Institutional Logics at Play in a Mobility-as-a-Service Ecosystem

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Abstract: The last decade has brought the transport sector to the forefront of discussions on sustainability and digital innovations: practitioners, researchers, and regulators alike have witnessed the emergence of a wide diversity of shared mobility services. Based on a longitudinal case study of a regional Mobility-as-a-Service (MaaS) ecosystem in Sweden, constituted of a document analysis and 24 semi-structured interviews with 18 representatives from regional authorities, mobility service providers, and other stakeholders from the public and private sectors, this study examines the co-existing and competing institutional logics at play, identified as State logic, Market logic, Sustainability logic, Experimental logic, and Service logic. The analysis reveals that these institutional logics pertain to tensions in the collaboration within the ecosystem’s stakeholders in terms of: (1) finding a common vision and scope for MaaS, (2) establishing a sustainable business model, (3) triggering a behavioral change regarding car travel, (4) being able to find one’s role within the project and to consequently collaborate with other stakeholders, and (5) managing uncertainty through testing and experimenting innovative solutions, which ultimately yielded key learnings about MaaS and the shared mobility ecosystem and its stakeholders. These case study findings, based on an institutional logics framework, provide a novel perspective on emerging ecosystems, from which implications for MaaS developers and further research on shared mobility are drawn.

Keywords: institutional logics; MaaS; public–private partnerships; shared mobility; sustainability

1. Introduction

Offering Mobility-as-a-Service (MaaS) has been defined as combining a variety of mobility services from different providers (e.g., public transport, carsharing, and bike sharing services) into a single digital platform (i.e., a smartphone application) to address the transportation needs of customers in a user-friendly manner and based on a pay-as-you-go subscription pricing model [1–5]. Despite the concept’s international exposure, the concept of MaaS is deeply rooted in the Nordic countries. For starters, the term itself was coined by Heikilä in 2014, in her master’s thesis at Alto University in Finland [6]. The thesis resulted in a call for pilot projects from the Finnish Innovation Agency, which led to the founding of the first MaaS company (MaaS Global, operating Whim in Finland, Austria, Belgium, Japan, and the UK). Moreover, around the same time in Sweden, a MaaS trial known as Go:Smart (later renamed UbiGo) was financed by the Swedish Innovation Agency to develop, test, and evaluate ways of offering a combined mobility solution for sustainable traveling in the city of Gothenburg. UbiGo was launched in Stockholm in 2019 but has since ceased operation in early 2021 [7].

One key aspect of MaaS is its reliance on a digital interface that combines mobility services from a plethora of public and private actors to provide unique mobility solutions to each customer’s needs. Based on ICT developments (e.g., mobile networks, GPS technology, integrated payment services), the promises of MaaS include the provision of a more convenient and more sustainable solution than owning and driving private cars, which subsequently leads to the reduction of congestion in city centers and suburbs, the reduction of traffic accidents, and the reduction of the space needed to be allocated for parking. Since
MaaS is anchored in the shared mobility paradigm, promoting access and shared usage over the private ownership of vehicles, the assumption is that a smooth integration of a large variety of mobility services, such as combining bike-sharing with public transport services, is more appealing than owning, parking, maintaining, and driving a car, e.g., [1, 8].

In Sweden, the Minister for Policy Coordination and Energy initiated the launch of a ‘Sustainable Mobility-as-a-Service’ innovation competition (in the framework of ‘A Challenge from Sweden’) in 2018. In essence, the government took the strategic decision to support the development of MaaS, first and foremost through providing funding to ongoing and new projects, promoting the creation and dissemination of knowledge, and developing the necessary regulation and policy changes to move the transportation industry forward towards combined mobility [9–17]. Moreover, the European Commission’s Green Deal also states that “the Commission will help develop smart systems for traffic management and ‘Mobility as a Service’ solutions, through its funding instruments” [18] (p. 10). Ultimately, the MaaS sector is expected to grow exponentially to USD 372.1B by 2026 [19]. However, many challenges have been highlighted since the first projects were initiated, which are still unaddressed and remain issues today.

