Integrating knowledge forms in public transport planning and policies: the case of the Lisbon metropolitan area

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ABSTRACT

Public policy debates about transport planning are often focused on more technical analyses to the detriment of other forms of knowledge. Combining document analysis and interviews with relevant actors, we identify a clear imbalance in the design of transport planning in Lisbon's Metropolitan Area. There is a clear prevalence of political knowledge, with conflict among key actors as the major source of knowledge and the neglect of other forms, particularly those associated with deliberative processes. The findings also suggest that these imbalances decrease the legitimacy and optimality of potential solutions to complex problems in Lisbon's transport policy.

1. Introduction

Mass transit has been one of the key pillars supporting fast-paced urbanization and the rise of the global metropolis. Transport planning and policy-making has become a central issue in city-regions and, with an eye on decarbonization, mass transit is even more topical in contemporary Europe. However, complex choices in transport planning and provision should be made considering information from different sources to account for effects on environmental, economic, social, political, and technical sustainability.

While the discussion on public transport planning has often been technical, other sources of knowledge have been conspicuously absent from this debate. For example, a search using the keywords 'public transport' on the Web of Science core collection in December 2020 indicates that less than 1% of the literature is published in public administration or political science journals, evidencing the minor role played by the political dimension in transport planning. In contrast, the majority of the literature is published in Transport, Economics, Environmental, and Engineering journals, thus reinforcing the idea of the predominance of the technical approach.

In order to bridge this gap, we employ the useful heuristic developed by Vigar (2017) to assess the presence or absence of four knowledge sources informing transport planning in Lisbon's metropolitan area: local, technical, practice-centered, and political. What are the knowledge sources present in the formulation and implementation of

Lisbon's transport planning and policies? Is priority given to one source of knowledge over the others? If so, why?

Lisbon is an interesting case study because of its comparability with other European contexts. Lisbon municipality has slightly over half a million residents and is part of a large metropolitan area with close to three million inhabitants divided in 18 municipalities. Over the past decade, the city has become more committed to sustainable policies, as evidenced by the signing of the New Covenant of Mayors for Climate Change and Energy in 2016, the development of a City Council Strategy for Managing Adaptation to Climate Change in 2017, and the successful bid to Green Capital of Europe in 2020 (Pedro, Silva, and Pinheiro 2019). The Lisbon Metropolitan Area (LMA) also contrasts significantly with the latest developments in transport planning and policies in other metropolitan areas around the world (Behrsin and Benner 2017; Legacy, Curtis, and Scheurer 2017; McArthur 2019). First, it remains heavily politicized, with frequent strikes at the organizational level and squabbles between political parties at the municipal level. Second, and perhaps as a consequence of this, its approach to transport planning cannot be categorized as either technocratic or post-political as we see elsewhere (McArthur 2019). Thus, it represents a good case study to compare and contrast with others recently investigated in the transport policy literature since, as we will show, it still uses traditional channels of public consultation led by interest groups to shape transport planning and policies (Legacy 2016).

In order to investigate the sources of knowledge influencing the design and implementation of transport planning and policies in the LMA, we combine document analysis, interviews with key actors and online news media articles to produce an explanation grounded on a variety of data sources. We have interviewed and collected information from representatives of the relevant sectors in defining public transport planning and policies, such as managers of Human Resources Departments of public transport companies, a Works Council member, and a senior official of the LMA. The contrast of their different lenses allowed a more complete perspective on the making of public transport in Lisbon and the role of different sources of knowledge.

This article is divided into five sections. After this introduction, the second section presents the approach that will serve as the theoretical lenses to analyze the case study. Next, we describe the evolution of Lisbon's transport policy over the past four decades. The aim of this section is to provide useful information to set up the case analysis conducted in section four. Section five discusses the implications for transport policy and concludes.

2. Four sources of knowledge in transport planning

Transport policy in a changing environment has placed increasing demands upon the relations and communications between the actors involved. Decisions are less likely to be based solely on rational problem solving considerations, but instead require knowledge originating from multiple sources, including local knowledge, practice-centered knowledge, and political knowledge (Vigar 2017). The theoretical relevance of these sources of knowledge is discussed in this section and later employed to frame the case of Lisbon's metropolitan transport planning.

2.1 *Technical knowledge*

The use of sophisticated mathematical, economic, and urban-regional models introduced rationally informed considerations in the diffusion and adoption processes (Schiefelbusch 2010; de Dios Ortúzar and Willumsen 2011). Before the widespread use of ICTs, expert knowledge was largely produced by 'networked epistemic communities of local policymakers, globe-trotting consultants and "informational structures" such as professional organizations and international institutions such as UN-Habitat and the OECD' (McCann 2011, cited by McArthur 2019, 47).

Ready-made solutions generated by this kind of technocratic knowledge have often ignored local users and activists, community-based organizations, and complex contexts, thus failing to address urban inequality, income and racial segregation, and exclusionary land practices embedded in the design of urban transport policies (Trounstine 2018; Vecchio, Porreca, and Jácome Rivera 2020). Critics of transport policy based on technical knowledge target the obsolescence of models (Bertolini 2007) and the technocratic nature of the policy process (McArthur 2019), advocating instead the incorporation of participatory opportunities and deliberative processes in the formulation, implementation, and evaluation of transport planning and policies (Vigar 2017). In their discussion of the case of New South Wales, Australia, Mulley and Reedy (2015) underline the presence of several barriers preventing the use of evidence-based knowledge to generate transport policy for relevant stakeholders.

2.2 *Local knowledge*

Before devising technical solutions to complex transport problems, policy-makers should understand the context where these solutions will be applied (Saujot et al. 2016). Local actors are privileged sources of information of transport planning needs in metropolitan areas. They are able to identify travel and commuting patterns, recognize traffic bottlenecks, and tap into unrecognized or unsatisfied transport needs across communities.

Users must have a voice in transport planning and policy. Top-down policy-making processes neglect the role of local actors, generating potential gaps in transport planning that disproportionately affect societal groups with varying access to these processes (Saujot et al. 2016; Legacy, Curtis, and Scheurer 2017). In contrast, bottom-up approaches take advantage of local knowledge by including inputs from local actors at all stages of the policy-making process. Participatory tools based on ICTs can be employed to elicit perceptions and opinions of residents and commuters about transport planning (Hansen 2006). Participation of citizens can also be used to envision the future(s) (Soria-Lara et al. 2021).

Employee participation can have an important role in designing better policies, even though the content and extent of these initiatives is diverse (Arrigo and Casale 2010) and still underexplored in the transport literature. Seminal work by Angle and Perry (1980) found that transit employees identify company policies and practices, recognition, human relations, and technical supervision as key factors influencing the degree of job satisfaction. These findings suggest that the willingness to participate should not be taken for granted in organizations facing internal conflict.

More substantive impacts on transport policies can be accomplished through the use of deliberation processes and collaborative dialogue aimed at the inclusion of all relevant actors in a given policy area (Innes and Booher 2003; Healey et al. 2003). The inclusiveness of these processes makes it more likely that decisions are the product of a dialogue-based consensus, understood by and legitimate in the eyes of all groups involved (Innes and Booher 2003; Vigar 2006; Legacy, Curtis, and Scheurer 2017; Albrechts, Barbanente, and Monno 2019). More importantly, it minimizes the 'silent losers' problem affecting those groups excluded from the policy-making process, either those who were not born yet or those who have been cast aside from society and lack voice in the policy process (Weimer and Vining 2011).

