting point in this paper is that it is important to understand both *what* has been done by public transport authorities (PTAs) and other stakeholders who have been successful in increasing patronage in terms of the design of the public transport systems and *how* they have managed to implement such changes. In this paper we will therefore identify prerequisites for increasing public transport patronage by analysing both planning decisions and governance conditions in six Swedish regions.

The aim of the paper is twofold. First, we will describe and compare the planning principles and practical measures that have been implemented in the six regions to increase patronage. Second, we will identify the governance conditions and factors that influence the implementation by analysing how the implementation of these measures has been organised and made possible. Empirically, we conduct a comparative case analysis of PTAs in six Swedish regions with the highest growth in patronage.

The outline of the paper is as follows. In chapter 2, we revisit previous research regarding planning principles and measures for increasing public transport patronage and analyses of governance and implementation challenges. In chapter 3, we present the six cases and discuss the methodological approach of the study. In chapter 4, we present and analyse the empirical results of the study both regarding the use of measures and the governance conditions. In chapter 5, we discuss the implications of our results and the need for further research. Finally, in chapter 6 we summarise the main conclusions.

## 2. Creating high-quality public transport systems: evidence from research

In this paper, we carried out a joint analysis of the measures that are used for creating high-quality public transport systems that increase patronage as well as the governance conditions needed to implement such measures. The analytical framework thus has two dimensions: (1) assessment of changes and measures implemented by PTAs to increase travel by public transport in relation to the state-of-the-art in public transport planning and (2) analysis of the governance conditions that facilitated the implementation of the changes. Before presenting the results, we describe previous research on how to design and govern high-quality public transport systems.

### 2.1. Planning principles and measures for introducing high-quality public transport – ‘best practice’ in theory

According to previous research, planning and implementation of high-quality public transport with high coverage requires network-oriented planning and management of transport modes with multi-modal transport networks. The principle of network-oriented public transport is that every route should effectively and directly serve a specific flow of passengers (White, 2016) and should be interlinked within the system to provide maximum transfer accessibility (Nielsen et al., 2005; McLeod et al., 2017).

Additionally, Nielsen et al. (2005) propose two overarching planning

principles for creating high-quality public transport systems. The first is to ensure long-term network stability, but with flexibility to adjust to changes in demand. This means that the bulk of the system should be unaltered and characterised by high-quality services, while at the same time it should be possible to add new elements to the system when developing new areas (Nielsen et al., 2005). The second principle concerns creating a robust and simple network structure with few routes, which creates several synergies for users as well as for planning and operations. Benefits for the users include a system that is easier to comprehend and remember. For the organisations that are responsible for planning and operations, the benefits include a robust and simple system that is easier to plan, operate, market, brand, and sell (Nielsen et al., 2005; White, 2016).

In urban environments, systems linking residential areas with urban centres and areas with a high workplace density should, according to White (2016), be designed with few routes and frequent departures characterised by a high degree of punctuality. Ticket systems should be simple and integrated, and vehicles should be comfortable, of a high standard, and should allow for ease of boarding (Matas, 2004; Abrate et al., 2009; Redman et al., 2013).

Rye and Howes (2005) identified several specific measures to operationalise the two overarching principles of long-term network stability and a simple network structure with few routes. These include:

- Speeding up core services, e.g. through public transport priority measures or creating segregated systems, because this is important to increase attractiveness to users.
- Focussing on simple routes in high-frequency service corridors.

The aim of these types of measures is to improve reliability, which is a key quality attribute of high-quality public transport systems. In addition, the following types of measures are proposed by Rye and Howes (2005):

- Cutting fares through, for example, integrated season tickets.
- Clean, safe, and comfortable vehicles and stations.
- Measures to reduce the attractiveness of using automobiles, such as parking policies, traffic calming devices, and a holistic approach to land-use and transport planning that promotes the use of public transport.

This last point is particularly important for the long-term development of public transport. Local and regional transport and land-use planning should be integrated so that planning at all levels strengthens the attractiveness of public transport and its long-term competitiveness vis-à-vis car traffic. This includes prioritising public transport over other transport modes on specific routes (Nielsen et al., 2005; Newnam and Kenworthy, 2015).

However, what constitutes a high-quality public transport system is open to discussion. For example, in public transport planning there is often a tension between the priorities of regional and local authorities when deciding where to provide public transport services (Hrelja et al., 2017). This tension is partly a consequence of the constraints of available resources. Planning must therefore balance the potentially competing goals of patronage outcomes and coverage outcomes. Coverage goals put the emphasis on providing geographical equity or on meeting the mobility needs of disadvantaged passenger groups, whereas patronage goals put the emphasis on financial return and environmental objectives (Walker, 2008; McLeod et al., 2017). In systems where patronage goals are emphasised, public transport organisations mainly invest in bus and train routes that have the most passengers and the greatest potential for increases in patronage, so-called high-demand routes.

Thus, it is important to point out that statements about what a ‘high-quality’ public transport system is, or what ‘best practice’ is, are only meaningful in relation to the goals of public transport to which the

statements refer. The stamp of 'best practice' will thus be open to discussion because what is 'best' in relation to one objective will not necessarily be the best solution for a different goal (Nielsen et al., 2005, p.19). The same applies to the concept of high-quality public transport systems – here we refer to public transport systems' ability to attract new users. The systems are deemed high quality in this respect but might be less successful if judged on the basis of other criteria such as accessibility or equity.

## 2.2. Governance conditions and implementation challenges

The principles for the design and planning of high-quality public transport systems may appear relatively simple to implement. However, implementing changes in established public transport systems can prove to be a challenging task. Previous research reveals that public transport organisations in many countries face similar challenges regardless of the legal and organisational settings in which public transport decision-making and planning operate (Rye et al., 2018; Hrelja et al., 2019). The challenges of improving public transport are often described as collaborative issues between various public and private organisations (Rivasplata et al., 2012; Hrelja et al., 2016; Buehler et al., 2019).