Already in 2016, a report highlighted the challenges in getting shared mobility service providers from the private sectors to interact both with each other and with public transport actors [20], indicating fragmentation rather than coordination in the Swedish transport system and marking a difficulty for individuals to smoothly combine different modes of transport. Furthermore, customers’ knowledge is very low: 85% of respondents to a 2017 Swedish survey had never heard of neither combined mobility, nor ‘transport as a service’, nor MaaS [10]. By and large, private car ownership is deeply ingrained in society, and the trade-offs between today’s promises about MaaS and what pilot projects have delivered remain high [9]. Looking at UbiGo, Sochor et al. reveal a mismatch between the expectations from municipalities, and the actual experiences of the users in terms of reduction in car usage. They furthermore reveal mismatches concerning the business models of the transport brokers and service providers and issues of back-office administration [21]. Indeed, despite the fact that 93% of the 200 participants in a UbiGo experiment found the app useful and considered continuing to use the mobility solution after the test period [22], the project itself was discontinued. Karlsson et al. argue, among other factors, that future projects would require a careful cooperation and collaboration between key actors (i.e., the diverse providers of transport services, the municipality, the technical integrator, and society at large) [22]. Mukhtar-Landgren et al. also pinpoint that it was particularly unclear which stakeholder should take responsibility for developing MaaS between public actors (e.g., municipalities, regions, public transportation authorities) and private actors (platform integrator, mobility service providers, etc.) [3]. MaaS was likely premature for public procurement at the time (2013–2014), and more collaborative forms of public–private partnerships were needed [23].

Mukhtar-Landgren et al. argue that the development of MaaS requires new forms of collaboration and partnerships between stakeholders that have not traditionally worked together [3]. Similarly, Goodall et al. state that “an important factor in making MaaS a success will be getting all of the players to work together. Stakeholders in the private sector might join the movement in search of profits, while government agencies could seek the public policy benefits that stem from reduced congestion: higher productivity, better air quality, fewer traffic accidents, and a smaller urban footprint for parking” [24] (p. 119). They write that “making MaaS a reality requires building a multi-stakeholder consortium of players. This is not just government’s responsibility—the private sector also has an important role to play. But for private stakeholders to be an equal partner in shaping this future, the promise of market value must exist” [24] (p. 123). Considering that the mobility ecosystem is very complex, cf. [9], the formation of such a new ecosystem will likely warrant the renegotiation of existing and well-entrenched roles, e.g., [3].

Both UbiGo’s and MaaS Global’s CEOs also reported that challenges for the development of MaaS relate to governance and business models (i.e., the distribution of value
between the integrator and mobility operators) rather than technology, since the required technology is there already [25]. In line with this, Goodall et al. write that “finding the regulatory sweet spot is key. Too much regulation and the private sector may find it difficult to innovate or participate; too little regulation and the public interest is not served” [24] (p. 125). In addition, there is not only a lack of a common definition of MaaS throughout regulations, but the current legal framework is also partially outdated, and it favors private actors from the automotive industry over MaaS and shared mobility actors [11].

In essence, critical issues for the development of MaaS include a cross-sector collaboration and new public–private partnerships, the allocation of responsibilities (e.g., ownership and governance, service design, technical integration), the establishment of a common vision, the identification of the right target groups and customer needs as well the challenge of changing traveling behaviors away from driving, the development of open technological architecture, and the design of new business models that are viable in the long-term [3,11,23,24]. Despite the popularity of the term MaaS among practitioners, the increased attention from researchers, the always increasing pressure for sustainability in the transport sector, and the trend of digitalization in the background, only a handful of MaaS trials have been successful. This prompts further research on these issues. In the related sharing economy paradigm, Zvolska et al. observed that a limited focus has been directed to the role of organizations in the creation of new practices or the disruption of prevailing institutions [26]. However, using institutional theory to investigate how sharing economy organizations can provide a better understanding of the dynamics and market changes at play in such an ecosystem [27]. For example, a study exploring the collaboration between sharing economy organizations and city governments and how these parties engage in institutional work to shape sustainability yielded many relevant insights [28]. Therefore, the aim of this study is to identify the different institutional logics within a MaaS ecosystem in order to understand how they translate into collaborations and tensions between the stakeholders in the development of such shared mobility projects. Indeed, it can be noted that the body of knowledge regarding MaaS is mostly constituted of government reports that are atheoretical. Nonetheless, previous research has relied upon institutional theory to investigate urban testbeds in “smart cities” [29], which shows the potential for using this theoretical approach to better understand how the stakeholders collaborate and shows the tensions between them in such an innovative project as an emerging MaaS ecosystem.