Several examples of the role of social inclusion in transport planning and policy-making are present in the literature. The large gap between the official justification of urban renewal measures and the real social outcomes in Dublin suggests the need to include its discontents (Lawton and Punch 2014). Also in Dublin, disadvantaged community movements have resisted and delayed plans (Attuyer 2015). Community advocates have played a crucial role in solving the tensions between market and social forces in Auckland, New Zealand (McArthur 2017, 2019). Sosa López and Montero (2018) discuss the successful role of expert-citizens in influencing urban transport policy agendas to promote small-scale interventions through the strategic use of media and public opinion tools and their capacity to employ a tempered language in the dialogue between state and civil society.

However, the mainstreaming of participatory approaches presents mixed results varying from window-dressing to political capture (Gómez *et al.* 2010), which ultimately can lead to an illegitimate exercise of power (Cooke and Kothari 2001). In transport planning, New Public Management rhetoric and practices that converted passengers into customers were counterproductive to promote active participation of citizen passengers in deliberative decision-making (Wellman 2015). Progressive consensus building on metropolitan strategic plans was eventually implemented in three Australian cities, but it was rendered ineffective as pork-barreling kicked in (Legacy, Curtis, and Scheurer 2017). These criticisms support the need to incorporate political knowledge into community-based initiatives.

2.3 *Political knowledge*

The conflicting arenas in service delivery, particularly transport, may be a symptom of a growing city-region in the making (Addie and Keil 2015) in which municipal, metropolitan, national, and international realms are at stake. Transport service delivery plays a key role in the political construction of the city-region as a space of governance, where contention and conflicts may be part of the adjustments to different layers and where different scales of interest and power collide. The recent lexicon of 'soft spaces' and 'fuzzy boundaries' introduced by the 'new spatial planning' in discussing the 'devolution' trend in the UK also reveals the region as a contested arena (Heley 2013).

Unsurprisingly, political reality tends to overwhelm evidence-based decision-making in transport policy (Flyvbjerg 1998; Willson 2001; Vigar 2017). Examples of the way politics plays out in transport planning are far too many to mention here, but recent empirical research supports this general disconnect between evidence-based knowledge

and political expediency. Vigar (2006) described the draft of the Regional Transport Strategy of North East England as a pragmatic compromise between pro-growth advocates of new infrastructure and sustainable development supporters concerned with managing the demand for transport. Electoral politics and private sector interests play a key role in infrastructure planning decisions in Australia (Legacy, Curtis, and Scheurer 2017). Behrsin and Benner (2017) show how environmental and transit subjectivities shape dispositions and politics around mass transit projects, leading to resistance by societal groups that would stand to gain the most from them. Winning votes was a major policy driver in Auckland's urbanism in the past (McArthur 2017).

2.4 *Practice-centered knowledge*

Rogers (1983) conceptualized diffusion as 'the process by which an innovation is communicated through certain channels over time among the members of a social system' (p.5). The identification and diffusion of best practices by experts and elected officials is often responsible for shaping transport policy. The way these examples travel across communities, regions, or countries is contingent upon the processes that trigger their adoption (Carr and Hesse 2020).

The policy diffusion literature argues that learning implies a rational decision by government policymakers to enact a specific policy with higher expected net benefits when compared to the current status quo (Marsh and Sharman 2009). According to the concept of Bayesian learning applied to policy diffusion, 'actors are assumed to choose policies after updating their beliefs about the policy effects by looking at the experience of others, which is then used to update prior beliefs and eventually orient action' (Braun and Gilardi 2006, 306; see also Meseguer 2005, 2006).

Mimicry processes are also associated with learning, suggesting that policy adoption by a jurisdiction occurs if the policy is regarded as 'advanced, progressive and morally praiseworthy' (Marsh and Sharman 2009, 272). A policy alternative with these features is likely to become attractive because adoption provides additional legitimacy to governments, whereas staying on the 'sidelines' can be costly and unpopular (Braun and Gilardi 2006).

Diffusion in transport policy is common and has been the subject of prior research (Stead, de Jong, and Reinholde 2008; Ison, Marsden, and May 2011; Timms 2011). Temenos and McCann (2012) underscore the role of learning in municipal policy-making as a strategy to overcome contention and legitimate specific mobility policy solutions. Stein et al. (2017) analyze the adoption of Business Improvement Districts in Germany as unfinished policy transfers, highlighting several flaws, resistances, and ambiguities that plagued the process. In their analysis of the adoption of fare-free public transport in Tallinn, Kębłowski et al. (2019) note the competition-induced diffusion effect in neighboring municipalities leading to the adoption of the same policies. Multi-level international governance such as in EU also presents opportunities for local capacity building via international networks in urban governance (Pierre 2019). Vecchio, Porreca, and Jácome Rivera (2020) contrast the case of Quito (Ecuador) with other cities in Latin America often seen as notable exemplars of mass transit systems and urban mobility planning, such as Bogotá (Colombia), Santiago (Chile), and Curitiba (Brazil). These examples illustrate the relevance of the diffusion

of practice-centered knowledge in the formation and implementation of transport planning and policies.

2.5 *Integration of the four sources of knowledge*

All types of knowledge have their strengths, but also their weaknesses. Practice-centered knowledge provides an opportunity for learning by doing and learning with others. Technical knowledge can support better-informed decisions and it is less vulnerable to policy hypes, while local knowledge can accommodate contextual differences and ownership of policies. Political knowledge reminds us that social processes are inherently political, from redistribution to patronage issues. Thus, there is interest in combining some or all of these sources of knowledge.

The theoretical literature argues that there is no 'one best way' to accomplish this integration of different knowledges (Raymond et al. 2010). Instead, authors have argued for the use of transparency and effective communication in decision-making processes to justify the inclusion, exclusion, and synthesis of different forms of knowledge (Vigar 2017; Willson 2001). Vigar (2017) advocates for the formation of 'debate arenas' to build trust, generate social capital, promote learning, and disseminate knowledge in transport planning processes. Albrechts, Barbanente, and Monno (2019) propose an inclusive strategic spatial planning based on co-production as a form of empowerment to achieve legitimacy and advance a transformative agenda.

The influence of the four knowledge sources identified above on transport planning is unequivocal. Although the evidence clearly shows cases where one knowledge source prevails over others, there are also recent examples of transport planning and policy based on a combination of two or more forms of knowledge. Marshall (2016) discusses the use of deliberative approaches in large infrastructure decisions in France, both at the project level and when considering the environmental consequences of these projects. These initiatives promote open and pluralist decision-making processes, thereby securing the inclusion of other knowledge sources.

Using qualitative data from interviews in Mexico City and Guadalajara, Sosa López and Montero (2018) report on the contribution of 'expert-citizens' to the contested field of sustainable mobility policy. The authors highlight the relational ways these 'new voices' interact with state actors and civil society groups to influence urban transport politics. Expert-citizens, they argue, are able to engage with a diverse set of actors, link multiple scales, and bridge technical language, knowledge about best practices, and citizens' common sense concerns in the debate arena of urban transport politics.

Others have fewer reasons to be optimistic about knowledge integration. Legacy (2018) provides evidence of citizen-led contestation to transport projects in a context still largely dominated by powerful political actors and little concern for inclusionary decision-making practices.

What are the knowledge sources present in the formulation and implementation of Lisbon's transport planning and policies? Is priority given to one knowledge source over the others or are they integrated in the way best described by Vigar (2017)? Before investigating these questions, however, the following section provides a background on transport planning, policies, and practices in Lisbon's metropolitan area over the past decades.