According to research on public transport and the development of sustainable transport systems in general (in which public transport is studied as part of that context), the collaborative problems are particularly evident in two areas. The first deals with the difficulties of creating high-quality public transport systems and all that this involves in terms of the coordination of schedules, the creation of coherent ticket systems, etc., in order to provide good service, coherence, and simplicity for passengers (Chen and Wikstrom, 2009; Kim and Dickey, 2006; Lin et al., 2017; Lindau et al., 2014; McLeod et al., 2017; Wan et al., 2013).

The second deals with the difficulties of establishing *integrated public transport and land-use planning* (Curtis and James, 2004; Hrelja, 2015; Guthrie and Fan, 2016; Kaufmann and Sager, 2006; Maulat and Krauss, 2014; Mu and de Jong, 2016, 2012). The problems of establishing integrated public transport and land-use planning illustrate how collaborative problems can arise because many independent organisations have to coordinate their decisions in order to produce a regional and urban structure that will contribute to increased public transport use in the long term – sometimes referred to as Transit Oriented Development (TOD) (Mu and de Jong, 2012; Hakkaart and Morrissey, 2014). In many countries, this is because the responsibility for public transport planning and land-use planning is divided between organisations.

One can conclude that the current legal and organisational conditions often make it hard to initiate needed change in public transport systems due to fragmented areas of responsibilities. Although research shows how the development of a high-quality public transport system rests heavily on the different organisations' capability to work together, it also shows that the interaction between organisations is often anything but collaboratively oriented. Previous research describes lock-ins resulting from the way current legislation and planning systems are organised and the resulting power relationships (e.g., Kaufmann and Sager, 2006; Kim and Dickey, 2006; Low and Astle, 2009; Fenton, 2016). The fact that different organisations often have different professional cultures is also discussed and presented as a problem (e.g. Curtis and James, 2004; Low and Astle, 2009; Curtis and Scheurer, 2010; Maulat and Krauss, 2014; Schmale et al., 2015). This may cause communication problems, possibly making it difficult for organisations to achieve consensus regarding potential measures (Maulat and Krauss, 2014). This in turn contributes to implementation difficulties (Kaufmann and Sager, 2006; Preston, 2010; Lindau et al., 2014). Hrelja (2015) and Mu and de Jong (2016) additionally describe how decentralised decision-making, division of labour, and distribution of commitment, as well as increased tensions between different public sectors, constitute key challenges in several countries.

The key question arising from the above literature review is how changes in public transport systems are initiated and implemented.

While it is clear that the establishment of high-quality public transport systems requires functioning collaborations between organisations, deeper insights are needed in regard to the process by which this necessary support for change is created in practice. In our analysis of the Swedish cases, we will therefore describe and analyse how officials responsible for public transport in the regions with the largest patronage increases explained how they have managed to create support for and implement measures for increased travel on public transport.

## 3. Method

In Sweden, the county councils and their associated municipalities are jointly responsible for public transport, and the Swedish Public Transport Act requires counties and municipalities to establish a regional PTA that is responsible for the strategic planning of public transport (SFS, 2010). This is manifested in a Regional Transport Supply Programme that covers both commercial and public services. In most regions, public services are procured in competition and operated by private companies, but sometimes they are operated in-house. The shared responsibility between municipalities and county councils means that the PTAs must consider the views of municipalities when designing the public transport system, not least because the municipalities are responsible for land-use planning. The legislation also allows operators to initiate new lines on a commercial basis, but this has been rare so far in Sweden.

The regional context, with different political circumstances, objectives, planning traditions, and relations between PTAs, municipalities, operators, etc., has a crucial bearing on how changes in public transport systems are initiated and implemented. In order to understand why and how measures to increase patronage have been chosen and implemented in the six regions, we need empirically grounded descriptions to support our analysis. This calls for case studies because with the case-study method one can study a phenomenon in context (George and Bennett, 2005; Yin, 2009). The case study method is characterised by an approach that is aimed at explaining or understanding a case in the sense of a functioning complex whole that is studied within its context. The case study method is thus used in this paper to provide an understanding of the prerequisites for increasing public transport patronage, with a focus on the governance conditions required to implement measures within the context of the regions being studied.

### 3.1. Selection of case study regions

We performed an information-oriented selection of cases in order to maximise the utility of information from small samples (Flyvbjerg, 2006). The selected regions comprise a population of cases with good development of public transport patronage. In other words, they can be said to be "critical cases" (Flyvbjerg, 2006) in the sense that they can be defined as having strategic importance in relation to the general problem of how to increase patronage. The analytical assumption is that one should be able to answer the question of how to increase patronage by analysing why and how measures to increase patronage have been chosen and implemented in some of the most 'successful' regions. If some factors can be shown to be valid for these cases, they are probably valid for many cases, although the results of this paper are not statistically generalisable because of their qualitative character (we elaborate on this below).

We compared 2009 to 2015 and chose six regions that have had a strong increase in patronage based on the total number of trips. These include Västmanland, Kronoberg, Uppsala, Kalmar, Västerbotten, and Jönköping, with an increase in the number of total trips with public transport between 2009 and 2015 ranging from 28% for Jönköping to 63% for Västmanland (see Table 1). This can be compared to the national average of an 18% increase in total trips. The variation in public transport development among the 21 regions in Sweden is large – five regions have had a modest increase (0–10%), three regions have had a

Table 1

Total passenger trips with public transport in the Swedish regions, 2009 and 2015.

