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DRIVERS OF POLICY TRANSFER?

Exploring the role of private micro-mobility providers in international city-to-city knowledge exchange

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ABSTRACT

In recent years, urban areas have experienced a new phenomenon: Shared, electric, and free-floating micro-mobility. From early 2018 onwards, private-run e-scooter sharing models rapidly spread across the globe. While they enriched cities' mobility ecosystems, governing this novel form of mobility proved challenging. In many cases, existing policies failed to encompass the numerous regulatory challenges that e-scooters posed. When trying to find appropriate and quick regulatory responses, local policymakers often resort to drawing lessons from policies in other cities. At the same time, leading e-scooter providers, oftentimes globally operating firms, increasingly present themselves as 'pro-regulation' and actively participate in best-practice sharing. This situation suggests a puzzle that the literature has not yet introduced: What is the role of these providers in the processes of city-to-city policy transfer? Taking an exploratory approach, this thesis builds an interpretative model on the role of these actors and examines the case study of Vienna. It finds that e-scooter providers do, indeed, have a role to play in urban policy transfer. However, the complex processes of knowledge exchange mean that their role is more nuanced than simply engaging in lobbying. They can have an indirect impact on transfer processes, act as brokers of policy ideas, and provide cities with relevant insights on technical aspects. Building on the exploratory insights of this thesis, further research is recommended to increase the academic scrutiny of the topic.

Keywords: Policy transfer, micro-mobility, city-to-city learning, innovation, regulation, e-scooters

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1. INTRODUCTION

Policymaking is anything but a steady field. Technological advancements, unforeseen circumstances, and societal developments require policymakers across the globe and all levels of government to be responsive to change. Such change might develop slowly and, thus, allow time for regulation to develop. However, it can also appear over a short timeframe, giving policymakers less time to respond and less tested policy tools to rely on. A recent and striking example of such fast-paced developments can be found in the context of urban mobility. Over the last decade, cities have experienced the emergence of a host of new forms of mobility, particularly shared micro-mobility solutions. Micro-mobility can generally be understood as describing small and low-speed modes of transportation (Shaheen and Cohen 2019, 1). This definition includes bicycles but also electric scooters (e-scooters), small devices that can be operated while standing upright. While shared micro-mobility in its early forms exists since the 1950s, the latest wave of such services is characterized by its private-sector origin and a free-floating model, meaning that shared vehicles can be parked anywhere within defined operating areas (Chen, Lierop, and Ettema 2020). For cities, these new business models brought an addition to public transport networks but also notable challenges. Following the launch of the first commercial e-scooter sharing system in North America in 2018 (Janssen et al. 2020, 221), such sharing models had spread to about 350 cities in 40 countries by 2019 (BCG 2020). Across the globe, this new form of mobility confronted some cities with unannounced launches that virtually happened overnight, leading to cluttered walkways and safety concerns (Fearnley 2020).

Allowing little time to elaborate on regulatory responses, these developments gave an impetus for affected cities to look at peers to learn more about potential policy solutions (DuPuis and Griess 2019). Thus, the situation created a condition where cities experienced strategic needs for new policies, a crucial driver of policy transfer (Marsden et al. 2011). Within the discipline of public policy, the concept of policy transfer is by no means uncontested. Reviewing different terms used in the literature, Dussauge-Laguna (2012, 317) finds, for example, that other authors prefer to use terms such as *policy borrowing, policy mobilities,* or *lesson-drawing*. While acknowledging the importance of debates on terminology, this thesis borrows the definition of Dolowitz and Marsh (2000, 5), who conceptualize policy transfer studies as discussing "the process by which knowledge about policies, administrative arrangements, institutions and ideas in one political system (past or present) is used in the development of policies, administrative arrangements, institutions and ideas in another political system." This definition is, again, not an unchallenged one. James and Lodge (2003, 181), for example, criticize it for being overly broad, leaving room for a wide range of what can be transferred, ranging from, but not limited to, ideas over policy instruments to negative lessons. However, this broad definition also offers benefits in that it does not pose narrow boundaries on what could be understood as policy transfer.

While there is a growing body of literature on city-to-city policy transfer, the role of private actors in such transfer processes remains understudied. However, the growing importance of private actors in urban transport, particularly in the area of micro-mobility, suggests that the role of these actors in transfer processes should be examined more carefully. A survey among 20 members of the European city network Eurocities, for example, showed that about three-quarters of the surveyed cities were cooperating with private operators through information exchanges (Eurocities 2020, 5). This development is also mirrored by the communication of e-scooter providers who increasingly position themselves as key partners of cities with an active interest in shaping urban transport. Some companies speak of cooperating "with cities across the globe to develop programs that maximize the positive impact of micromobility" (Bird 2021). Others claim that the "rollout of micromobility products in cities all over the globe works best when done in close cooperation with city governments" (Wind 2020). Yet another provider describes itself as "pro-regulation", further arguing that „we need governments to act and put in place clear regulations for licensing, parking and vehicle classification" (Voi 2021).

On that note, it is also crucial to underline that many of the leading e-scooter providers have global operations. By 2020, US-based company Lime, for example, operated in around 60 cities in the US and about 90 cities across the globe (Mobility Foresights 2021). Thus, one could hypothesize that private providers bring their international regulatory experience into the growing information exchanges with cities. They might, for example, present legislation that favors their business model in discussions with cities and, thereby, contribute to policy transfer. However, no study has taken a closer look at such a role of private actors in policy transfer processes to date. Filling this gap, this thesis will explore this issue guided by the following research question: What role do private providers play in city-to-city policy transfer processes in the field of shared micro-mobility?

The thesis' contribution to academic debates is threefold. First, it adds to academic debates on subnational dimensions of international policy transfer, particularly on the role of private actors. Second, it also adds to the discipline of public policy more broadly by offering insights into the governance of new forms of technology, a field of ever-growing interest in many branches of the discipline. Thirdly, it responds to calls to enrich existing scholarly debates in transportation policy with further insights into governance processes and, more precisely, the dynamics of public-private interactions in the policy process (Marsden and Reardon 2017).

First, the thesis will conduct an extensive literature review to carefully introduce current debates and this research's position within academic debates. The first part of the review will provide an overview of the evolution of e-scooter deployments worldwide. It will then focus on key regulatory issues that the literature sees emerging for cities in the field of micro-mobility, showing that the rise of e-scooters brings both challenges and opportunities. The rationale behind this approach is that before focusing on the role of private actors, it is necessary to gain a broader understanding of the challenges that cities

face. The second part of the review will then be related to literature on policy transfer to demonstrate both the existing insights that this thesis draws from but also the current gap in the discipline that it is trying to fill. Following the literature review, the third chapter provides an overview of the deployed methodology. Based on the findings of the literature review as well as the policy transfer framework developed by Dolowitz and Marsh (2000), chapter four develops an interpretative model for the role of e-scooter providers in policy transfer processes. In chapter five, the case study of Vienna will be utilized to explore further empirical insights on the processes at play. Subsequently, the findings of the case study will be discussed before coming to a conclusion.