3. Transport planning and policies in Lisbon's metropolitan area

Lisbon's Metropolitan Area is a relevant case study as Portugal is a peripheral state within the European global regionalism, but the LMA has been able to attract and retain population. Since 1960, the LMA almost doubled its population while Lisbon municipality reduced from more than half to less than one-fifth its weight within the LMA.[1] Lisbon municipality is the largest in the metropolitan area, and it has high political importance. Lisbon has become a kingmaker, with one former mayor reaching the presidency (1996–2006) and two others becoming prime ministers (2004–2005; 2015-present). A former candidate defeated in the mayoral elections of 1989 is currently the Portuguese President (2016-present). Transport and mobility play a core role in this regional living and are a contested field in both the city and the metropolitan area.

The late 1980s and the 1990s were times of economic growth and infrastructure expansion as part of a convergence effort with the European Economic Community, of which Portugal became a member in 1986. As the economy grew and European funds became widely available to Portugal, investment in public infrastructure was significant and greatly benefited public transport. For example, from 1988 to 2004 the number of stations in Lisbon's Underground increased by 120%. Nonetheless, census data suggest that by 2011 the percentage of commuters using public transport in Lisbon's Metropolitan Area had halved, while the use of cars more than doubled.

Financial sustainability and service maintenance of public transport would soon become a problem, and times of expansion gave way to cutback management and efficiency-driven measures (Héritier 2002). After 2011, the global crisis and the austerity policies implemented in Portugal enhanced the focus on efficiency, cost-reduction, and financial sustainability, particularly through the reduction in service levels and increases in fares. This led to a 25% decrease in the number of passengers (Melo, Sobreira, and Goulart 2019), taking a heavy toll on the efficacy of public transport. The process would culminate in the merger of three Lisbon transport operators (bus company Carris, Metro Lisbon, and the boat company Transtejo, all publicly owned), followed by tendering to the private sector during the tenure of the center-right government led by Prime Minister Pedro Passos Coelho. This initiative was overturned after the 2015 election of center-left-led government headed by Prime Minister António Costa. The newly elected government vowed to 'end austerity' in Portugal (and Europe) and changed the prescribed policy.

Transport operators in Lisbon are often weak substitutes in service provision but strong competitors, for example, for subsidies. The transport landscape in the LMA is vast and diverse regarding coverage (urban and suburban), mode (train, subway, tram, buses, and boats), and ownership (public and private) (see Table 1 for the full transport network). In total, the network involves over 20 operators and faces difficult coordination issues in terms of schedules, governmental subsidies, and prices. Venâncio (2013, 47) quotes data from a working document of the Lisbon Metropolitan Transport Authority concluding that the number of different fares reaches the astonishing figure of 3009.

The LMA is run by an executive council composed of the mayors of the municipalities comprising the LMA. The council is not directly elected, manages a small budget (the total expenditure was 1,702,209 euros in 2017), and has limited ability to

Table 1. Lisbon metropolitan area transport network.

	Urban bus	Subway	Suburban boat	Suburbantrain	Suburban bus
Ownership	*Carris*	*Metro*	*Transtejo; Soflusa*	*CP urban trains; Fertagus*	*Several*
Before 2014	State	State	State	State (CP); Private tendering (Fertagus)	Private tendering
2015–2016	State (Transportes de Lisboa)			State (CP); Private tendering (Fertagus)	Private tendering
Adjudicated (Planned)	*Private tendering (Avanza)*		*Private tendering*	*Private tendering (CP Cascais)*	*Private tendering*
2016–2017	State	State	State	State	Private tendering
2017-	Lisbon city	State	State	State	Private tendering

Note: The table includes transports with service to or from Lisbon; since 2019, there is a heavily subsidized travel card covering all operators.
Source: Authors' systematization based on news and legislation.

raise its own revenues (Mourato et al. 2017). In practice, the LMA lacks the governance capacity required to involve, coordinate, manage, and monitor the actors in the transport network.

The Metropolitan Transport Authority was created in 2003 to handle public transport planning in the LMA, but this organization also lacked the political capital to effectively implement mobility planning and is currently inactive (Mourato et al. 2017). In 2015, its competences were redistributed by different national, regional, and local institutions, with the LMA becoming the protagonist with most media exposure.

4. The four knowledges in metro Lisbon's transport planning

What are the sources of knowledge present in the formulation and implementation of Lisbon's transport planning and policies? Because these decisions are taken at different levels, we analyze the presence and impact of different knowledge sources in the transport sector at the intra-organizational, inter-organizational, local, and metropolitan levels. Intra-organizational decisions reflect processes taking place inside transport companies, whereas the inter-organizational level involves interactions between players in the overall transport network. We opted for a joint discussion of both levels because often they are interdependent and can be regarded as the managerial side. On the policy side, the government focus refers to decisions and processes that take place at the municipal and metropolitan levels. Contested actions by local organized interests (political knowledge) have predominated over all other sources of knowledge as the evidence below will show.

4.1 *Data*

As mentioned above, the data collected for the empirical analysis come from a variety of sources, including official documents and interviews with actors from the transport sector. Analyzed documents include reports available on official governmental websites, technical analyses, and assorted memorandums retrieved from companies' websites, and articles from online news media sources. Given that we surveyed documents available to the public and/or publicized in the news, the analysis may underestimate the role of technical knowledge as preliminary or confidential reports may remain underrepresented.

The interviews were conducted with managers at the Human Resources Departments of Metro (Zoom interview on 8 July 2020, with follow-up emails) and Carris (Email 13 July 2020), as well as with a member of the Metro Works Council (Phone interview on July 28). Carris Works Council was contacted but failed to reply to the query. We also collected information from a senior official of the LMA (May 2020).

The information contained in these documents and interviews was organized chronologically and according to the level of analysis, and in both cases associated with the relevant sources of knowledge. The results are reported in Tables 2 and 3, respectively, and discussed in the sections below. We start by addressing intra-organizational (micro – within the organization) and inter-organizational (meso – between organizations) levels in section 4.2 because this has traditionally been at the core of the problematic. Later on, in section 4.3, we discuss Metropolitan area and local government (macro – governmental level) levels.

4.2 Intra-organizational and inter-organizational levels

Technical knowledge

Transport companies hired better-qualified personnel, upper-level managers, and consultants. Inspired by the late introduction of New Public Management practices, leading companies started providing detailed reports dating as far back as 2004 (the Lisbon subway) and 2008 (the bus company Carris), eventually making them available online.[2] The data were also used for management purposes and for adjusting supply in an attempt to pursue evidence-based decision-making. Nevertheless, political confrontation may have curbed the gains obtained from advances in the use of technical knowledge.

Table 2. Transport policy events, source of knowledge, and governance level.

Type of knowledge	Intra-organizational and inter-organizational levels	Metropolitan area and local government levels
Technical	• Hired qualified personnel • Hired qualified upper-level management and consultants • Detailed reporting • Information partially available online • Coordinate route network	• More qualified elected and bureaucrat officials • Merger and ownership of boat, bus and subway
Local	• Physical and online customer feedback: User participation • Statistics on mobility patterns • Low worker participation • Organizational bottlenecks and far of co-production models • Resistance to merger	• Increased institutional participation at LMA • Reduced user or citizen participation at LMA • Increased user or citizen participation at municipal level
Political	• Clash workers vs. management: (i) Workers upper-hand XX century (ii) Decline in XXI century; (iii) Rise in conflict during crisis • Funding to operators	• Lisbon Metropolitan Area hegemony • Subway extension • Decrease in price fares • Neighborhood authorities negotiate with transport companies
Practice-centered	• Integration of international networks • Single travel card	• Engagement in international networks

Table 3. Chronology of the recent Lisbon subway expansion.