	Total trips 2009 (in thousands)	Total trips 2015 (in thousands)	Percentage change	Position	Population density 2019 (per km <sup>2</sup> )
<b>Västmanland</b>	<b>8,656</b>	<b>14,101</b>	<b>62.9%</b>	<b>1</b>	<b>53.9</b>
<b>Kronoberg</b>	<b>5,949</b>	<b>9,190</b>	<b>54.5%</b>	<b>2</b>	<b>23.9</b>
<b>Uppsala</b>	<b>26,700</b>	<b>38,170</b>	<b>43.0%</b>	<b>3</b>	<b>46.9</b>
Södermanland	9,133	13,012	42.5%	4	49.0
<b>Kalmar</b>	<b>6,678</b>	<b>9,384</b>	<b>40.5%</b>	<b>5</b>	<b>22.0</b>
Halland	12,350	16,846	36.4%	6	61.5
<b>Västerbotten</b>	<b>9,196</b>	<b>11,913</b>	<b>29.6%</b>	<b>7</b>	<b>5.0</b>
<b>Jönköping</b>	<b>16,228</b>	<b>20,725</b>	<b>27.7%</b>	<b>8</b>	<b>34.8</b>
Västra Götaland	220,841	280,096	26.8%	9	72.5
Skåne	135,587	158,860	24.5%	10	125.7
Stockholm	691,049	800,131	15.8%	11	364.9
Gävleborg	12,302	14,167	15.2%	12	15.9
Blekinge	7,571	8,217	8.5%	13	54.5
Jämtland	5,460	5,893	7.9%	14	2.7
Östergötland	26,516	28,508	7.5%	15	44.1
Västernorrland	9,379	9,709	3.5%	16	11.4
Värmland	12,358	12,407	0.4%	17	16.1
Norrbottn	8,357	8,273	-1.0%	18	2.6
Örebro	12,225	11,403	-6.7%	19	35.8
Dalarna	13,443	10,118	-24.7%	20	10.3
Gotland	1,143	854	-25.3%	21	19.0
<b>Sweden total</b>	<b>1,251,121</b>	<b>1,482,427</b>	<b>18.5%</b>		25.4

Source: Trafikanalys 2010p. 41; Trafikanalys 2016, p. 45.

medium to large increase (10–15%), while nine regions, including the six in the study, have had an increase of more than 20%. Four regions have had a decrease in total trips during the same time period. The regions in the study are ranked as 1, 2, 3, 5, 7, and 8 in the country based on their increases in total trips<sup>1</sup>.

The six regions have some similar characteristics. They are all medium-sized regions (in terms of both area and inhabitants) with a large- or medium-sized city as the clear regional centre. Five of the regions are located in the middle or southern part of Sweden, while one (Västerbotten) is located in the north. Västerbotten also differs in that it has a considerably lower population density, which is common for regions in the north of Sweden. It should be emphasised that our aim has not been to identify the six most successful regions or those where public transport is most developed in terms of volumes or market share. Instead, we have selected regions where public transport patronage has increased in order to study what measures have been implemented and how the changes have been organised. Two regions (Södermanland and Halland) in the top eight are not included in the study, which can be seen as a limitation. However, because they have similar characteristics (i.e. medium sized and located in southern/central Sweden) to several other regions that were included, we do not consider that their exclusion significantly affected the results. None of the three metropolitan regions in Sweden (Stockholm, Västra Götaland, and Skåne) are included in the study. Although they have the largest patronage both in terms of volumes and market shares, they have not had similarly large increases in recent years, and they have quite specific conditions in the Swedish context compared to other regions with, for example, high population densities and a larger public transport network.

### 3.2. Empirical material and analytical method

The material was qualitative and consisted of written material and semi-structured interviews with civil servants. By combining written sources and interviews, our aim was to create an understanding of what had been done and to understand the dynamics of the decision-making and implementation processes. The written material consisted mainly of the Regional Transport Supply Programmes in the six regions and was

<sup>1</sup> A similar picture is shown when using other parameters, e.g. change in passenger kilometres, where the six regions exhibit an increase ranging from 27% to 95% and are ranked 2, 3, 5, 6, 7, and 10.

used to complement and verify the information from the interviews regarding the goals and measures related to public transport patronage and the organisation of public transport.

The interviews were conducted from October to November 2018 using an interview guide. The civil servants interviewed worked as public transport or infrastructure strategists, traffic and planning managers, and planners at PTAs or municipalities. Altogether, nine interviews were conducted with 10 civil servants (one interview involved two interviewees) (see Table 2).

The interviews were recorded with the approval of the interviewees and transcribed verbatim. The purpose of the interviews was to find out how the interviewees explained the increase in public transport patronage and how this change was made possible. Example of questions in the interview guide were: What is the reason for the increase in patronage according to you? What are the main measures that have been implemented to increase patronage? What challenges have you faced, and how have they been tackled? What types of collaboration have existed between different actors, and what have their roles been to increase patronage? What are the main mechanisms/tools for collaboration?

The method used for analysis was meaning condensation; that is,

Table 2

List of interviews.

Interview code	Date	Position
Interview A Jönköping	November 12, 2018	Regional public transport planner
Interview B Jönköping	November 12, 2018	Regional infrastructure planner
Interview Kalmar (2 respondents)	November 15, 2018	Regional public transport planner
Interview Kronoberg	November 6, 2018	Regional public transport planner
Interview Västerbotten	November 14, 2018	Municipal public transport planner
Interview A Västmanland	November 9, 2018	Municipal transport planner
Interview B Västmanland	November 12, 2018	Regional public transport planner
Interview A Uppsala,	October 25, 2018	Municipal transport and infrastructure planner
Interview B Uppsala,	November 5, 2018	Regional public transport planner



each transcript was read through and passages from it were condensed into shorter statements (Brinkmann & Kvale 2014). These statements were then categorised into thematic descriptions of issues and factors of importance for increasing public transport patronage. Themes, here understood as recurring regularities in the material (Ryan and Bernard, 2003), were identified by reading the interview transcripts several times.