2. THEORETICAL BACKGROUND: A REVIEW OF THE LITERATURE TO CONNECT THE DOTS BETWEEN URBAN MOBILITY GOVERNANCE AND POLICY TRANSFER

2.1. The evolution of micro-mobility and associated urban governance challenges

As a point of departure for this thesis, the following section will provide an overview of relevant literature to underline both the origins of the thesis' theoretical framework as well as its contributions to ongoing scholarly debates. At the outset, one can note that the relative novelty of e-scooters means that the body of academic literature focusing on this technology is still evolving across different disciplines. Analyzing the content of 90 studies on electrically powered micro-mobility vehicles (including e-scooters but also e-bikes and self-balancing vehicles) published between 2014 and 2020, Boglietti, Barabino, and Maternini (2021) find that policies and governance responses have received particularly little attention. On the one hand, their finding, hence, confirms that this thesis is dealing with an issue that is yet to receive further academic scrutiny. On the other hand, a further review of the literature shows that the governance of new forms of urban mobility is by no means an empty canvas in academia. Therefore, in addition to the few recent works on e-scooters, this thesis can avail itself of a broader body of academic works that helps to outline urban regulatory problems associated with new forms of mobility more generally. There is, for example, a set of literature engaging with governance issues in connection to the broader concept of smart mobility (Finck et al. 2020; Marsden and Reardon 2018). While there is no overarching definition of smart mobility, dimensions of the latter can include the electrification of vehicles, connected infrastructure, integrated mobility-as-a-service (MaaS) solutions, the use of artificial intelligence, or on-demand mobility (Docherty, Marsden, and Anable 2018). Thus, these works are relevant in pointing at some general concerns that cities might face when confronted with new transport solutions.

Particularly relevant examples of the challenges associated with new technologies and such a smart mobility approach can be drawn from bike-sharing schemes. While such schemes have existed for more than 50 years, they have undergone several evolutionary waves. According to Chen, Lierop, and Ettema

(2020, 336), there are four such waves, the latest of which saw a change from publicly funded and docked systems towards mobile app-based solutions driven by private, venture-capital-backed providers. The authors further note that private fourth-wave solutions tend to operate in a dockless system. In such a system, the vehicles are "free-floating", i.e., they can be parked by the users at any point within a previously defined use area, another key difference to previous waves.

This new form of dockless sharing solutions which also deployed by many contemporary e-scooter providers, is subject to a growing body of literature discussing governance challenges. However, Cao, Prior, and Moutou (2021) observe that existing scholarship tends to focus on Chinese cities, given that this is where the fourth wave of bike-sharing originated before diffusing around the globe. In many cities across the world, the launch of dockless sharing solutions occurred rapidly and without much prior interaction with city authorities, exacerbating the issue that cities could not swiftly react since they found themselves in a scenario of regulatory void (Vancluysen 2019, 6). This void meant that existing regulatory models were incapable of dealing with free-floating business models, particularly because they created patterns of public space usage that did not arise before. A key concern relates to the commercial use of public space by a private provider (Docherty, Marsden, and Anable 2018, 120). These concerns involve questions on licensing fees and permits as well as the concentration of scooters in certain, highly popular parts of a city, leading to cluttering and littering (Fearnley 2020; Laa and Emberger 2020). A key issue with the rise of dockless shared bicycles, for example, was an oversupply that congested several cities' sidewalks (Tu et al. 2019). This oversupply raised concerns about competition over scarce urban space between e-scooter users, pedestrians, and cyclists (Ma et al. 2018, 362). Equity is another key concern involved with new mobility solutions, for example, because credit cards and the mobile devices necessary for such services are not readily available for all citizens (Golub et al. 2019).

Additional concerns relate to market failures, e.g., in scenarios where micro-mobility providers in unregulated markets might have a competitive advantage over other transport provisions. This can include taxis and buses that both tend to be heavily regulated in relation to prices, market access, and other factors (Fearnley 2020, 174). In practice, advantages for scooter providers could arise when they merely operate in profitable areas with high usage numbers while disregarding less profitable outer areas. While key issues that cities faced with dockless bike-sharing systems are similar to those posed by e-scooters, some authors have pointed out that this specific form of micro-mobility brings additional obstacles. Badia and Jenelius (2021, 17) note that the novel form of e-scooters made it difficult to classify them in existing regulatory categories, although most cities opted to tackle legal uncertainty by treating e-scooters equal to bicycles. The authors further point out that e-scooters raised safety concerns in several cities, either because of occurring accidents or pedestrians perceiving a feeling of unsafety with this new form of mobility.

Several authors have pointed at a host of regulatory tools that cities can use to manage dockless, free-floating bike-sharing solutions. According to the literature, such tools can range from outright bans over licensing schemes to equity measures (see, for example, Badia and Jenelius 2021; Deighton-Smith 2018; Fearnley 2020; Shaheen and Cohen 2019). Crucially, the literature also points out that apart from posing challenges, shared e-scooters can be integrated into a city's public transport system. Benefits of such an inclusion include improved service delivery, particularly on the 'last mile' and 'first mile' of a trip, i.e., the distance between a public transport stop and a citizen's origin or destination (Gössling 2020; Grosshuesch 2019). On that note, budget considerations can be key drivers of a city's positive view on private actor involvement, given that cities would have to invest little to enhance their mobility portfolio (Bartling 2019, 230). Cities can also request access to mobility and movement data generated by the providers, for example to channel traffic according to a city's preference or initiate demand-based improvements of the infrastructure (Janssen et al. 2020; Papa and Lauwers 2015, 185). However, this also relates to a broader question of urban mobility management, namely whether new mobility offers do, in fact, complement public transport options or rather compete with them (Wilson and Mason 2020). These are important considerations to consider in terms of a local government's attitude towards such new forms of mobility.

Overall, the above suggests a complicated point of departure for a city's regulatory strategy. On the one hand, private-run and free-floating shared e-scooters can pose disruptions. On the other hand, they might constitute a welcome addition to a city's urban mobility offer and as such, cities might have an interest in enabling these services. Thus, local policymaking has to balance innovation with securing public values (Docherty, Marsden, and Anable 2018). In a study of ten cities' policy responses to e-scooters, Gössling (2020) finds that the policy process often resembled a trial and error phase. Boglietti, Barabino, and Maternini (2021, 25) further indicate that the pace of technological development means that policies on e-scooters and similar solutions undergo continuous updating. Deighton-Smith (2018, 22) notes that urban policymakers had quickly responded to free-floating micro-mobility services in many cities. However, he goes on to argue that such an approach also carries regulatory risks. According to his argument, the longer-term prospect of such mobility solutions is often unclear, meaning that an excessively harsh regulatory reaction could limit a city's chance to profit from possible benefits of such technologies. This points at a situation of uncertainty, a factor that might lead policymakers to look at other cities to learn from their experiences (Canitez 2020).