Timeline	Subway expansion	# Stations	Knowledge
	Earlier studies		Technical
August 2009	Expansion priority (Consultant)	2	Technical
September 2009	Expansion Plan (Ministry)		Political
May and August 2016	Viability Expansion Plan (Metro)		Technical
March 2017	Viability Expansion Plan – Executive summary (Metro)		Technical
May 2017	Mayor Medina	2(+4 +…)	Political
May 2017	CDS-PP Party	20 (new)	Political
May 2017	Debate in Lisbon (Assembleia Municipal Lisboa)		Political and Technical/ Practice
July 2017	Need for a larger debate deliberation (Assembleia ML, 002/BE/2017)		Political and Technical/ Practice
July 2017	Need for extra funding for maintenance and expansion deliberation (Assembleia ML, 001/PS/2017)	2 + 4 (new)	Political
October 2017	Municipal elections		Political
December 2017	Traffic estimates (Consultant)		Technical
July and August 2018	Public consultation		Local
	Formal consultation: Technical advices from CML; ANACOM; Lisboa Gás; REN(Infraestruturas de Portugal, SA, ANA/ANAC, DGRDN, EPAL did not reply in time)		Technical (/local)
November 2018	Environmental Impact Statement (APA)	2 + 4 (new)	Technical
2019	Traffic estimates (Consultant)		Technical
2020	Public procurement	2 (new)	Technical
April 2021	Construction starts	2 (new)	

Source: Authors based in document consultation and internet search.

Political knowledge

Political knowledge remains a dominant force in public transport planning, particularly noticeable at the intra-organizational level. Given the impact of transport companies on the daily lives of residents, political expediency often takes precedence over more technical or evidence-based knowledge, and nowhere is this more visible than in the attention paid by politicians to worker–management relations. While not directly involved in company management, elected officials dedicate time and efforts to facilitate negotiations and secure improvements in worker–management relations.

In the past, workers in public companies (including transport operators) have received wages above their private sector counterparts (Portugal and Centeno 2001). The benevolent role of the state as an employer, better working conditions with less employer pressure, or simply a larger bargaining power due to a small number of employees having a large impact on the lives of many are standard explanations frequently mentioned in the literature (Portugal and Centeno 2001; Addison, Portugal, and Vilares 2017).

This preferential treatment of workers in the transport sector has been changing since the turn of the century, largely due to a decrease in bargaining power of workers. Trade union density fell from 50% in 1980 to a recent range of 10% to 20% depending on the source, while labor regulation 'friendliness to workers' also decreased (Addison, Portugal, and Vilares 2017). The years under austerity accentuated this trend and were

Figure 1. Strikes in the transport sector, 1986–2019.

Note: number and percentage of total strikes.

Source: Authors' calculations based on www.pordata.pt.

particularly polarizing in the transport sector. The tough adjustment affected the sector in 2010/2011, with labor cost reductions of 18% in the subway company obtained through employee dismissals and decreases in pay over time, a significant wage complement before the crisis. Unsurprisingly, strikes in the transport sector during austerity reached half of the total strikes in the country, up from 12% in the early 1990s (Figure 1). The conflict at the intra-organizational level was in its heyday, with these clashes affecting service levels and the perception of quality by users of public transport. In spite of decreased conflict in the last few years, the new millennium has been much more conflictual the transport sector than in the past.

Local knowledge

Users or other citizens could provide useful insights to improve service quality and efficacy. Both subway (Metro) and bus (Carris) operators have implemented a variety of physical and online customer feedback, as well as information tools for schedules, but these are distant from models of co-production, such as user engagement in route design and frequency.[3] Another issue concerns how to engage with citizens currently not using public transports. Statistics Portugal INE has collected information regularly regarding the general mobility patterns of the Portuguese, complemented with occasional volumes such as 'Mobilidade e funcionalidade do território nas Áreas Metropolitanas do Porto e de Lisboa: 2017'. This study emphasizes Metropolitan intra-mobility and paves the way for a more informed transport policy. However, it remains unclear how this knowledge was transferred to analyze and change mass transit supply in the Lisbon Metropolitan Area.

Worker participation in operational decisions has been less of a subject of attention and analysis.[4] Consultation is prescribed by the Portuguese legal framework, even if non-compliance is not sanctioned. Notwithstanding frequent conflicts, official

communication channels between transport sector management and workers exist, with regular formal meetings with work councils and occasional meetings with unions. Workers' representatives are heard, but it is not evident if this influences policies. Given the technical nature of some operational decisions, but also the traditional top-down approach, worker participation is relatively small and done mostly through consultation. The room for worker participation depends on the sensibility and discretionary of top management, with very different practices in the public and private sectors. This responsiveness may also depend on prior public sector or field experience of managers and whether they find it relevant to involve workers and their representatives.

In general, worker participation in the management of transport companies is considered low and very distant from the concept of co-production, which would allow these companies to reap the benefits of workers' perspectives towards improving service performance. In the Metro, the interaction is only enhanced in working groups for specific projects, mostly in corporate departments with a more horizontal structure. In the bus operator (Carris), focus groups have been promoted to discuss the company's public image and practical issues regarding the creation of a new uniform. Street-level personnel at Carris can also complement the quantitative data collected from users via the validation of travel cards. For example, in the past, bus drivers have been instructed to inform management when users fail to validate their travel card, an information that would otherwise be absent. Currently, it is alleged workers have a larger participation role, but their level of engagement in defining routes and stops or avoiding traffic bottlenecks is still unclear.

Increasing participation may require endowing worker representatives or specialized workers with more time for participatory approaches. Transport companies such as Metro remain more generous in endowed time for worker representatives than the average public sector organizations, but representatives still invest much of their personal time in the participatory process. Intermediate leaderships could also have a role in the process. Nevertheless, following highly polarized moments in transport operators and the adoption of more managerial processes, the cumulative grievances and eventual organizational cynicism suggest that the probability of increasing worker participation in operational tasks is still currently slim.

Practice-oriented knowledge

Carris and Metro integrated networks of other transport providers and consultants in an interchange hub between practice-based and technical knowledge.[5] However, access to data remains severely restricted, reflecting a narrow view on harvesting local societal knowledge and neglecting citizen-experts.

The collaboration of the different operators regarding planning and implementation has been difficult, even if improving over the years. The impetus for merging the subway and bus companies left an important contribution, as their transport network was improved to better cover the city with a change in routes to offer complementary, rather than substitute, routes. However, this attempted merger faced strong internal opposition, perhaps due to the old history of both institutions.[6]

More generally, the difficulty in collaboration still applies. A good example is the difficulty to offer a single travel card for the LMA, successfully negotiated only after the

recognition of similar European trends. Its implementation was bundled with an increased subsidy for a reduction in the price of travel cards, supported by increased funding via environmental taxes and decisive for the agreement between operators. Since then, some operators have voiced concerns that the compensatory allowance was insufficient.

The move towards a unified and cheaper monthly travel card promoted access to all mass transit modes in the LMA, by incentivizing demand for public transport. This meant that households could save dozens of euros on forgone fares, particularly benefiting citizens living away from the city center. Public transport improvement and increased demand also required increasing service levels, which meant hiring and training drivers, acquiring vehicles, and improving maintenance, particularly for the public-owned transports. In addition, most operators are still on the brink of breakdown following the years of keeping maintenance costs to a minimum and no fleet renewal. With the debate focused on the bus and subway companies, other operators have made the headlines for the worst reasons. Recurrent problems persist in the boat and railway connections to Lisbon due to poor planning and lack of funding in fleet renewal or workers' strikes, including services cancelled without notice during peak time.

The second column of Table 2 summarizes the sources of knowledge informing transport managerial decisions at the intra- and inter-organizational levels.