In order to reduce cognitive bias, the transcripts were reviewed by all research team members. This investigator or analyst triangulation (Patton 1990) provided an important check on interpretive bias in the situation where several researchers reviewed the transcripts.

In section four, verbatim quotes from the interviews are used to illustrate the results. The validity of our interpretations is strengthened by comparing statements from different interviews (Silverman, 1993), meaning that many of the quotes presented function as examples of general analytical patterns in the interviews. We also checked more factual statements against what was written in the Regional Transport Supply Programmes.

### 3.3. Limitations

The growth in patronage has, as was already mentioned, been the main parameter in the regions we selected, but our intent with choosing these regions was not to establish a causal link between the implemented measures and the increase in patronage in a statistical sense or to identify the most effective measures. Our conclusions about why patronage has increased are based on the interviewees' explanations and experiences. An obvious limitation with a case study approach comprising six cases is also that it limits attempts for making statistical generalisations. However, the aim of this paper was more about understanding the complexities and governance conditions required to implement measures. Instead of answering questions regarding how many and how much, this paper answer questions of how and why (Brinkmann and Kvale 2014). It is the interviewees' understandings, experiences, and positions that form the basis of the analysis of how implementation of measures has been organized and made possible. A common understanding of generalisability in qualitative research is to think in terms of the reader of the paper (Merriam 2009), and the analytical arguments we make will enable other researchers and practitioners to deduce whether or not the findings are transferable to other cases at a later stage.

## 4. Results

In this chapter, we present the analysis of the efforts to increase public transport patronage in the six Swedish regions regarding both the planning principles and measures that were used and the governance conditions and factors affecting implementation.

### 4.1. Planning principles and measures in the six regions

The planning principles and measures used to increase patronage were similar in almost all of the regions. Below we will discuss the main principles and measures used in the regions (for an overview, see the Table in Appendix A). From the Regional Public Transport Programmes, it can be seen that increased patronage has been a high priority in all six regions, and in four of the regions there are explicit goals in terms of an increase in either numbers of passengers or market shares.

One of the primary reasons for the general increase in public transport in the regions is a substantial increase in travelling by bus in the main city of the region (Växjö, Kalmar, Västerås, Uppsala, and Umeå). In all regions, similar measures were introduced to improve the bus system in the main city. The main elements of this package were more resources for public transport and increased provision of services combined with a major reorganisation of the bus routes in the city that resulted in fewer, straighter, and faster routes, increased frequency of departures, and

more coherent bus schedules. This included a change in the design of the public transport system that meant that the PTAs did not take into account what one interviewee called 'special interests'. Public transport was previously characterized by:

"...deviating lanes. You drove one route on school days, you drove another late at night [...] There were many such compromises. Instead of giving everyone a little, we made a radical move. We said, 'No, we are driving like this now'. It may sound simple, but it is difficult in terms of opinion as well as politically difficult to implement" (Interview Kronoberg).

The aim of these changes has been to make bus transport a more attractive option for commuting and travel in the city by making it faster and more frequent on high-demand routes. A side effect of this has been that some neighbourhoods have lost bus routes and, on average, the distance between bus stops has increased. The measures have been successful and have increased travel volumes in all cities. These changes have often been accompanied by other measures such as improved information and marketing, changes in the ticketing system, new design of buses and bus stops, and improved access for buses in the city.

Regional public transport has also increased in the regions, but here the focus has differed between train traffic (Uppsala, Kronoberg) and bus traffic (Västmanland, Kalmar). The exception is Umeå where regional traffic has not increased to any great extent. In those regions where regional bus traffic has increased, we found that similar measures have been introduced. These include increased provision, more departures, investments in high-demand routes between main cities and towns, and fewer and straighter routes often on highways and avoiding smaller towns. The aim of the measures has been to compete with commuting by car. Some regions have opted for a focus on regional train traffic with investments in new lines and stations and more frequent departures. The focus on strong routes has led to reduced services in rural areas and sometimes a removal of weaker bus routes. In most regions there has been an attempt to compensate for this by introducing demand-responsive transport in the countryside. It is beyond the scope of this paper to analyse the outcomes of these efforts, but general experience from Sweden shows that demand-responsive transport has so far only been used to a very little extent (Trafikanalys, 2015).

The region of Jönköping differs in some respects from the other five regions. Here there has been an increase in bus and train traffic in all parts of the region, both in the main city, in smaller towns, and in regional traffic. This is directly related to an outspoken political objective in the region to invest in all sectors of the public transport system and in all parts of the region. Although measures similar to those in the other regions have been introduced for bus traffic in the city of Jönköping, there has not been a pronounced focus on increasing patronage in the largest city. Instead, there has been a general increase of provision in all parts of the region with dedication of more resources. The model used in Jönköping has proven successful in increasing passenger volumes, but the respondents also consider it to be expensive. To date there has been political support for the increased costs because the region has a good economic situation. Other measures have also been introduced in Jönköping such as concessions to young people and changes in price zoning to make longer trips comparatively cheaper. Concessions were only mentioned in one other region, Kalmar, where fares are reduced for young and old people. The interviewees in the regions agreed that the increase in passenger volumes could be primarily attributed to the measures that have been implemented; the only other external factor referred to was an increase in population. In Jönköping the recent influx of refugees to smaller towns was reported to considerably increase demand for public transport. In Uppsala, the interviewee referred to a general population increase as a reason for the higher demand in public transport not only between Uppsala and Stockholm, but also between Uppsala and other towns.