The remainder of this paper is structured as follows. First, the theoretical framework of institutional logics, the backbone of the study, is presented. Second, the methodology behind the case study of the chosen MaaS project in Linköping, Sweden (LinMaaS), is described. Third, the findings from a document analysis and semi-structured interviews with representatives from the public and private stakeholders involved are reported and discussed. Finally, conclusions from the study are drawn and recommendations for further research are provided.

2. Theoretical Framework

2.1. Institutional Logics Theory

Institutional theory is one of the most widely adopted and enduring influences in the study of how and why the processes of institutionalization occur within organizations. Fundamentally, institutions “shape, motivate and justify individuals’ and organizations’ actions” [30] (p. 18). Organizational decisions are influenced by institutional logics, which are defined as the organization’s structures and culture, norms, symbols, and practices that vary between institutions and influence decisions, while being embedded in individuals’ actions [30]. Institutional logics are ways of “ordering reality, and thereby rendering experience of time and space meaningful” [31] (p. 243). Institutional work is also described as the phases of conflict and collaboration between actors representing institutions, and it is described that the overall outcomes tend to reflect dominant actors’ interests and values [32]. That is why institutional logics have been used to analyze stability and change within organizations.
Institutional logics can coexist and do not necessarily dominate or replace one another; they can overlap and compete [30,33]. However, since logics contribute to solving problems in daily practice, the multiplicity of logics can be detrimental. This is pointed out by Schulz et al. from their study of a German intermodal mobility ecosystem in which they conclude that “the state logic of some actors, which is characterized by the obligation to provide mobility, impairs the quality of service platforms in supporting citizens in intermodal mobility” [34] (p. 417).

Research has investigated how individuals within organizations, or organizations within an emerging ecosystem, navigate tensions resulting from the co-existence of multiple logics which evolve and vary over time, e.g., [34–37]. For example, from their analysis of the tensions and trade-offs in a health care ecosystem, McColl-Kennedy et al. found that actors exhibit different forms of focal relationships between one another (e.g., patient–doctor, patient–nurses, nurses–family) and the respective different logics influence their roles and practices [38]. That is, the misalignment of ecosystem actors’ logics can lead to significant tensions from conflicting goals and practices, whereas resolving tensions through making trade-offs enables actors to work collaboratively towards achieving their respective outcomes. Nevertheless, the co-existence of logics in organizations or ecosystems is not always a cause for tension [39]. Moreover, reconciling conflicting goals and practices is not always realistic or beneficial in complex service ecosystems due to the differing logics of actors [38].

The dominant logic within an institution can also change over time as, for instance, new or hybrid logics emerge [40,41]. In the informatics sector, for example, Watson et al. write about the shift from a service logic that focuses on “how to create customers” to a sustainability logic, where the main question is about “how to reduce environmental impact” [42] (p. 3). They do not highlight the coexistence of the two but rather how sustainability is a new dominant logic. Grinevich et al. also identified the sustainability/green logic in the sharing economy that challenges existing institutions [43]. Nevertheless, more established economic and social logics appear to be critical for the growth of sharing economy platforms, as opposed to the emerging environmental logic [43]. Indeed, the sharing economy paradigm challenges current institutions and exhibits a multiplicity of logics cf. [27]. Geissinger et al.’s analysis shows there are conflicts between the market logics of profit-seeking and the non-market logics of sustainability and austerity [41]. Similarly, the multiplicity of the logics of hospitality and commerce, in the context of Airbnb, leads to “hybrid exchange” experiences with conflicting role expectations [39].