4.3 Metropolitan area and local government levels

Transport planning and policy take place at several levels, including the metropolitan area, the municipal government, and even the neighborhood, depending on the scale covered by the authority.

Technical knowledge

More qualified elect and bureaucrat officials have been a central development. In the city council, working with and hiring specialists has been determinant, which has culminated in the first Councilor on mobility, Miguel Gaspar, who has a past linked to a transport consultancy company. With the merger of several neighborhood governments in Lisbon, the larger scale allowed for a more professional (elected) leadership and more resources. Some of these enlarged neighborhood governments, also known as parishes (*freguesias*), have promoted circular bus routes to provide better mobility within each neighborhood.

The optimum size and ownership of transport companies has been a disputed issue. During the crisis, the Passos Coelho government had merged Lisbon's bus and subway companies and the boat company servicing Lisbon, but the center-left government led by António Costa overturned this decision. This government overturned the tendering process to the private sector and the merging decision and opted for a Solomonic measure. On the one hand, the bus company would be administered by the municipality of Lisbon and financed by parking and fare revenues, following some sort of late and partial devolution trend from the 1990s (Teles 2016). On the other hand, given its larger debt and lower alternative revenues, the subway remained under central government management. However, the heated debate about who should own transport

companies, particularly the two largest (the subway and buses of Lisbon), continues to be at the forefront of the concerns of both the central and the local government levels. The political dimension is also visible in strategic policy decisions concerning transport operators.

Political knowledge

Political knowledge predominance in public transport delivery relates to the dispute over the leadership of the LMA by different political parties. In the national elections, the Socialist Party ('center-left') and the Social Democrat Party ('center-right') compete for hegemony, but local elections in the municipalities of the LMA include additional protagonists. The LMA president is indirectly elected by the 18 mayors of all its municipalities, with the Socialists and the coalition led by the Communist Party clashing for its leadership. While the Socialists held the Lisbon mayorship for 32 years from 1990 (with a five-year interregnum), the Communists controlled the majority of municipalities in the LMA until 1993 and again from 2005 to 2013 (see Figure 2). The proportion of elected city councilors in the LMA by the Communists also increased from one-fourth to one-third of the total, reinforcing the importance of the LMA for this political party. In 2013, the Communists had the larger number of mayors (9), but all the other mayors of different parties summed up to a tie.

Notwithstanding the dispute, for pragmatic reasons both parties held coalitions. From 1989 to 1997, it led to the overthrow of the center-right coalition in Lisbon municipality, but that period also coincided with a decline of communist elected mayors in the LMA. Currently, the conflict at the LMA level contrasts with cooperation between both parties at the national level. Parties in this unusual left coalition (named 'Geringonça', or contraption) may now be weighing the losses of cooperation versus the
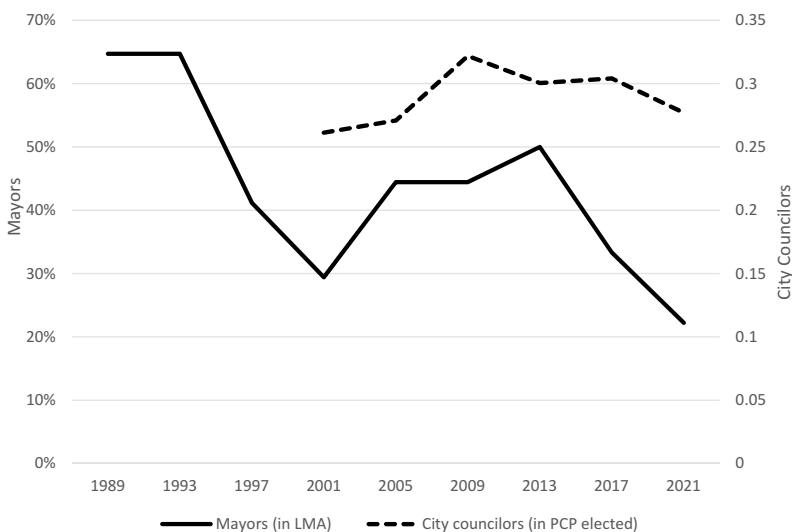

Figure 2. Mayors and city councilors elected by the Communist Party.

Source: Authors' calculations based on www.cne.pt and www.pordata.pt.

losses of competition (Goulart and Veiga 2016). The 2017 municipal loss by the communists did not result in a breach of the 2018 budget agreement, but it certainly increased the competition between the parties on the left and left-center, and might affect a durable solution.[7]

Given this polarized context, policy prescriptions on transport ownership vary depending on who controls public transport. António Costa, the current Prime Minister and former Mayor of Lisbon, handed the control of the bus company Carris to the Lisbon municipality as the company operates mostly in the city. In contrast, the main argument of the Communist Party against this policy solution is that mobility is an issue affecting all the LMA and should be run by the LMA governing bodies. The fact that the Socialist Party usually elects the Mayor of Lisbon and the Communist Party competes for the supremacy in the LMA may also be related to their different policy prescriptions. Conflict at the LMA level decreased after the 2017 municipal election, after the Communist Party lost the leadership to the Socialists. However, a potential future comeback of the Communists threatens a return to previous levels of political conflict in the metropolitan area.[8]

While the early years of post-austerity focused on the return to previous wage and compensation levels, transport and mobility are now at the forefront of the political debate. The decrease in price fares, the adoption of the universal travel card, improvement of service levels, and the controversy surrounding the change in ownership of public transport are all evidences of this. All these changes combined with the electoral shifts described above have cooled the tension in the Lisbon Metropolitan Area, but conflict is still present.

Local knowledge

Transport planning in the LMA does not rely on participatory initiatives or deliberative decision-making. Participation in the LMA remains limited to inputs from organized interests – employers' associations, unions, transport users associations – in dialogue behind closed doors in a more controlled setting. The LMA also conducts ad-hoc consultations to the population, but these sessions lack structure and minimal organization, so they cannot be described as participatory. All proposals reaching the metropolitan council are subject to prior discussion and consensus, so in practice, everything that is voted on gets approved.

In contrast, discussions at the municipal level tend to be more open, transparent, political, and, as a result, more accountable to the public. In the case of the city of Lisbon, minorities can participate in meetings, and the city has a long-standing tradition in the use of participatory tools such as participatory budgeting. Municipal officials carefully consider the voices of discontent from the audience in open meetings for damage control, even when some are clearly expressing individual opinions. The differences in preferences for participation modes can perhaps be explained by the sense of identity and attachment to place. The identity of a Lisbon resident is more established vis-à-vis the municipality and neighborhood voting, while the LMA identity is still under construction. As a result, a leader by proxy voted by the mayors of the LMA prefers to engage with other leaders by proxy representing organized interests.

Ultimately, political considerations often temper proposals based on other sources of knowledge. The city council has made efforts to better publicize its measures and

improve the connection with Lisbon citizens, particularly as some opposition parties had divergent slogans. For example, up until recently, the extension of bicycle lanes was coupled with increases in car parking slots, as an attempt to please all groups. While this reinforces the political sustainability of the measures, it also conveys mixed signals to citizens and is inconsistent with a clear strategy for green mobility.[9]

4.4 Knowledge sources in the expansion of the Lisbon metro

The study of the case of the expansion of the Lisbon metro is illustrative of the confrontation and intertwining of the different types of knowledge. Following up earlier studies that settled a larger plan for the expansion of the network, by August 2009 consultants identified two additional stations as priorities in the process. The expansion plan was confirmed by the ministry in September 2009, but the global economic crisis and, eventually, the Portuguese bailout would put the plan on hold for years.