#### 4.2. Governance conditions and implementation challenges

There are some common reasons for the change process that started in the regions and enabled the major restructuring of the public transport networks. In several of the regions it was obvious that public transport was neither efficient nor attractive, and there was political dissatisfaction with the situation. This was particularly true in Kronoberg and Västmanland where there was strong political pressure for change. Västerbotten had bad experiences with contracting of traffic in the city of Umeå, which prompted rethinking and better collaboration between the PTA, operators, and the local authority. Another driver for change was the industry's national goal to double the market shares for public transport, which spurred efforts at the local and regional levels (WSP, 2016). The year 2012, when a new public transport act was introduced, saw a major reorganisation of public transport after which the regional bodies became responsible for public transport throughout the region, and this has been an important driver in several of the cases. Finally, several of the interviewees stated that the changes made are not 'rocket science' but rather follow best practice and have been part of a wider trend to change public transport planning practice. The implementation of measures has been tightly linked to an on-going change in the perceptions of what constitutes a 'well-functioning' public transport system. The measures have been developed within the framework of a more market-influenced view of the conditions and management of public transport compared to previously. This is illustrated by an interviewee from the region of Kronoberg:

"We also went more in the direction of market thinking. I would say that the whole sector did this to some extent. [...] Before it was more production thinking, we were production companies. Now the market thinking is visible in all aspects, even with my colleagues who work with traffic planning. They are not first and foremost production people but work for a market and to win over customers. And this whole change is rather difficult and painful." (Interview Kronoberg).

Still, it is not straightforward to carry out such major changes to the public transport system. In the remainder of this chapter we will analyse the three major factors that have made this possible in our studied regions, namely achieving political support, communication and public acceptance, and collaboration between main stakeholders. These factors were recurring themes in the respondents' reflections on the increase in travel by public transport.

##### 4.2.1. Achieving political support

Political support is obviously a crucial element when changes are made within politically steered organisations. The regions studied here have generally been in political agreement that public transport is important and that there has been a need for reorganisation of the public transport system. Even so, political support has not been without its problems in many of the regions. The changes implemented can be controversial because they can have negative effects on some users and local communities, and in this situation there is a clear possibility that locally based politicians will be inclined to oppose the changes. Several of the interviewed civil servants brought up this problem. In Kalmar, one interviewee said that it is often the politicians in the smaller towns where there were cutbacks who 'have a hard time' because local residents are sceptical to the changes. The way to overcome this resistance was to secure general political support at the municipal and regional level so that individual local politicians who were negative did not stop the plans. In Umeå, an interviewee stated that it was a positive thing that he answered directly to the leading politicians because they are more experienced and are used to tough situations, thus they can resist pressure from local groups. One important factor for retaining political support was a continuous dialogue with politicians at different levels to ensure that they were always informed about the changes that were

being made. This included regular meetings between local and regional politicians to exchange information about on-going changes. Another crucial element has been the ability of the civil servants to report positive results from the changes in terms of increases in the numbers of passengers and market shares. This has made it possible for politicians to motivate the changes and support further measures. It is important to note that political support is necessary at several levels, both at the regional level where the main responsibility for public transport is often placed, and at the local level in all individual municipalities where public transport is provided and the changes are implemented.

##### 4.2.2. Communication and public acceptance

The changes in the public transport systems have also led to a poorer situation for some users and local communities with cancelled routes and longer distances to bus stops. There is an important dilemma here because the majority who experience improvements will generally be silent while the smaller group who face a negative outcome will be more vociferous. There is also the dilemma of which negative impacts can be motivated for the greater good and how they should be implemented and communicated. This issue has, to varying degrees, been important in four of the six regions studied here. The involved authorities have developed ways to communicate changes to the public and in some cases listened to the concerns of local communities. In Uppsala, an interviewee noted that local protests have been an issue and that changes have not gone as far as planned because politicians dared not take up the conflict. In Kronoberg, another interviewee stated that they have become much more proactive in their planning and communication with the public, for example, by identifying which groups will be affected and designing an information plan that targets different groups and explains what changes will be made and the arguments supporting these changes. Thus they "try to address much of the negative response before they make the change rather than afterwards" (Interview Kronoberg).

In Västmanland, the interviewees described a very comprehensive information and dialogue campaign that accompanied the planning and implementation of changes to the bus routes in the city of Västerås. In this case the changes affected the whole city and meant that many people were affected, and thus information activities included visits and exhibits at shopping malls and public squares where the public could ask questions and give comments. In two cases, new detailed development plans had to be made and involved a formal dialogue process as well as protests and appeals from citizens. A respondent from the city of Västerås explained their stance in this dialogue process:

"To go there and meet up and explain things all the time, to not back away from these things. And to listen, not just to go marching in saying, 'Here comes the municipality, we have already decided, and you have no say in this'. Instead we give and take, we explain our aim and we listen, so that we meet in some way. Because I do not think it is credible if I were to go to a citizen meeting with everything already decided. What is the point then of having the meeting?" (Interview B Västmanland)

The interviewees claimed that the extensive citizen dialogue meant that once the changes were implemented there were very few complaints from the public and that the new bus system received very positive reactions.

##### 4.2.3. Collaboration between main stakeholders

In all six regions either new forms of collaboration, or a deepening of existing collaborations, have been established in connection with the initiation, planning, and implementation of the various changes. Collaboration has been organised both as a continuous dialogue and exchange of information and in relation to specific projects and measures.