2.2. The connection to policy transfer

On that note, one can draw the bridge to the literature on policy transfer. As was already underlined in the introduction, this thesis borrows Dolowitz and Marsh's (2000) broad definition of policy transfer that is concerned with different forms of knowledge exchange between actors. While studies on urban policy transfer processes already existed before the concept started gaining wider popularity in the

discipline (see, for example, Wolman, 1992), some authors have spoken of a "methodological nationalism" that focused on state-to-state transfer rather than subnational levels (Stone 2004, 549). Particularly in the field of transport policy, however, processes of urban policy transfer are under growing scrutiny. Examples range from city-to-city learning in transport planning (Pojani and Stead 2015) to exploring the diffusion of bike-sharing systems (Parkes et al. 2013).

More generally, Campbell (2012) notes that a re-negotiation of the central-local relationship, technological advances in the field of transport as well as new approaches to the private sector all give impetus to knowledge exchange. The new approaches to the private sector that Campbell hints at can also be visible in the example of micro-mobility. Driven by the complexity of governing smart mobility solutions, policies increasingly result from negotiations between different sets of actors that policymakers need to manage (Dudley and Richardson 2000 in Marsden and Reardon 2017, 239). In the smart mobility literature, authors have underlined that this approach, importantly, goes along with a process of co-creation that does, among other things, involve private businesses providing new services (Papa and Lauwers 2015, 185). However, while some examples study collaborative governance approaches in micro-mobility (e.g., Ma et al. 2018), they do not focus on the role of private actors in transfer processes, particularly in the area of micro-mobility.

This is not to say, however, that the literature is silent on private actors in transfer processes. In their study of different cities' approaches to policy transfer, Marsden et al. (2011, 507) identify that private transport suppliers were "engaged in around one-quarter of policy search initiations and over one-half of all transfer processes". This interesting finding, however, was not discussed by the authors in greater depth. Shaheen and Cohen (2019, 18), for example, note that data scientists from many cities, mainly from the US, worked together on building a harmonized data platform for mobility providers to share their data with cities. The details of this private-public cooperation on data sharing, however, are yet to undergo academic scrutiny. There are additional examples in the literature showing that the role of private actors in policy transfer processes is only covered on superficial levels. Marsden and Stead (2011, 497), for example, point out that lobby groups can be crucial actors in policy transfer processes. Still, they do not provide a detailed account of how and when these groups influence transfer processes. Similarly, Shefer (2019, 66) identifies an active private sector involvement in creating business networks between cities engaging in policy transfer but does not discuss this issue in greater detail.

Some examples in the literature approach the study of private actors in policy transfer by considering them as policy entrepreneurs, i.e., facilitators of policy exchanges between different countries (e.g., Stone 2004, 556). Where articles on non-state actors as policy entrepreneurs exist, however, discussions tend to circle around non-governmental organizations (NGOs) rather than private enterprises (Porto de Oliveira and Pal 2018, 201). While there are examples of articles discussing the overall role of private

companies as policy entrepreneurs in smart mobility (see, for example, Salas Gironés, van Est, and Verbong 2020), these works seldom discuss their role in policy transfer processes.

Overall, the literature shows a consensus that further research needs to be conducted in several fields of policy transfer studies, particularly in the area of subnational policy transfer (Benson and Jordan 2011; Dolowitz and Marsh 2012; Dussauge-Laguna 2012). In addition, Porto de Oliveira and Pal's (2018) recent review of policy transfer literature outlines six frontiers of innovation in public policy research. One of them confirms that the role of the private sector, e.g., of micro-mobility providers, deserves more attention in the discipline. In light of this, the thesis aims at contributing to ongoing debates by taking a closer look at the role of internationally operating e-scooter providers in policy transfer processes.

3. RESEARCH DESIGN AND METHODS

3.1. Building the research design

The above literature review has shown that the regulatory processes in the area of micro-mobility are complex. Thus, the insights of the literature review suggest that the role of private actors in policy transfer processes needs to be viewed from a comprehensive perspective. A structured way to do so was offered by Dolowitz and Marsh's (2000) policy transfer framework developed in one of their seminal works. Arguing that an examination of policy transfer requires a researcher's broader understanding of processes, the authors pose six questions:

> *Why do actors engage in policy transfer? Who are the key actors involved in the policy transfer process? What is transferred? From where are lessons drawn? What are the different degrees of transfer? What restricts or facilitates the policy transfer process?* (Dolowitz and Marsh 2000, 8)

One should note that the two authors are not alone in framing their research on policy transfer around a set of questions. Wolman (1992, 29-30), for example, approached transfer processes with similar questions. However, it is worth noting that he did not include a specific question on key actors. Interestingly, Benson and Jordan (2011, 373) argue that many of these questions, including the ones posed by Dolowitz and Marsh, have already been answered to varying degrees. However, their take suggests that there are definite answers for such questions that can be considered generalizable insights on policy transfer. Particularly given the ever-changing challenges faced by policymakers, e.g., in the field of mobility governance, one can question such a suggestion.

Rather than understanding such questions as pathways to clear answers, this thesis considers them as a guiding frame. Given that they point at a comprehensive set of issues, answering a single question in-

depth can already provide paper-length insights. However, one could also argue that focusing on one question alone poses the risk of over-simplifying the policy transfer process or omitting some relevant insights. With this rationale in mind, the thesis takes the six questions posed by Dolowitz and Marsh (2000) as inspiration for building a structured way to provide interpretations on the role of private e-scooter providers in the transfer process. More precisely, it amends the questions with the goal to explore the role of the providers in relation to different aspects of the transfer processes. The questions forming the frame of the interpretative model are:

- How do the providers relate to why cities engage in policy transfer?
- How do providers position themselves as a key actor in policy transfer processes?
- How do the providers relate to what is transferred?
- How do the providers relate to where lessons are drawn from?
- How do the providers relate to different degrees of transfer?
- How do the providers relate to constraints in the policy transfer process?

The interpretations of this model are based both on insights from the above literature review as well as additional primary sources. To explore the assumptions of this model in an empirical example, the thesis also conducts a case study. The considerations underlying the case study selection will be explained below.