Only in 2016, following an economic recovery and changes in the Portuguese government but also on the monetary and fiscal policies at the European Commission, the plans came back on track. Over the next year, the technical viability of the expansion plan was verified. By May 2017, the mayor and the political parties in the opposition competed in proposing the highest number of stations for the expansion, for the upcoming October elections.

With public transport in crisis following the austerity measures adopted during the financial crisis, one of the parties that governed under austerity (the CDS-PP, right) suggested an increase of 20 underground stations (40%) in the heat of the municipal campaign. Soon, there was a contagion effect and even the party currently in office, both in the city council and in the national government (PS, center-left), that had been holding down expectations regarding the subway, came to defend its expansion with European funds after 2020 through the prime minister himself.

In May and July of the same year, in the Lisbon municipal assembly, the (left and right) opposition urged for more technical studies and enlarged political debate. The party supporting the mayor also pressed for securing funding for maintenance and expansion of the network.

The October elections would confirm the interim mayor, and a technical study of traffic estimates followed in December. The official public consultation, where citizens can raise their concerns, was implemented during the summer months, which is at best far from the best practices for harvesting local knowledge. Major stakeholders were then asked to provide input, but many were unable to respond in time. The town council (CML), the national authority on communications (ANACOM), the gas service provider (Lisboa Gás), and the electric infrastructures (REN) delivered their views on time, but the railway infrastructures (Infraestruturas de Portugal, SA), the airport service provider (ANA/ANAC), the water service provider (EPAD) and the national defense resources directorate (DGRDN) did not. By November 2018, the Portuguese EPA emitted the Environmental Impact Statement.

In 2019, another technical study of traffic estimates was promoted and, in 2020, the public procurement process was started, with construction starting in April 2021 in its reduced form of two stations expansion.

5. Conclusion

This article investigated the sources of knowledge present in the formulation and implementation of Lisbon's Metropolitan Area transport planning and policies. The analysis identified a clear imbalance in the design of transport planning in Lisbon, with a prevalence of political knowledge and conflict among key actors combined with technical expertise as the major sources of knowledge and the neglect of other forms, particularly those associated with deliberative processes as well as benchmarking practices. There is some evidence that transport planning in the city of Lisbon is beginning to rely on different sources of knowledge, but it remains uncertain whether these sources and practices will extend to the metropolitan area. If anything, prior experiences serve us as a reminder that policy solutions and decisions should not be promoted top-down, in an authoritative manner, but through deliberative construction.

In the city-region of Lisbon, conflict has been endemic and political knowledge is dominant in transport planning. These arenas of conflict expanded during the financial crisis, but remain relevant today. Political parties in the LMA are still attempting to claim credit among the constituents for the merit of the newly enacted public transport policies. This is particularly visible as the neighboring municipalities of Lisbon were the ones that benefited from measures such as the increased subsidized fare associated with the universal travel card. As a case in point, the light rail transit in the south margin of river Tejo, where the Communists have some of their strongholds, increased the number of passengers by 25%.

The tendencies in transport planning and policy-making in the LMA cannot be described yet as evidences of a deliberative space, as political parties and organized interests (unions, works councils, transport users commission, employers' associations, among others), remain the key actors holding a major influence in public consultation processes. Like many other examples found in the literature, these practices lead to the exclusion of those without a voice at the decision-making table and further contribute to legitimize the hegemony of the strategies of those with access to power (Legacy 2016).

Despite the prevalence of politically driven conflict in the LMA, other sources of knowledge gradually start to be noticeable. The single travel card example illustrates the way mimicry and diffusion processes contribute to changes in crystallized paths (Temenos and McCann 2012) and the growing concerns with sustainable mobility patterns expressed by the Lisbon city council show the influence of international organizations and initiatives in transport planning and policy-making (Pedro, Silva, and Pinheiro 2019).

Less progress is detected in the use of local knowledge. Decision-makers remain reliant on traditional channels of public consultation of interest groups and one-way forms of communication with users, such as complaints and suggestion boxes. Worker participation is stagnant, and no systematic attempt has been made to enact deliberative processes that could potentially take advantage of the opinions of residents and commuters (Hansen 2006) as well as expert-citizens (Sosa López and Montero 2018).

As a result, transport planning in Lisbon's Metropolitan Area remains a top-down policy-making process, with few indications it will change any time soon given the traditional path-dependency of urban development as a function of local histories and

institutional legacies (Sorensen 2011, 713). There are interesting occasional local experiences of citizen science but still depend largely on personal relationships and alignments rather than a systemic approach (Seixas, Baptista, and Dias 2020). Nevertheless, initiatives promoting citizen engagement and co-production in mobility issues by the EU can help break the pattern, in light of Pierre's (2019) findings.[10]

Notes

1. Authors' calculations based on extrapolations from the censuses. Earlier estimates should be understood as an upper bound.
2. Metro reports are available online at: https://www.metrolisboa.pt/institucional/informar/relatorios-e-documentos/. Carris reports are available online at: https://www.carris.pt/a-carris/empresa/relatorios-e-legislacao/.
3. Information on schedules include online information for Metro and apps for Carris or public transports in LMA (transporlis.pt). The variety of categories of customer feedback include FAQs, 'Talk to us', 'Complaints', 'Suggestions and compliments' for Carris, and 'Requests for information', 'Complaints', and 'Suggestions' for Metro. While Metro couples this with information on 'Work in progress' and 'News' to be more transparent, its inclusion in the section 'Informing: Customer service' only emphasizes one-way communication. Institutional websites were accessed in June, 2020.
4. The following text is based on the interviews conducted with managers at the Human Resources Departments of Metro and Carris, as well as with a member of the Metro Works Council.
5. Carris and Metro have active memberships in both national (Associação Portuguesa para o Desenvolvimento dos Sistemas Integrados de Transporte; Associação Portuguesa Promoção de Sistemas e Serviços Inteligentes de Transportes) and international associations (International Association of Public Transport; International Bus Benchmarking Group; Major Metropolises Group; Nova Metro Benchmarking Group).
6. Carris Bus company was founded in 1872 offering tram services and Metro in 1948 (operating since 1959), gathering 220 years of operation between them.
7. Five days after the direct loss in the 2017 local elections, the largest union connected with the Communist Party called for what became the largest strike in the public sector since this government took office.
8. The scenario post-2021 local elections present an even more complex scenario. Within the LMA, the communist party grew significantly in Lisbon but lost two additional municipalities to the socialist party, while this lost the capital Lisbon to the center-right opposition. After 14 years in the opposition, a coalition has been (unexpectedly) the most voted and the new Mayor will be Carlos Moedas, former EU Commissioner. Nevertheless, center-left and left opposition parties hold 59% of the councilors and negotiations between the contenders will be challenging. The reality intensify the tensions between cooperation and competition at the local and national level. National budget approval and opposition (and recovering control) in Lisbon depend crucially on the communist party aligning with socialists, but their local electoral losses are promoting unusual public dissent by communist militants. See, for example, https://www.dn.pt/opiniao/o-pcp-esta-a-suicidar-se-14170595.html
9. Following COVID-19, Lisbon municipality has pushed strongly towards a more sustainable mobility, namely through subsidizing regular and electrical bicycles, but, with citizens trying to avoid public transport, the sale of (used) cars has intensified. It is unclear the position of the new mayor regarding this issue.
10. See, for example, https://www.eiturbanmobility.eu/launch-of-call-for-proposals-for-citizen-engagement/

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References

Addie, J. D., and R. Keil. 2015. "Real Existing Regionalism: The Region between Talk, Territory and Technology." *International Journal of Urban and Regional Research* 39 (2): 407–417. doi:10.1111/1468-2427.12179.