In all regions there are forums and networks for a continuous dialogue, collaboration, and exchange of information between the regional

PTA and the municipalities, both for civil servants and elected representatives. In Jönköping there is a coordinating group for public transport where not only the representatives from all the municipalities participate, but also the regional planning officer and the public transport strategist. In addition, there is a higher-level coordinating group that meets once a month with the regional and municipal senior civil servants. Similar accounts of institutionalised cooperation were also provided by the other regions.

Apart from the day-to-day cooperation, joint planning organisations have been created when new larger changes have been planned and implemented such as new routes in a city, infrastructure investments to increase priority and improve accessibility for bus traffic, or the development of new residential areas. Typically, these changes have been implemented in the main city in the region where increases in public transport have been most pronounced. In Västerås, in the region of Västmanland, planning of a major reform of the public transport system was initiated in 2008 and was finally implemented in 2013. A completely new project organisation was established, which involved the main organisations in the change, including the city of Västerås, the PTA, and the public transport operators (which in this case were publicly owned). The project organisation consisted of several working groups responsible for planning routes, infrastructure measures, timetables, traffic information, marketing, etc. Although the three organisations had a common goal, they had different priorities and competences. In the interviews, the respondents described a well-developed strategy to further collaboration and increase trust between the different organisations and individuals involved. There was a mix of persons in all the working groups with representatives from all organisations, and although the city of Västerås was the main partner in the project, the strategy was deliberately designed so that the different working groups had sub-project leaders from all of the involved organisations. This created a sense of shared ownership and responsibility.

“We appointed sub-project leaders from all partners so that the city had a sub-project leader in one group and the region in another. In that way you got to feel responsible. And then there was very tight communication between me and the sub-project leaders, so we shared information all the time about what the situation was.” (Interview B Västmanland)

The project leaders also strove to involve other actors such as the bus drivers, other parts of the municipal administration, and politicians at the municipal and regional levels.

In the region of Västerbotten, a similar picture was painted regarding the organisation and planning of public bus transport in the city of Umeå. In 2008, the city had a bad experience with the contracting of local bus traffic, which resulted in poor quality and negative publicity. As a consequence, the main organisations decided that they needed to increase dialogue and establish better collaborations. This led to the formation of a new joint planning organisation that involved the city of Umeå, the PTA, and the public transport operator (in this case a private company). Their first action was to agree on a steering document that described how they should work and what their respective roles should be. The organisation consisted of a steering group and various working groups dealing with traffic planning, marketing, crisis management, and so on. All organisations were represented in each working group. The interviewee described how the organisations have a common goal to develop public transport and how the main form of interaction in the working group is collaboration and dialogue in an effort to find the best solutions jointly. Still, the organisations have different priorities and do not always agree. Therefore, in the event of a disagreement they take a vote, and the interviewee explained that this was crucial to maintaining a sense of joint ownership and mutual trust between the partners.

“As financiers of public transport, we have a large say but we are not afraid to let others in with ideas and thoughts on our work. [...] We do not have endless resources and sometimes we have to prioritise,

and then we simply vote. And I have lost the vote on some occasions too, but then we do as the majority wishes, even if it is us who take up the cost in the end.” (Interview Västerbotten).

Voting is, however, more of an exception, and the main purpose of the working groups is to reach solutions that all can agree upon. Ten years after its formation, this joint planning organisation is still being used to plan local bus traffic and to handle any issues that arise.

Similar arrangements for collaboration were described in the other regions. In Uppsala, temporary joint planning organisations have been established to change the routes for city traffic and to increase priority and accessibility for bus traffic. In Kronoberg, a respondent at the regional level describes a close collaboration between the region and the city of Växjö, and how public transport interests enter much earlier in the processes for land-use planning. This respondent is also of the opinion that relations have improved a lot over the last couple of years and describes how public transport has changed from being perceived as a nuisance to being seen as ‘the good guys’. The collaboration arrangements have been formed by the involved parties themselves, often on initiative of the regional PTA or a municipality, and there has not been any external organisation or actor moderating or managing the collaboration. A key condition for success has been the ability to create a sense of mutual responsibility and trust in the collaboration arrangements.

The regions in this study are all fairly small or medium sized with the number of municipalities ranging from 8 to 15. This was highlighted as an advantage by many of the respondents because it is easier to have an overview of the situation and to build personal ties and to increase trust between the regional and municipal levels. In general, trust was brought up as a very important asset and something that was made possible through long-standing collaboration between individuals from different organisations in the networks and the temporary planning organisations described above. When one of the interviewees from the city of Umeå in Västerbotten was asked how to define trust, he responded:

“For me it is when I go into a room and meet my partners; they should feel that they can trust me as a partner, and that we have a good and relaxed relationship where no one is in any way suspicious about what one says or why one says things.” (Interview Västerbotten)

To conclude, we did, in our material, not see any clear significance of the organisational set-up for how collaboration was conducted. In Sweden, almost all regional and urban public transport is procured in competition and is operated by private operators. This is also the case in five of the regions in our study. The only exception is Västmanland, where bus traffic is operated by a public company jointly owned by two regional PTAs, while train traffic is operated by two public companies, one regionally owned and one state owned. While collaboration was important in Västmanland and included the transport operator, the same was observed for other regions in the study.

## 5. Discussion

Even though the conditions are different for public transport in the regions, there were similar dissatisfactions and concerns (e.g. about service quality and reliability, patronage, and customer satisfaction) among some organisations who thought these needed to be dealt with. These organisations thus have become entrepreneurs endeavouring to initiate change in the existing public transport system. Previous research shows that it can be hard to implement changes in well-established public transport systems; however, the organisations studied here succeeded both in initiating change and implementing the sought after measures.