3.2. Case study selection

Given that the insights used to develop the interpretative model draw from a global scope of sources, the model is meant to have broad applicability. Nonetheless, one must acknowledge that cities across the globe are embedded in strongly diverging contexts with differing characteristics and policy needs. Discussing municipal policy processes does, for example, require considerations of a city's regulatory capacity and autonomy. On that note, Fearnley (2020, 177) introduces the principle of subsidiarity, suggesting that e-scooters are an issue that is most effectively tackled at a local level, i.e., the lowest government level possible, rather than a national or potentially even supranational level. Placing urban mobility governance into a broader context of sustainability, Boix Palop (2020) echoes this and emphasizes that, in light of cities' highly varying needs and characteristics, the most sustainable options for a city's sustainable mobility management are best decided on a local level. On the one hand, this underlines the importance of cities in this regulatory area. On the other hand, Boix Palop (2020) goes on to argue that the cities' regulatory autonomy depends on appropriate federal and regional frameworks. On that note, one must acknowledge that the dimensions of local autonomy, e.g., in terms of finances or politics, greatly vary and always depend on the historical and geographic contexts a city is embedded in (Bulkeley et al. 2018). This point serves as a reminder that any generalizations drawn

from the broad model to concrete city cases are subject to narrow boundaries and will always have to be viewed in context.

Particularly given that both scholarly works on micro-mobility as well as the role of private actors in policy transfer processes are still developing, this thesis considers its research as exploratory rather than as providing universally valid insights. When selecting the case, three key criteria were set. These characteristics required cities (a) to be situated in a country where e-scooters were allowed by national legislation, (b) to have some form of local scooter regulation in place, and (c) to have a presence of internationally operating scooter providers. A few considerations guide the setting of these characteristics. Scrutinizing a city located in a country where e-scooters are yet to be legalized would not necessarily mean that no insights could be gathered. The city might, for example, prepare for an upcoming legalization and, thus, also consider policies that are currently in place in other cities. The same might hold true where no local regulations are in place yet. Nonetheless, these two scenarios are likely to go along with less analyzable data than when fulfilling the scoping criteria's two key characteristics. In such a case, the higher likelihood to have access to policy briefs, media coverage, and similar sources, provides for a richer array of analyzable data and, thus, more reliable results. Given that the thesis is particularly interested in the role of international providers on policy transfer, cities where micro-mobility providers had no other global operations were also excluded.

A helpful overview of the current state of global e-scooter regulation was provided by the *Micromobility Policy Atlas*. This publicly available dataset presents a global overview of local regulations on shared micro-mobility, both on e-scooters and bicycles. The dataset is a joint project of three non-profit organizations, the World Resource Institute's Ross Center, the New Urban Mobility Alliance, and the Shared-Use Mobility Centre (SUMC). While one must acknowledge that the dataset does not provide a complete overview of global policies, it lists information on about 100 cities (SUMC, 2021), thus, providing a structured overview of potential case study cities. In addition, the official language of the case study city is a relevant practical implication for the case selection, given that conducting a thorough analysis requires the researcher to analyze a wide array of documents. In light of all the above criteria, the Austrian city of Vienna was identified as suitable city for a case study.

3.3. Data collection for case study

The workings behind e-scooter regulation, particularly the processes of learning from other cities, is difficult to observe. To understand these processes in greater depth, interviews were identified as a crucial data source to look for observable traces of the process under scrutiny. More precisely, semi-structured interviews were conducted with experts, in this instance referring to a set of stakeholders with strong technical expertise or a background of political involvement in the field of e-scooter regulation in Vienna. The choice for semi-structured interviews was particularly driven by the method's

ability to uncover and pursue leads and insights in fields that are not yet fully charted (Adams 2015). Thus, interviewees were asked questions based on a topic guide that was similar for all interviews. Still, the conversations were flexible enough to explore insights that a standardized survey would not allow for. However, one must note that solely relying on interview data, particularly with a relatively small number of interviewees, poses the risk of obtaining skewed results. To improve the accuracy of the findings and provide a more comprehensive view on e-scooter regulation in the interviews, the thesis, thus, deploys triangulation (Hastings 2010). To triangulate the interviews' insights, the results are enriched with findings of a content analysis of media coverage and additional material published by the City of Vienna, civil society groups and other stakeholders, e.g., technical advisory bodies. The interviews explore the timeframe between the introduction of e-scooters in Vienna in late 2018 until the first interview in May 2021.

The literature review already suggested certain categories of actors with a strong involvement in transfer processes. Including the perspectives of these actors on e-scooter regulation processes is, thus, important, leading to the deployment of a purposive sampling strategy to ensure the inclusion of such perspectives (Robinson 2014, 32). In addition to relying on a priori assumptions based on the interpretative model, the identification of suitable interviewees was complemented by a focused study of media coverage and public documents. Analyzing media coverage allowed for gaining an overview of actors that were either publicly speaking on the issue of e-scooters and their regulation or mentioned in news articles on the issue. This analysis helped to narrow down both public and private actors involved in these processes. In addition, a search was conducted in organizational charts of the City of Vienna to identify experts whose jobs were linked to e-scooters or shared mobility more generally. Conducting such a pre-screening helped the accuracy of sampling as well as the identification of potential interviewees. However, the process also remained open to include further recommendations for interviewees that did not emerge from the framework's assumptions or through the pre-screening process. To allow for this openness, the thesis also deployed snowball sampling by asking the interviewees to recommend experts they considered appropriate for an interview (Robinson 2014, 37). However, snowballing was not the key sampling method, given that relying on this technique also poses the risk of a recommendation bias that might skew results.

In total, 18 potential interviewees with a stake in e-scooter regulation in Vienna, including bureaucrats of the city administration, e-scooter providers, the public transport agency, local politicians, and civil society actors, were identified and received invitations for an interview by email. Eight recipients of the invitation agreed to be interviewed, while one potential interviewee declined the request but provided some information by email. To allow interviewees to speak openly about the processes, they were assured confidentiality. Thus, the thesis only refers to interviewees by their affiliation to certain stakeholder groups. The interviewees included three city-affiliated bureaucrats working as advisors and

policy officers, two representatives of scooter providers, one local politician, one representative of a civil society organization, as well as one staff member of a technology agency owned by the Austrian federal government. This composition allowed for gathering insights from different perspectives and was in line with the criteria outlined in the purposive sampling.

Due to the ongoing COVID-19 pandemic and restricted travel opportunities, all interviews were conducted via video calls, using an online communication tool. Compared to face-to-face interviews, online interviews render it more difficult for the researcher to connect with interviewees, which can also impact the results. However, particularly when compared to interviews by phone, video communication can also offer benefits. Such a research medium not only carries advantages in terms of accessibility and costs but also allows for interpersonal interaction. At the same time, interview participant's comfort can be improved by their ability to freely choose a comfortable location (Hanna 2012). In all interviews, interviewees appeared to have been used to working with online communication, which allowed for fruitful interview dynamics. Most interviews lasted for around 30 minutes while two were closer to one hour, the maximum recommended length for a semi-structured interview (Adams 2015, 493).