Addison, J. T., P. Portugal, and H. Vilares. 2017. "Unions and Collective Bargaining in the Wake of the Great Recession: Evidence from Portugal." *British Journal of Industrial Relations* 55 (3): 551–576. doi:10.1111/bjir.12198.

Albrechts, L., A. Barbanente, and V. Monno. 2019. "From stage-managed Planning Towards a More Imaginative and Inclusive Strategic Spatial Planning." *Environment and Planning C: Politics and Space* 37 (8): 1489–1506. doi:10.1177/2399654419825655.

Angle, H. L., and J. L. Perry. 1980. "Job-related Employee Attitudes in Urban Mass Transit." *Transportation Research Record* 759: 20–25.

Arrigo, G., and G. Casale. 2010. "A Comparative Overview of Terms and Notions on Employee Participation." *ILO Labour Administration and Inspection Programme* Working Document Number 8. https://www.ilo.org/wcmsp5/groups/public/—ed_dialogue/—lab_admin/documents/publication/wcms_123713.pdf

Attuyer, K. 2015. "When Conflict Strikes: Contesting Neoliberal Urbanism outside Participatory Structures in Inner-city Dublin." *International Journal of Urban and Regional Research* 39 (4): 807–823. doi:10.1111/1468-2427.12251.

Behrsin, I., and C. Benner. 2017. "Contested Spaces and Subjectivities of Transit: Political Ecology of a Bus Rapid Transit Development in Oakland, California." *Journal of Transport Geography* 61: 95–103. doi:10.1016/j.jtrangeo.2017.05.003.

Bertolini, L. 2007. "Evolutionary Urban Transportation Planning: An Exploration." *Environment & Planning A* 39 (8): 1998–2019. doi:10.1068/a38350.

Braun, D., and F. Gilardi. 2006. "Taking Galton's Problem Seriously: Towards a Theory of Policy Diffusion." *Journal of Theoretical Politics* 18 (3): 298–322. doi:10.1177/0951629806064351.

Carr, C., and M. Hesse. 2020. "Mobility Policy through the Lens of Policy Mobility: The post-political Case of Introducing Free Transit in Luxembourg." *Journal of Transport Geography* 83: 102634. doi:10.1016/j.jtrangeo.2020.102634.

Cooke, B., and U. Kothari, eds. 2001. *Participation: The New Tyranny?*. London: Zed Books.

de Dios Ortúzar, J., and L. G. Willumsen. 2011. *Modelling Transport*. 4th ed. Chichester, UK: John Wiley & sons.

Flyvbjerg, B. 1998. *Rationality and Power: Democracy in Practice*. Chicago, IL: University of Chicago Press.

Gómez, G., A. A. Corradi, P. Goulart, and R. Namara. 2010. *Participation for What: Social Change or Social Control?* The Netherlands: Hivos, Oxfam-Novib and IISS Publications, The Hague. https://www.researchgate.net/publication/254805460_Participation_for_what_social_change_or_social_control.

Goulart, P., and F. J. Veiga. 2016. "Portuguese 2015 Legislative Elections: How Economic Voting, the Median Voter and Unemployment Led to 'The Times They are A'changin'?" *Electoral Studies* 43 (3): 197–200. doi:10.1016/j.electstud.2016.05.004.

Hansen, C. J. 2006. "Urban Transport, the Environment and Deliberative Governance: The Role of Interdependence and Trust." *Journal of Environmental Policy & Planning* 8 (2): 159–179. doi:10.1080/15239080600772191.

Healey, P., C. De Magalhães, A. Madanipour, and J. Pendlebury. 2003. "Place, Identity and Local Politics: Analysing Initiatives in Deliberative Governance." In *Deliberative Policy Analysis: Understanding Governance in the Network Society*, edited by M. A. Hajer and H. Wagenaar, 60–87. Cambridge, UK: Cambridge University Press.

Heley, J. 2013. "Soft Spaces, Fuzzy Boundaries and Spatial Governance in post-devolution Wales." *International Journal of Urban and Regional Research* 37 (4): 1325–1348. doi:10.1111/j.1468-2427.2012.01149.x.

Héritier, A. 2002. "Public-interest Services Revisited." *Journal of European Public Policy* 9 (6): 995–1019. doi:10.1080/1350176022000046463.

Innes, J. E., and D. E. Booher. 2003. "Collaborative Policymaking: Governance through Dialogue." In *Deliberative Policy Analysis: Understanding Governance in the Network Society*, edited by M. A. Hajer and H. Wagenaar, 33–59. Cambridge, UK: Cambridge University Press.

Ison, S., G. Marsden, and A. D. May. 2011. "Transferability of Urban Transport Policy." *Transport Policy* 18 (3): 489–491. doi:10.1016/j.tranpol.2010.10.003.

Kębłowski, W., T. Tuvikene, T. Pikner, and J. S. Jauhiainen. 2019. "Towards an Urban Political Geography of Transport: Unpacking the Political and Scalar Dynamics of fare-free Public Transport in Tallinn, Estonia." *Environment and Planning C: Politics and Space* 37 (6): 967–984. doi:10.1177/2399654418821107.

Lawton, P., and M. Punch. 2014. "Urban Governance and the 'European City' Ideals and Realities in Dublin." *International Journal of Urban and Regional Research* 38 (3): 864–885. doi:10.1111/1468-2427.12152.

Legacy, C. 2016. "Transforming Transport Planning in the Postpolitical Era." *Urban Studies* 53 (14): 3108–3124. doi:10.1177/0042098015602649.

Legacy, C., C. Curtis, and J. Scheurer. 2017. "Planning Transport Infrastructure: Examining the Politics of Transport Planning in Melbourne, Sydney and Perth." *Urban Policy and Research* 35 (1): 44–60. doi:10.1080/08111146.2016.1272448.

Legacy, C. 2018. "The Post-politics of Transport: Establishing a New Meeting Ground for Transport Politics." *Geographical Research* 56 (2): 196–205. doi:10.1111/1745-5871.12263.

Marsh, D., and J. C. Sharman. 2009. "Policy Diffusion and Policy Transfer." *Policy Studies* 30 (3): 269–288. doi:10.1080/01442870902863851.

Marshall, T. 2016. "Learning from France: Using Public Deliberation to Tackle Infrastructure Planning Issues." *International Planning Studies* 21 (4): 329–347. doi:10.1080/13563475.2016.1140021.

McArthur, J. 2017. "Auckland: Rescaled Governance and post-suburban Politics." *Cities* 64: 79–87. doi:10.1016/j.cities.2017.01.010.

McArthur, J. 2019. "The Production and Politics of Urban Knowledge: Contesting Transport in Auckland, New Zealand." *Urban Policy and Research* 37 (1): 45–61. doi:10.1080/08111146.2018.1476229.

McCann, E. 2011. "Urban Policy Mobilities and Global Circuits of Knowledge: Toward a Research Agenda." *Annals of the Association of American Geographers* 101 (1): 107–130. doi:10.1080/00045608.2010.520219.

Melo, P., N. Sobreira, and P. Goulart. 2019. "Estimating the long-run Metro Demand Elasticities for Lisbon: A time-varying Approach." *Transportation Research Part A: Policy and Practice* 126: 360–376. doi:10.1016/j.tra.2019.06.019.

Meseguer, C. 2005. "Policy Learning, Policy Diffusion, and the Making of a New Order." *The Annals of the American Academy of Political and Social Science* 598 (1): 67–82. doi:10.1177/0002716204272372.