Regarding the measures that were implemented, they largely followed the principles for best practice that were discussed in section 2.1. Swedish public transport is sometimes seen as a case of successful public



transport (e.g. [Pojani and Stead, 2014](#)), but the ‘successful’ Swedish regions analysed in this paper have not implemented any innovative measures to increase public transport patronage that differ from the principles for best practice already discussed. Several of the interviewees also claimed that they are not doing ‘rocket science’ but have implemented state-of-the-art knowledge on how to increase the efficiency and attractiveness of public transport. This has involved more resources to public transport and increased the provision of both rail and bus transport in combination with a major reorganisation of the bus routes in and between cities covering fewer routes, straighter and faster routes, increased numbers of departures, and more coherent schedules. Often, the ticketing systems and passenger information systems have also been reformed.

What can be learned from the cases analysed in this paper? Judging by previous research, it is the implementation of measures that is most difficult. Although some of the explanatory factors the interviewees mentioned, e.g. political support, are intuitively important, it is the regions’ implementation of known public transport patronage drivers that have made them successful in comparison with other regions. It is not possible to understand the processes of change towards high-quality public transport system in these regions without relating the implemented measures to the governance context of which these measures were a part. The presence of political support is illustrated by the way the implementation of measures was part of a process of negotiation and prioritisation between different interests that over time generated support among relevant organisations, even for potentially controversial changes in the design of routes. This has led, for example, to a high prioritisation of patronage goals while coverage goals have been less emphasised. The implementation of measures to achieve patronage goals has meant that the PTAs have stopped adhering to the concerns of ‘special interests’, as one interviewee phrased it. The reforms incorporating fewer routes and the removal of routes with few passengers clearly required strong political backing so that ‘special interests’ (i.e., businesses and inhabitants on low-prioritised routes) did not try to obstruct the creation of an ‘efficient’ system.

The results support key findings on collaborative conditions from previous research, including the importance of joint objectives (although not necessarily identical) and trust between key individuals ([Pettersson and Hrelja, 2020](#); [Paulsson, 2018](#)). Measures would not have been possible to implement without well-functioning collaboration between the involved organisations. The interviews showed that developing collaborative networks is a resource-intensive activity, and the long-standing nature of collaborative forums in some regions provides interesting examples of how collaborative capacity needs time to develop.

In addition, the changes in public transport systems have occurred in parallel with a shift in the ‘culture’ within public transport – from ‘production oriented’ to ‘market oriented’. The measures that have been implemented are in line with this change in culture (as exemplified by the prioritisation of patronage goals over coverage goals). Communication with citizens and passengers to avoid opposition to change is another illustration of this shift in culture and is an important element for the success of the change process.

An explanatory factor that has not been paid much attention to in previous research is the importance of what was described above as a shift in the ‘culture’ within public transport and the associated change in the perception of what constitutes a ‘well-functioning’ public transport system, namely a more market-oriented view of the conditions and management of public transport. In practice, this change resulted in a shared perception of what constitutes a ‘well-functioning’ public transport system that persuades organisations to collaborate and to take actions on the basis of their shared meanings. This was important for building political support, for deciding where to provide public transport services in the public transport system, and deciding about which measures to be chosen to implement. Analytically, factors as shared perceptions, or discourses, influencing governance practices have been

referred to in previous public transport research as informal institutions (e.g. [Rye et al., 2018](#)).

Only one region differed, Jönköping, where another type of approach was chosen. This approach focussed far less on the main city and on reforming the public transport system. Instead, the guiding principle has been to invest equally in all parts of the public transport system (cities, smaller towns, countryside) and to keep coverage and patronage as equally important goals. Jönköping has managed to increase public transport volumes mainly through increased investments and measures such as concessions for younger people and for longer trips. A main precondition for this approach appears to be strong political support, not least in the form of political will to increase public transport subsidies in order to reach the political goals.

Our results show that an increase in patronage can be achieved by different approaches, either the Jönköping model or the more frequently used ‘market-oriented’ model found in the other regions. The comparison between the models shows that there are different ways to address the potential conflict between the goals of increased patronage and geographical equity, i.e. meeting the mobility needs of passenger groups not living near to high-demand routes. Though this conflict has not been a main focus of this paper, we argue that it points to the need for further research in order to explore questions such as: What are the risks and equity outcomes of pursuing an approach that focuses on providing increased services in high-demand routes but reduced services for less-travelled routes and in small towns? How can planning principles be designed that combine equally strong goals of increased patronage and geographical equity, and what challenges do they entail?

## 6. Conclusions

This paper had two aims. The first was to describe the planning principles and measures that have been implemented in six regions in Sweden with the highest increase in passenger volumes in public transport between 2009 and 2015. The second was to identify factors influencing the implementation by analysing how the implementation of measures have been organised and made possible. Regarding measures, the results show that five of the six studied regions employed a similar approach by concentrating public transport in corridors, e.g. by investing in and simplifying routes, offering fast and frequent services on high-demand routes between large cities, and having fewer and straighter routes, often on highways and avoiding smaller cities. These measures are in line with the principles for best practice discussed in previous research.

Jönköping chose another and more coverage-oriented approach by increasing provision also on less-travelled routes and in all parts of the region. The planning approach in Jönköping clearly deviates from best ‘practise principles’ described in previous research and offers an analytically interesting alternative from a strategic public transport planning level, a level that involves general aims and decision regarding the means used to achieve these aims ([van de Velde, 1999](#)).

The results also show that there is considerable coherence regarding the governance conditions that enable change. Three main governance conditions enabling change in the public transport systems identified by the interviewees were political support, well-functioning collaboration between organisations, and public support (achieved through citizen dialogue and more proactive communication with the public before changes were implemented). A transition from a ‘production-focused approach’ to ‘market-oriented’ planning is an important and underlying institutional factor explaining why political support and functioning collaborations could be achieved in most of the regions. The concentration of public transport provision in certain corridors as a key measure to increase patronage highlights the political dimensions of developing public transport systems. This approach clearly has far-reaching spatial consequences that will produce winners and losers, making it potentially controversial and thus necessitating strong political support.