4. AN INTERPRETATIVE MODEL ON THE ROLE OF PRIVATE PROVIDERS IN MICRO-MOBILITY POLICY TRANSFER PROCESSES

Understanding the role of private micro-mobility providers in city-to-city policy transfer requires an understanding of the broader dynamics at play as well as of the different aspects of policy transfer. The questions posed in Dolowitz and Marsh's (2000) policy transfer framework offer guidance for attempting to grasp such processes. The below will discuss a set of questions aimed at shedding light on the different aspects of policy transfer that Dolowitz and Marsh's questions pointed at. By doing so, it places the thesis' hypothesized role of private actors in policy transfer processes into a structured context.

4.1. How do the providers relate to why cities engage in policy transfer?

The literature review has shown how the emergence of shared e-scooters as a new mode of transportation confronted cities with a host of challenges. Regulatory voids, safety issues, and concerns over the use of public space gave rise to a situation of uncertainty. As existing policies appeared ill-fitted to manage e-scooters, city officials were required to find quick regulatory responses. On that note, one can recall Rose (2005) who speaks of "policy failure" as one of the key reasons for policymakers to look for examples abroad. Crucially, Dolowitz and Marsh (2000, 8) argue that in environments where regulators do not have much time to react, the need for quick solutions makes policy transfer more likely. This is a particularly fitting insight for micro-mobility, given that e-scooter operations quickly

spread across the globe since early 2018. On the "policy transfer continuum" outlined by Dolowitz and Marsh (2000, 13), this scenario could be considered as laying on the voluntary spectrum, given that cities' look abroad is driven by the desire to find cost-effective and quick policy solutions. However, one could also argue that in this scenario, the "policy failure", i.e., the key driver for drawing lessons from abroad, only commenced once e-scooter providers launched their activities. When discussing the relation of private providers with the drivers for transfer, this is a relevant point. It suggests that e-scooter providers could be interpreted as contributing to the occurrence of policy transfer in that their business operations created scenarios in which cities were encouraged to look for policy solutions abroad.

4.2. How do the providers position themselves as a key actor in policy transfer processes?

In a critical review of micro-mobility schemes across the world, Nikitas (2019) finds that the one-size fits all approaches deployed by some providers are ineffective. Hence, he recommends that operators and cities should work together to create synergies and make mobility concepts work both for the city and operators. While his study focuses on bike-sharing systems, it also has relevance for e-scooters. This thesis already showed how the interaction between providers and cities is growing. It also demonstrated how providers increasingly position themselves as 'pro-regulation'. In view of this trend, Fearnley (2020, 177) warns of a "regulatory capture" where the providers merely promote policies that favor the industry. It is particularly on that note that one can identify the e-scooter providers' interest in engaging in policy transfer. Evidence suggests that providers do use their interactions with municipal authorities to present regulatory insights from other cities. Addressing Swedish municipalities through a policy brief, the German provider TIER, for example, recommended policymakers to opt for clearer regulation and offered insights from its international experience. It stated:

> *There is a lot to learn in how other European cities have developed solutions that make it easier for the traveler to make sustainable mobility choices. TIER is active in over 90 cities in ten countries – let's share best practices so we can develop and if needed adjust current regulations based on experience. We are convinced that citizens prefer a clearer and better organised micro-mobility ecosystem in our cities* (TIER 2021).

This example demonstrates the scooter providers' interest in actively taking part in the diffusion of policies that favor their business models. While there is a growing trend of leading providers offering solutions tailored to local markets, their business strategies and interests carry an international dimension (Vancluysen 2019, 9). This also affects their policy preferences and makes them, for example, more likely to push for a harmonization of industry standards to facilitate their global operations. However, one should also underline that other actors might be interested in participating in policy transfer processes as well. Papa and Lauwers (2015), for example, argue that smart mobility

solutions lead to a heightened role of citizens in urban co-creation processes. One reason for this is that on-demand and app-based mobility solutions give consumers a more central role than conventional transportation does. Thus, citizens, e.g. organized through civil society organizations, might be important actors to consider as well. Overall, one should underline that policy transfer processes of cities can see the participation of a wide variety of actors (Marsden et al. 2011). Exploring these actors' role in greater detail would expand the scope of this thesis. Nonetheless, one should acknowledge that there are several interests at stake that might also impact policy transfers. All the more, the following sections are of relevance since they provide further interpretations of how the private providers might play a role in transfer processes.

4.3. How do the providers relate to what is transferred?

Following the sudden deployment of free-floating e-scooter sharing solutions, cities responded to regulatory voids by resorting to bans (both temporary and outright), local bylaws or by drafting licensing schemes (Fearnley 2020, 171). This suggests that the type of regulatory responses by cities strongly varied. Shaheen and Cohen (2019, 13) outline further regulatory tools that cities can and did deploy to overcome disruptions caused by e-scooters. Examples mentioned by the authors include designating parking spaces, limiting the service areas and number of deployed devices, or issuing operational requirements, for example in terms of a vehicle's maximum speed. Additionally, some cities opted for putting equity measures into place, e.g. by requiring providers to issue discounts for less wealthy citizens or to serve areas with lower public transport connectivity (Badia and Jenelius 2021, 18). Bringing in aspects of governance innovation, Fearnley (2020) also notes that the constant internet connectivity of e-scooters offers cities novel opportunities for very targeted regulation. A key example of how a city's response can utilize the connected nature of e-scooters is *geofencing*. With this tool, a scooter's GPS location can be used to enforce parking zones or to limit the velocity in low-speed zones (Deighton-Smith 2018, 20; Gössling 2020, 7). Further responses by cities included active attempts to integrate the new mobility solutions into public transport systems (Oeschger, Carroll, and Caulfield 2020).

When discussing what can be transferred, Dolowitz and Marsh (2000, 12) argue that "almost anything can be transferred" and identify "policy goals, policy content, policy instruments, policy programs, institutions, ideologies, ideas and attitudes and negative lessons" as key categories. The majority of these categories is reflected in the vast options of regulatory tools outlined above. Hence, cities have an equally vast choice of what to transfer. To understand how providers relate to cities maneuvering this choice, one can recall the insights of the second section, i.e., that e-scooter providers promote legislation that favors their business model. Their relation to what is transferred is, thus, that by actively communicating policy options, they might contribute to transferring what Dolowitz and Marsh categorize as *ideas and attitudes* on e-scooter regulation but can also shed light on *negative lesson*s

experienced in other cities. Furthermore, Badia and Jenelius (2021, 22) find that in order to establish fitting policy solutions for e-scooters, cities need technical insights, particularly in terms of fleet size, usage areas, parking, or their environmental impact. It is on that note that the insights of e-scooter providers can help cities assess what types of transfers are appropriate and feasible.

4.4. How do the providers relate to where lessons are drawn from?

Prior research showed that when cities are searching for lessons from abroad, they tend to look at peers that are located close to them, either geographically or culturally (Marsden et al. 2011, 502). Some studies, however, have also identified that cities assuming a leading or trend-setting role can be a particularly relevant source of policy learning. In an analysis of the diffusion of bike-sharing services, Parkes et al. (2013, 102), find that the French cities they studied drew from examples of a few "go to" cities in other countries. In a comparative review of scooter policies in the US, Janssen et al. (2020) present a similar finding. They identify a few cities that set policy trends to which regulations in other peer cities of the country converged over time. However, it is crucial to note that the authors underlined that it remained unclear whether the adaptation of policies was driven by responding to a city's own experience or those of peers.