Meseguer, C. 2006. "Rational Learning and Bounded Learning in the Diffusion of Policy Innovations." *Rationality and Society* 18 (1): 35–66. doi:10.1177/1043463106060152.

Mourato, J., S. Santos, D. Ferreira, and R. M. Do Carmo. 2017. "(In)consequential Planning Practices: The Political Pitfall of Mobility policy-making in Lisbon's Metropolitan Area." In *Experiencing Networked Urban Mobilities: Practices, Flows, Methods*, edited by M. Reudendal-Pedersen, K. Hartmann-Petersen, K, and E. L. P. Fjalland, 175–179. London: Routledge.

Mulley, C., and L. Reedy. 2015. "Research into Policy: A Case Study of Improving the Research Evidence Base for Transport Policy Makers in NSW, Australia." *Case Studies on Transport Policy* 3 (2): 215–221. doi:10.1016/j.cstp.2015.04.003.

Pedro, J., C. Silva, and M. D. Pinheiro. 2019. "Integrating GIS Spatial Dimension into BREEAM Communities Sustainability Assessment to Support Urban Planning Policies, Lisbon Case Study." *Land Use Policy* 83: 424–434. doi:10.1016/j.landusepol.2019.02.003.

Pierre, J. 2019. "Multilevel Governance as a Strategy to Build Capacity in Cities: Evidence from Sweden." *Journal of Urban Affairs* 41 (1): 103–116. doi:10.1080/07352166.2017.1310532.

Portugal, P., and M. Centeno 2001. "Wages of Civil Servants." Economic Bulletin, Banco de Portugal, September 2001. https://www.bportugal.pt/sites/default/files/anexos/papers/ab200105_e.pdf

Raymond, C. M., I. Fazey, M. S. Reed, L. C. Stringer, G. M. Robinson, and A. C. Evely. 2010. "Integrating Local and Scientific Knowledge for Environmental Management." *Journal of Environmental Management* 91 (8): 1766–1777. doi:10.1016/j.jenvman.2010.03.023.

Rogers, E. M. 1983. *Diffusion of Innovations*. New York: Free Press.

Saujot, M., M. De Lapparent, E. Arnaud, and E. Prados. 2016. "Making Land use–transport Models Operational Tools for Planning: From a top-down to an end-user Approach." *Transport Policy* 49: 20–29. doi:10.1016/j.tranpol.2016.03.005.

Schiefelbusch, M. 2010. "Rational Planning for Emotional Mobility? the Case of Public Transport Development." *Planning Theory* 9 (3): 200–222. doi:10.1177/1473095209358375.

Seixas, P. C., L. Baptista, and R. C. Dias. 2020. "Sociometrias territoriais de participação cidadã: Mapas de Kernel como ferramenta de apoio ao planejamento estratégico municipal. urbe." *Revista Brasileira de Gestão Urbana* 12: e20190249.Epub 29 May 2020. doi: 10.1590/2175-3369.012.e20190249.

Sorensen, A. 2011. "Uneven Processes of Institutional Change: Path Dependence, Scale and the Contested Regulation of Urban Development in Japan." *International Journal of Urban and Regional Research* 35 (4): 712–734. doi:10.1111/j.1468-2427.2010.00975.x.

Soria-Lara, J. A., A. Ariza-Álvarez, F. Aguilera-Benavente, R. Cascajo, R. M. Arce-Ruiz, C. López, and M. Gómez-Delgado. 2021. "Participatory Visioning for Building Disruptive Future Scenarios for Transport and Land Use Planning." *Journal of Transport Geography* 90: 102907. doi:10.1016/j.jtrangeo.2020.102907.

Sosa López, O., and S. Montero. 2018. "Expert-citizens: Producing and Contesting Sustainable Mobility Policy in Mexican Cities." *Journal of Transport Geography* 67: 137–144. doi:10.1016/j.jtrangeo.2017.08.018.

Stead, D., M. de Jong, and I. Reinholde. 2008. "Urban Transport Policy Transfer in Central and Eastern Europe." *disP-The Planning Review* 44 (172): 62–73. doi:10.1080/02513625.2008.10557003.

Stein, C., B. Michel, G. Glasze, and R. Pütz. 2017. "Learning from *Failed* Policy Mobilities: Contradictions, Resistances and Unintended Outcomes in the Transfer of "Business Improvement Districts" to Germany." *European Urban and Regional Studies* 24 (1): 35–49. doi:10.1177/0969776415596797.

Teles, F. 2016. "Local Government and the Bailout: Reform Singularities in Portugal." *European Urban and Regional Studies* 23 (3): 455–467. doi:10.1177/0969776413517249.

Temenos, C., and E. McCann. 2012. "The Local Politics of Policy Mobility: Learning, Persuasion, and the Production of a Municipal Sustainability Fix." *Environment and Planning A: Economy and Space* 44 (6): 1389–1406. doi:10.1068/a44314.

Timms, P. 2011. "Urban Transport Policy Transfer: "bottom-up" and "top-down" Perspectives." *Transport Policy* 18 (3): 513–521. doi:10.1016/j.tranpol.2010.10.009.

Trounstine, J. 2018. *Segregation by Design: Local Politics and Inequality in American Cities.* Cambridge, UK: Cambridge University Press.

Vecchio, G., R. Porreca, and D. Jácome Rivera. 2020. "Socio-spatial Concerns in Urban Mobility Planning: Insights from Competing Policies in Quito." *Sustainability* 12 (7): 2923. doi:10.3390/su12072923.

Venâncio, F. J. M. 2013. "Influência dos Tarifários de Transportes Colectivos na Repartição Modal dos Transportes na AML." Master Thesis., Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Lisboa. https://run.unl.pt/bitstream/10362/10048/1/Mota_2013.pdf

Vigar, G. 2006. "Deliberation, Participation and Learning in the Development of Regional Strategies: Transport Policy Making in North East England." *Planning Theory & Practice* 7 (3): 267–287. doi:10.1080/14649350600841446.

Vigar, G. 2017. "The Four Knowledges of Transport Planning: Enacting a More Communicative, trans-disciplinary Policy and decision-making." *Transport Policy* 58: 39–45. doi:10.1016/j.tranpol.2017.04.013.

Weimer, D., and A. Vining. 2011. *Policy Analysis.* 5th ed. Upper Saddle River, NJ: Pearson.

Wellman, G. C. 2015. "Citizens or Customers? Transit Agency Approaches to Community Engagement." *Journal of Public Transportation* 18 (1): 1–11. doi:10.5038/2375-0901.18.1.8.

Willson, R. 2001. "Assessing Communicative Rationality as a Transportation Planning Paradigm." *Transportation* 28 (1): 1–31. doi:10.1023/A:1005247430522.

ANNEX 1. Topics covered in the semi-structured interviews

Sources of Knowledge

- Do decision-makers have field experience?
- Is there a rotation of functions?
- What is the weight given to the quantitative analysis of travel card registries vs. the qualitative information of workers?

Level of Worker Participation

- What is the level and quality of individual participation by workers?
- What is the reason for this (low) level of participation? Is technical knowledge required? Implementation timings? Availability of decision-makers? Availability of workers' representatives?
- Based on your knowledge, is the company a leader in the workers' participation (comparatively to other transport companies)?

Type of participation in the decision-making processes

- Generically, do workers or their representatives participate actively in the operational decisions or are simply consulted over an already made decision? (In contrast to occasional working groups where participation is built in for a specific purpose)
- Are formal channels opened with regular meeting with the Works Council/Administration Board? If so, how often?
- What is the role of middle management in the feedback information from workers? Is middle management involved in the decision-making process?