What, then, is the best practice when planning and implementing high-quality public transport? This question is only meaningful in relation to the public transport goals on which the statement is based. The regions studied in this article offer two models of best practice. Most regions have prioritised patronage outcomes over coverage outcomes and have designed public transport systems according to the principles described above. This dominant approach is in line with what can be described as best practice according to previous research. However, there are other ways of designing a 'high-quality' public transport system as shown by the Jönköping region, which has prioritised coverage outcomes. Seen from within the dominant strategy and based on how best practice is described by previous research, the Jönköping region appears to be an exception that is not 'effective'. It works, but it is 'not the way to run a public transport system'. Jönköping appears as an odd region but does so because of the dominance of notions of a successful system that are associated with a market-oriented planning approach.

However, with the new salient issues of equity and justice in the shift to sustainable transport, models that focus equally on patronage and coverage might be of increasing interest (Gössling, 2016; Cahill, 2010).

### Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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### Regional Transport Supply Programmes

- Jönköping (2012) Regionalt trafikförsörjningsplan i Jönköpings län.  
 Kalmar (2012) Trafikförsörjningsprogram för Kalmar län 2013-2021.  
 Kronoberg (2015) Trafikförsörjningsprogram Region Kronoberg 2016-2025  
 Västerbotten (2016) Regionalt trafikförsörjningsprogram för Västerbottens län 2016-2019.  
 Västmanland (2015) Trafikförsörjningsprogram för kollektivtrafik Västmanlands län.  
 Uppsala (2016) Regionalt trafikförsörjningsprogram 2016 för Uppsala län.

### Interviews

- Interview A Jönköping, November 12, 2018  
 Interview B Jönköping, November 12, 2018  
 Interview Kalmar, November 15, 2018 (2 respondents)  
 Interview Kronoberg, November 6, 2018  
 Interview Västerbotten, November 14, 2018  
 Interview A Västmanland, November 9, 2018  
 Interview B Västmanland, November 12, 2018  
 Interview A Uppsala, October 25, 2018  
 Interview B Uppsala, November 5, 2018

### Appendix A. Summary of public transport in the six regions

	Goals	Public transport development	Measures	Other reasons for increase
Jönköping	60% increase in public transport by 2025 (compared to 2011) to 25 million trips. Doubling of train trips; 25% increase in regional bus trips.	From 16.2 million passenger trips in 2009 to 20.7 million in 2015 (28% increase). Increase in all public transport modes (train, city bus, and regional bus) and in the whole region.	Increased provision of public transport. Concession for young people. Changes to price zoning to make longer trips cheaper.	Influx of immigrants to small towns that has increased demand.
Kalmar	No goals for the number of trips. Share of people who use public transport should increase to 40% in 2020 (compared to 34% in 2011).	From 6.7 million trips in 2009 to 9.4 million in 2015 (40% increase). Increase mainly in regional bus traffic and bus traffic in the city of Kalmar.	More resources to public transport and increases in supply. Regional bus: Straighter and faster routes between main towns (fewer stops at smaller towns); routes on highways instead of smaller roads; more frequent departures. Kalmar: Straighter routes in Kalmar and suburbs; more frequent departures. Special concessions for youths and older people.	None
Kronoberg	3% increase in public transport trips per year; to 10.6 million in 2020 and 12.4 million in 2025.	From 5.9 million trips in 2009 to 9.2 million in 2015 (54% increase). Increase mainly in regional train traffic and bus traffic in the city of Växjö.	Increased provision of public transport. Regional train: New train routes and new stations. Växjö: New routes for city buses in Växjö; fewer stops; straighter routes; more departures. Improved marketing.	None
Uppsala	No specific goals in the transport supply programme.	From 26.7 million trips in 2009 to 38.2 million in 2015 (43% increase). Increase mainly in the regional	Regional train: Dedicated measures to develop regional train traffic between Uppsala and Stockholm and to other destinations. Primarily increased provision of train traffic.	Population increase has increased the demand for public transport between Uppsala and Stockholm and between Uppsala and other towns.

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	Goals	Public transport development	Measures	Other reasons for increase
		train traffic and secondarily in bus traffic in the city of Uppsala.	Uppsala: Increase in bus traffic in Uppsala. Reorganisation of bus lines in Uppsala: fewer stops; straighter routes; more departures. Measures to increase accessibility for bus traffic.	
Västerbotten	16 million trips in 2020 (compared to 11 million in 2011), a 45% increase.	From 9.2 million trips in 2009 to 11.9 million in 2015 (a 30% increase). Increase mainly in bus traffic in the city of Umeå.	Bus traffic in Umeå: Fewer routes, fewer bus stops, longer distance to bus stops, increased departures.	None
Västmanland	No specific goals in the transport supply programme.	From 7 million trips in 2009 to 14.1 million in 2015 (a 63% increase). Increase mainly in the regional bus traffic between main towns and in bus traffic in the city of Västerås	Regional bus traffic: Increased departures, straighter routes, removal of bus stops and increased standard of bus stops. Västerås: main reorganisation of the whole bus system in 2013, which has led to a doubling of the number of trips. Increased departures, straighter routes, removal of bus stops, and increased standard of bus stops. Reformed ticket system making it far simpler to buy tickets. Improved information and marketing.	None

Sources: Regional Transport Supply Programmes (Jönköping, 2012; Kalmar, 2012; Kronoberg, 2015; Västerbotten, 2016; Västmanland, 2015; Uppsala, 2016), interviews.

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