Looking at the field of micro-mobility, Shaheen and Cohen (2019, 18) identify Los Angeles as a trend setter for data sharing policies. As part of its regulatory response to e-scooters, the city introduced Mobility Data Specification (MDS), a system that involves the creation of a data standard for public authorities to access mobility data generated by providers. A key to MDS' success lays in the uptake of the MDS technology by both cities and providers. Being adopted by more and more cities and participating companies, it evolved into a global, city-run foundation that governs the MDS infrastructure. As of mid 2021, the foundation has a membership of 50 cities across the globe and numerous private members, including two internationally operating micro-mobility providers (Open Mobility Foundation 2021). One could argue that, by joining such initiatives and improving their interoperability, providers can amplify the usability and thus transferability of such exemplary initiatives from trend-setting cities.

Networks play another key role in helping cities to decide where to draw lessons from. Acuto and Rayner (2016) find that not only is the number of city networks growing, but so does the involvement of private actors within such networks as traditional frontiers between private and public, particularly in infrastructure networks, blur. This suggests that, when they participate in such networks, providers can affect the discussed lessons to draw from by feeding in best practices from cities that might not be participating in these networks. However, one should be cautious not to overestimate the role of private actors. To date, there is little evidence suggesting a strong role of micro-mobility providers in key city networks. To date, the cooperation between providers and city-networks appears to be limited to

symbolic acts. An example is *The New Paradigm for Safe City Streets* developed by the city networks POLIS and Eurocities. This declaration on traffic safety is endorsed and signed by a host of e-scooter providers (POLIS 2021), but they do not hold any formal relationship with the networks.

4.5. How do the providers relate to different degrees of transfer?

The above discussions suggest that from the viewpoint of providers, an ideal scenario would entail one city transferring a provider-friendly policy from another city without any, or merely a few, alterations. However, as Rose (2005) underlines, such a direct 'copying' of policies is very unlikely. In their model, Dolowitz and Marsh (2000, 13), thus outline different gradations, ranging from a complete transfer to a policy simply serving as inspiration. Importantly, the authors note that the degree of transfer is dependent on several factors, e.g., the actors involved or the stages of the policy-making process. In light of this, the role of private actors in relation to this aspect is most likely to resemble that of one influencing factor among many.

4.6. How do the providers relate to constraints in the policy transfer process?

The transfer of policies can be constrained by an array of factors. In a virtually open-ended list, examples include issues of feasibility, high complexity as well as institutional or technological constraints (Dolowitz and Marsh 2000, 9). Several of these constraints cannot be influenced by private providers. However, they are important for providers to consider since they point at the complexity that local policymakers are confronted with when engaging in knowledge exchange. Even between socio-economically similar cities within Europe, the transferability of best practice examples is severely limited by the different national and regional frameworks that cities operate in (Eurocities 2020, 6). This is particularly relevant in the case of shared mobility solutions, e.g., e-scooters and bicycles. Some cities' legal frameworks, for example, allow sharing systems without a permit, while others require prior authorization, potentially even from higher levels of government (Laa and Emberger 2020). Geography is another key factor limiting any transferability of policies. Cities in Europe, many of which have old towns with narrow streets, are, for example, designed very differently than counterparts in the US and, thus, also regulated differently (Boglietti, Barabino, and Maternini 2021, 25). Furthermore, public authorities engaging in policy transfer can experience an overload of information that makes policies difficult to process (Marsden et al. 2012, 913). In light of this, any additional input that sharing companies provide for cities might, thus, exacerbate this saturation.

5. CASE STUDY: VIENNA

5.1. Regulatory background and the arrival of e-scooters

By mid-2021, six providers, all of them with international business operations, offered shared e-scooters in Vienna, Austria's capital city. Recalling the literature review, it is important to note that before the emergence of e-scooters, several cities across the globe experienced challenges arising from rapidly spreading free-floating bike-sharing systems. Vienna was no exception to that. Starting in late 2017, the city saw a series of private bike-sharing companies, most of them from China, launching their services. In the following months, Vienna experienced several of the issues outlined in the literature review, including vandalism and blocked walkways. To respond to these, the city reacted by issuing a local police ordinance (*Ortspolizeiliche Verordnung*). This is a tool that allows the city to issue an ordinance to "avert immediately expected grievances or to eliminate existing grievances disturbing local community life" [own translation] (City of Vienna 2018). The ordinance, inter alia, limited the number of bicycles per provider to 1500, set accreditation criteria, and required providers to remove bicycles that were illicitly parked in some specified public areas within a certain time frame (Laa and Emberger 2020).

Several of the interviewees considered the experiences made with free-floating bike-sharing schemes a crucial basis for Vienna's response to e-scooters. By the end of 2018, the first e-scooter providers started launching their services in Vienna. Similar to the situation in several other cities across the globe, Vienna's city administration faced uncertainty surrounding the definition of e-scooters. The issue was that the Austrian Road Traffic Act, a federal-level law, initially did not regulate the novel type of mobility embodied by e-scooters. However, a city official explained in the interview that Vienna was able to overcome this given that it is not only a municipality but also one of Austria's nine states (*Länder*). According to Austrian law, the execution of the Road Traffic Act rests with the federal states. Hence, the administrators opted for defining e-scooters as bicycles, a decision that was later confirmed in an amendment of the federal law (Austrian Parliament 2019). This meant that the content of the ordinance, e.g., including the limit of 1500 vehicles per provider and the accreditation process going along with it, was also applicable to e-scooters. When they launched in Vienna, the providers were, hence, not experiencing the same regulatory void that had existed in other cities.

However, it quickly became apparent that despite having the ordinance in place, concerns over public space use and safety issues continued. Citizens complained, among other things, about scooters blocking orientation systems for blind people or cluttering in the inner city. By October 2019, the city had received about 1000 complaints by citizens while the police reported around 1600 proceedings related to speeding on e-scooters, driving under the influence, or similar offences (*Der Standard* 2019).

Particular criticism was furthermore voiced by shopkeepers in the inner district who complained about their stores' accessibility being affected by illicitly parked scooters (Rachbauer 2019).

