PUBLIC PRIVATE PARTNERSHIPS & FRAGMENTATION OF PUBLIC TRANSIT SERVICES: LESSONS ON GOVERNANCE CHALLENGES & SOLUTIONS TO IMPLEMENTING INTEGRATION MECHANISMS

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1. Introduction

A high level of integration of public transport services in terms of scheduling, ticketing, and cross-operator data provision and others is crucial to provide a high level of service to potential users. Transport integration issues are a growing need as transport providers consider low cost ways of increasing ridership following the travel pattern disruptions exacerbated by the recent pandemic, along with the equity and accessibility barriers created by poorly-integrated transit systems.

Particularly in Europe, there has been increasing privatization of services, which are tendered to private operators that bid in a competitive process, though public authorities often retain the power to define such services [1]. This has created operator fragmentation [1], and requires further research on cross-operator service integration. Previous scholarship has found that larger tenders and more integrated tenders should, over time, facilitate further cooperation [2], but more research is needed on the process for developing such tenders, how its ability to overcome transport fragmentation is influenced by the centralization of the process and the centralization of government decision making [3]. Israel presents a case with a highly centralized transport decision making process that will add to existing literature on tendering and transport fragmentation.

The challenge of delivering an integrated system has increased over the past decades, due to the (gradual) privatization of public transport services over multiple private public transport providers in many countries. Israel is one of the countries that have followed this path since the early 2000s, with the public tendering process resulting in the fragmentation of services from merely 2 into 17 bus operators.

In this paper, we study the tendering reforms in Israel and their cross-operator integration policies to learn from how they addressed operational barriers to coordination created by the increase in operators; and the institutional factors that facilitated or hindered service integration through managed competition. The Israeli case is compelling for this analysis because it involved a national tendering process in multiple metro regions, including intercity buses. The lack of strong local transit agencies illustrates the possibilities for a fully integrated tendering system, though strong local governance in other countries would make certain accomplishments more difficult.

We argue these policies should be of interest in other countries, but Israel's governance structure facilitated their implementation.

2. Materials and Methods

In this paper, we use document analysis as well as interviews with key members of the national government, private consultants, private operators and municipalities, to understand how the Israeli tendering process fragmented services into 17 operators, but also developed ways to integrate them. The study uses this information to understand the role of formal institutions in coordinating schedules, integration of fares and fare cards, shared use of terminals, and cross-operator data sharing across the country. We identify a number of ways integration was enhanced in each category, with the national government making use of its strong leverage over private operators. We also highlight the limitations of this approach due to the separate management of bus and rail services within the national government. The study closes with findings that Israel has achieved coordination despite a large amount of private ownership and fragmentation across operators. Flexibility over time has helped to refine this coordination with each new tender. However the results have been confined to the bus system, with poor coordination across modes (bus/rail), and results that are unsatisfactory to local municipalities, which are often not included in the decision making process. In this case, the use of a higher level of government to effect coordination has been effective, though it has also impeded their ability to adapt to local needs.

We followed standard research methodology for qualitative interviews outlined by Yin [4]. Interviews were conducted from 2022-2023. The interviews were semi-structured and followed a standard interview guide. Most interviews lasted between 1-2 hours. All were recorded and transcribed with the interviewees' permission, and anonymized. Interviewees included agency directors in the national government, private operators, consultant companies hired to write tenders for the government, municipal elected officials, and NGOs advocating for public transit riders. Interview findings were coded by topic area and compared with information from official government decisions and a state comptroller report auditing the tenders, their impacts and implementation [5].

3. Results and Conclusions

This paper identifies integration methods that were seen as necessary and possible to integrate private services regulated by a public-private partnership through a national tendering program. These included 1) *de facto* schedule coordination through high frequency of services; 2) fare equalization progressively expanding across clusters and nationally; 3) terminal sharing including regulation of private terminals and development of public transit terminals ; and 4) cross-operator data sharing, which provided the foundation for national fare equalization policies, universal national bus arrival signage and other means of relaying integrated multi-operator real time information to riders. The national regulatory structure clearly facilitated the level of integration, and indicates the possibilities for integration of multiple operators in a centrally-managed tendering process. We could surely imagine such integration happening at the state/provincial or regional level in a country with stronger local authorities, though the process would be more complex.

Some examples of this appear even in the centralized system we examined. We find limits to integration at the fault lines in Israel's governance structure: Bus operators did not follow the schedule without sufficient monitoring and schedule coordination did not encompass bus and rail (managed by a separate corporation). Rail joined the fare card last, and rail was not included in the

fare equalization reforms. The failure to include Israel Railways in the tendering program is an example of how separate government agencies make it difficult to integrate tenders across them, just as [6] found was the case in Copenhagen.

By contrast, the tendering process facilitated service integration by giving the Ministry of Transport and the Ministry of Finance significant and progressively increasing leverage over private operators. This paper confirms the hypothesis from [6] that larger tenders at higher levels of government (e.g. regional, provincial/state or national) provide advantages for integration of services. We might imagine it would be very difficult for a local government to accomplish strong integration, for example. Higher levels of government provide more leverage on operational subsidies and regulation to require universal standards on fares and fare media, terminals, and information, making questions of hierarchy or rigidity of the power structure between the Public Transport Authority and private operators less of a concern than in the cases studied by [6], due to the Israeli national government's significant leverage.

With regard to management at higher levels of government, specifically, we find here that there were two important benefits to managing integration at the national or state level: 1) Since higher level management captures most travel, the share of traffic crossing a jurisdictional border is rather limited. The share of trips that cross jurisdictional lines would increase as we go down the levels of government. 2) Higher levels of government have the most authority to set rules for private providers including rules requiring integration, while local or regional governments have to act according to those rules. Implementation of these rules is strengthened by higher levels of government and their greater ability to collect taxes, subsidize services, and use those subsidies as leverage to require policy changes in the tenders, including cross-operator integration. However the important drawback is the lack of ability to tune decisions to local needs, which may make the national level, as we saw in Israel, too high a level for most places, though it offers a number of lessons on strategies and types of multi-operator integration that lower levels could strive for.

A continuing theme was the importance of gaining leverage in order to effect integration policies that may be undesirable or unprofitable for a single operator to perform independently, but were beneficial to ridership when implemented by all operators.

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