5.2. International knowledge exchange and policy learning

The ongoing issues suggested that the local police ordinance alone was incapable of managing scooters in the way the city had envisioned. The interviewed city officials explained that, thus, knowledge exchanges took place through different forums to learn from what other cities were doing. Working-level meetings with bureaucrats from other cities formed one important pillar. In addition, the city organized workshops to facilitate best practice sharing, e.g., in relation to Vienna's new sharing strategy that is yet to be published. In some cases, other cities were also approached with targeted inquiries on their regulatory approaches. According to the interviews, city officials, for example, reached out to counterparts in Lisbon and Tel-Aviv to inquire about policies on defined parking spaces. Another channel of communication was the exchange through working groups in city networks, most notably POLIS and Eurocities. However, it appeared that there were vast differences among the network's members in terms of the issues they faced and the capacities they had. A city official noted that the Viennese focus in these networks was to gain an overview of the different possible approaches, document them, and identify particularly effective solutions.

A crucial role was also assumed by the Austrian Association of Cities and Towns (*Der Österreichische Städtebund*) and AustriaTech, an agency owned by the Austrian federal government. Responding to a request by the association, the Austrian Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology, tasked AustriaTech with conducting an international policy monitoring. The agency placed the findings into an Austrian context and drafted a guideline for cities to follow in e-scooter regulation. Best practices from other cities included examples from Antwerp that had mandated e-scooter providers to participate in MaaS apps or US cities where socially or regionally adjusted prices were agreed upon with providers (Austrian Association of Cities and Towns 2019). Such policies were, however, as of May 2021, not implemented in Vienna. One interviewee noted that one part of the cooperation between AustriaTech and the Austrian Association of Cities and Towns also involved webinars with the participation of providers. In the example mentioned in the interview, the providers were using this opportunity to promote common standards for data exchanges. The interviews revealed that in the course of this process, AustriaTech was also in touch with the German city of Ulm, a member of the Open Mobility Foundation, the foundation emerging from Los Angeles' MDS initiative. While MDS and the technology surrounding it was a topic of discussion in Vienna as well, the city had, as of mid-2021, not joined the Open Mobility Foundation yet.

Across the board, interviewees pointed out that the creation of the above city guidelines showed how diverging legal frameworks and interpretations of regulation exacerbate drawing transferable lessons.

A city official highlighted that even within Austria, different regulatory frameworks pose significant barriers to policy transfer. In addition to legal barriers, another interviewee pointed at geographic differences. Unlike many other large European cities, for example, Vienna has a very condensed inner city that is the hub for tourism, business, culture, and politics. This made it more difficult to find fitting policy examples elsewhere.

5.3. Interactions between city and providers

To tackle the continuing issues with parking, speeding, and littering, the Vice Mayor and City Councilor for Transport initiated a roundtable with providers in October 2019. Some of Vienna's media outlets dubbed this roundtable as "e-scooter summit" (Scherndl 2019). Several interviewees participating in the summit reported that the latter was attended by about 30-40 participants from different institutions and departments. All e-scooter providers accredited in Vienna were in attendance. Further participants included, among others, police representatives, Vienna's public transport company *Wiener Linien* or the municipal department in charge of the e-scooter removal and disposal. According to the interviewees, the content of the conversations surrounding the e-scooter summit was often highly technical. This meant that the best practice exchange pursued from the side of providers focused on specialized issues. Particularly in the field of data sharing, one provider noted, the companies brought in insights from operations in other cities and presented their request for using a harmonized standard for data sharing. According to observers, a large part of the knowledge exchange further circled around scooter providers presenting use cases to outline technologically feasible ways of how their technology could help regulate the use of e-scooters with greater accuracy.

Resulting from the discussions of the e-scooter summit, the Vice Mayor who initiated the roundtable presented a catalogue of nine containment actions (*Sofortmaßnahmen)* in December 2019, due to enter into force in April 2020 (City of Vienna 2019). The measures required providers, among others, to automatically limit the speed of their devices in certain low-speed areas. They also mandated the providers to incorporate defined no-parking areas into their apps, e.g., close to hospitals. To ensure a balanced distribution across the whole city rather than just the popular first district, the measures also introduced a rule where the providers had to split their maximum number of 1500 vehicles equally across three defined areas. In the interviews, the providers noted that they must provide daily reports to the city administration to prove compliance with this rule. The Vice Mayor noted in a press statement that the drafted containment actions resembled the successful reconciliation of different interests. In the same statement, she also underlined that the benefits of e-scooters as an addition to public transportation meant they should not be banned, despite the grievances that they caused (City of Vienna 2019).

Both the providers and the city-affiliated interviewees underlined, however, that the exchange between city and providers was by no means limited to the summit. Both city officials and providers confirmed

their openness for a continuous dialogue. The vast majority of interviewees, regardless of their affiliation, noted that a special role in this regard was assumed by the Mobility Agency Vienna (*Mobilitätsagentur Wien*). This city-owned company serves as a hub for exchanges between the city administration, providers, but also other third parties and international inquiries. The interviews showed that a key driver for the city to remain engaged with scooter providers continues to be the rapid development of technology, requiring a constant updating of regulatory responses to which the experiences of e-scooter providers can contribute relevant information, particularly in relation to technical matters.

When announcing the containment actions, the city also informed about its plans to launch a request for tender (RFT) in early 2021 (City of Vienna 2019). While the interviews showed that changes in the political leadership had delayed this plan, they also demonstrated that the issue of tenders was firmly on the agenda of the city-provider interaction. Presenting examples from other cities, several providers had previously approached the city with a request to launch such an RFT and also repeated these calls in press statements (Pichler 2019). One interviewed provider pointed out that in light of stiff competition, pushing cities to adopt tender models is imperative for companies, given that the low-margin business of e-scooter sharing is not viable in a market with too many competitors. Regarding tenders, the interviews revealed that providers who won tenders in other cities such as Paris or London were actively asked to share their experiences. The city officials justified this strategy with wanting to utilize the providers' operational insights for learning from how tenders were designed and executed abroad. More precisely, parameters of interest included the operators' experience concerning allowed fleet numbers, the way that other cities conducted controls as well as how the parking was regulated.

It is relevant to note that the areas of responsibilities of the interviewed representatives of e-scooter providers exceeded Vienna and included cities in neighboring countries. Hence, they were also able to provide some insights into their general strategies of communicating with cities. Concerning their own operations, both interviewed representatives explained that there are frequent exchanges within their companies to collect and structure international regulatory experiences. The way that these experiences are used in the communication with cities, however, strongly depends on the context. One provider noted, for example, that the company had in the past provided best practice examples to other cities to help them build e-scooter regulations from scratch. According to the provider, this went as far as being invited by a smaller Austrian city to formulate concrete parts of the regulation. However, Vienna's decision to regulate e-scooters through the existing ordinance for free-floating bicycles meant that there was already an established set of rules that the company did not consider subject to notable adjustments. Hence, the exchanges with Vienna, as was also suggested above, mainly revolved around calls for launching tenders and technical insights.

5.4. Civil society and other actors

Before moving on to the discussion, one can also look at how other actors were positioned within this process. Civil society organizations, e.g., groups representing pedestrians or cyclists, were not invited to the city's 'e-scooter summit' mentioned above (Leth 2019). During the interview, however, a representative of a civil society organization pointed out that this was a general phenomenon. The interviewee reported that civil society actors have long asked the city administration to be included in decision-making processes to no avail. Overall, it was criticized that the interaction between providers and the city was not transparent, e.g., because details of conversations during the e-scooter summit were not made available to the public. Further, it was stated that exchanges between civil society groups in Vienna and other cities abroad were very limited.

One could, however, observe an interaction between Lime, one of the providers active in Vienna, and the civil society. In February 2021, the company co-hosted a webinar on Vienna's future urban mobility landscape with a civil society organization focusing on inclusion. In the program, it stated that "Lime will give an insight into the experiences that the world's largest provider of micro-mobility was able to gain during the corona pandemic in over 120 cities" [own translation] (BIZEPS 2021). Thus, the company also deployed its foreign experience as a tool for stakeholder communication. Another actor actively participating in sharing international best practices was the Chamber of Commerce Vienna (*Wirtschaftskammer Wien*). According to a press release of the organization, it called the Vice Mayor for stricter measures and provided examples of how large cities in other countries reacted to e-scooter-related challenges to support this claim (Chamber of Commerce Vienna 2019).

6. DISCUSSION

Overall, the case study showed that there is an active and constructive engagement between city officials and the e-scooter providers in Vienna. It also became apparent that the dimension of "policy failure" (Rose, 2005) as key driver for policy transfer was present in Vienna as well. Fearnley (2020, 171) argues that many cities had failed to be flexible in their legislative reaction to new mobility phenomena. For Vienna, this does not hold true, given that the city administration decided to define e-scooters in a way that would make them compliant with the existing ordinance on shared bicycles. Despite having the local ordinance in place, however, the issues arising after the launch of e-scooter sharing could not be managed adequately with the existing policy options at hand. However, one must underline that the ordinance meant that the city did not have to react with the same urgency that other cities had to. As one of the scooter providers underlined, the ordinance also meant that grassroots lobbying, a tool that the respective provider had deployed in other cities to steer policies in its favor, did not occur.

The finding showed that from the perspective of the city officials, the fast pace of technological development brought continuous change that the city attempted to manage by keeping in contact with the providers. In addition, the case also demonstrated that the providers actively approached city officials with foreign best practices on RFTs and suggested introducing such systems in Vienna as well. One can only speculate whether and to what extent the calls from providers ultimately affected the city's decision to develop a tender model. However, the case study showed that the experiences that providers made with tenders elsewhere were actively sought by the city to improve the accuracy of its own RFT that is currently under development. Rather than providing general ideas about policies, the providers delivered insights on specific parts of a tender. Thus, they actively contributed to fine-tuning the policy. This finding is in line with the interpretative model's assumption on how providers can help cities assess what types of transfers are appropriate and feasible. The technical input of scooter providers was also visible in relation to the complex issue of data sharing.

In terms of where lessons were drawn from, it did not appear that the providers played a particular role in advocating for policies from 'go to' examples. City officials, on the other hand, appeared to be open to gain insights from all over the world. The case study also confirmed that a strong variation among cities, even between such with close ties and established working relationships in city networks, is a crucial constraint for the transferability of policies. The case study also provided insights on actors outside the relationship between the regulator, i.e., the city administration, and the entity to regulate, i.e., the providers. The demands for stricter regulation with reference to other cities brought forward by the Chamber of Commerce are one example. In addition, AustriaTech, the federal government-owned agency, played a crucial role in managing the knowledge exchange between Austrian cities, their counterparts abroad, as well as other actors, including the providers. Given that the role of such a third party had not been discussed in the interpretative model, this might be an issue worth covering when developing this model further.

7. CONCLUSION

This thesis has shown the complexity of regulation in the field of micro-mobility by looking at the relatively new phenomenon of free-floating e-scooters. On the one hand, such novel forms of mobility can bring a welcome complement to cities' transportation networks, offer sustainable mobility alternatives, and improve the transport on the 'last mile'. On the other hand, the introduction of free-floating e-scooters can also bring challenges relating to the use of public space or safety concerns as well as more generally to the changing role of private actors in urban transport provision.

Resorting to policy transfer is a frequently sought method by cities to find solutions for such challenges, particularly when they arise with little prior notice. Connecting the concepts of well-established policy transfer literature with novel insights on local regulatory developments in the field of micro-mobility, this thesis has explored how e-scooter providers fit into such transfer processes. The interpretative model, inspired by the work of Dolowitz and Marsh and enriched with contemporary sources, has suggested that the role assumed by private providers is anything but one-dimensional. Although the influence of providers should not be overestimated, they can play a considerable role in relation to different aspects of policy transfer. First, their disruptive business models make them passive drivers of cities' knowledge exchange exercises by leading to the 'failure' of existing policies and the need for new approaches. Secondly, globally operating providers actively participate in the dissemination of policies favoring their business models. Given the complexity of policy transfer processes, merely lobbying cities to adopt policies favorable to providers is unlikely to materialize in results. However, one could argue that the role of private actors rather resembles that of idea brokers. As such, they can help to disseminate knowledge about regulatory and technological possibilities and thereby enrich the choice of policy options available to cities.

Vancluysen (2019, 33) argued that being confronted with increasingly blurred lines between public and private actors in the provision of mobility services, cities face the challenge of maintaining a leading role in shaping urban mobility. Despite undeniable disruptions that new forms of mobility can bring along, the findings of this thesis suggest that while private actors play an increasingly important role, cities remain in the metaphorical 'driver's seat'. In addition, the digital nature of the new services also allows for regulatory innovation, e.g., by incorporating the generated mobility data into urban traffic planning or by deploying geofencing for targeted regulation. The possibility of a "regulatory capture" (Fearnley 2020, 177) originating from e-scooter providers is, not least, also limited by the different characteristics and needs of cities. The vast differences between cities are also crucial to bear in mind when considering the generalizability of the thesis' findings. Given that the interpretative model was built based on global insights, it was designed to carry some degree of generalizability. However, as was done with the case study of Vienna, the interpretations of the model need to be viewed in a context that will always vary depending on the city under scrutiny.

A look at the publication dates of the literature used and discussed in this thesis demonstrates both the novelty of the issue as well as the small but growing body of literature on micro-mobility governance. With its exploratory approach towards the role of private actors in city-to-city policy transfer, the thesis has contributed to this specific field but also to the broader discipline of public policy. However, given the early stage of research in this area, several aspects in relation to the role of private actors are left to be examined. Given that this study has focused on city-to-city transfer, it has, for example, paid more attention to horizontal than vertical types of policy transfer. A possible way forward includes

corroborating and expanding the exploratory interpretative model developed above, e.g., by conducting additional case studies. Thus, this thesis concludes with a recommendation to expand the research in this field. After all, one must be cautious to prevent the discipline from experiencing a fate similar to that of some cities: being outpaced by technological change and the governance challenges the latter brings.

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