Institutions both enable and constrain actions and decisions [44]; however, individuals within organizations have the capacity to influence, manipulate, innovate, or transform these institutional logics by becoming “institutional entrepreneurs” [30]. Moreover, individuals who have experienced different institutions are likely to be aware of “heterogeneous institutional arrangements” [30] (p. 110) and to recognize that they can trigger a certain reflective capacity to innovate and recombine symbols and practices. Thus, studying the relationships between institutions and those who perform within them is important, since individuals are capable of changing institutions [45]. Individuals within an organization play a key role in determining which dominant logics are applied when designing the organizations’ institutional content [46]. For example, based on their study of institutional logics in the context of business model development in the carsharing industry, Vaskelainen and Münzel reveal that organizational actors use logics to develop their business models into directions that are generally aligned with their values and principles [47].

2.2. Dominant Logics

Previous research has often identified several dominant institutional logics [34,37,39,42,43,47,48]: namely, the state logic from the public sector, the market logic from private sector, the sustainability logic, the experimental logic, and the service logic (see Table 1). First, the main priorities in the state logic are the interests of a country and its citizens [49], ensured through fairness and accountability across various society levels [50]. The key stakeholders in the state logic are national and local government
entities, as well as multilateral funding agencies. Legitimacy in the state logic rests on
democratic and bureaucratic functions as individuals act as part of political and bureau-
cratic organizations whose decisions are in accordance with political objectives [29,49].
Nonetheless, actors in the state logic may ensure the balance of public and private interests
by negotiating with stakeholders and using legislation to place demands on private actors
or by demands through legislation [29].

Table 1. Key aspects of the dominant logics.

| State Logic                  | Market Logic                  | Sustainability Logic                   | Experimental Logic                  | Service Logic                  |
|------------------------------|-------------------------------|---------------------------------------|-------------------------------------|-------------------------------|
| Obligation to serve citizens; Accountability; Democracy; Bureaucracy. | Profit seeking; Efficiency; Performance; Competition; Value capture. | Protect the environment; Reduce consumption’s impact. | Design thinking; Innovation; Testbeds; Learning. | Service provision; Non-ownership consumption; Rental business models; Value-in-use. |

In contrast to state logic, market logic is rooted in economics and related to business
management. It has been on the rise in society since the 1980s [30]. Market logic focuses
on an organization’s aspirations towards increased efficiency and successful performance
in its competitive environment to achieve high commercial yields. Unlike state logic, the
interests of customers and investors are prioritized [49]. In market logic, terms such as
competition, margins, and returns on investment are central [51]. Furthermore, Landerer
notes that the market logic is demand-driven and derives utility from its own private
pay-off rather than solving societal problems [52]. For example, whereas the concept of
sharing is embedded in non-market/communal logics, sharing economy practices such as
carsharing and bike sharing are characterized by market logics, the fact of which leads to
potential tensions [48].

Sustainability logic, or green logic, aims at protecting the environment [53]. Organi-
zations may adhere to sustainability practices because of the need to conform to societal
pressures, government regulations, and competition [54]. Shared mobility practices and
services combined through MaaS have been linked to a possibility to address sustainability
issues [4,12,15,55,56]. In studying the influence of organizational logics in decision making,
Haffar and Searcy identify three main logics emerging from tensions in corporate sus-
tainability: those being market-led, values-led, and holistic logics [57]. This identification
aligns with previous research on the tensions between the three pillars of sustainability
management, e.g., [58,59]. While tensions are characteristic to the logic of sustainability [57],
organizations with a market-led sustainability logic tend to view tensions as win-or-lose sit-
tuations, whereas organizations with a holistic-led sustainability logic tend to view tensions
as paradoxical in nature.

The experimental logic is associated with innovation and design regarding problem
solving, cf. [60]. Experimentation is related to modernity and sustainable development,
since it is perceived as being capable of addressing environmental problems [50]. The
experimental logic is also orientated towards encouraging socio-technical and design
innovations, encouraging social and political learnings, and dealing with uncertainty [60].
Both private and public stakeholders collaboratively engage in innovation by testing and
learning to find new solutions and to produce new knowledge [30]. Iterative processes
provide opportunities to discover what works for each stakeholder and seek, eventually, to
collectively achieve satisfying solutions.

Service logic has emerged in business management and marketing research as an
approach to value creation through the provision of service, which is fundamentally
different from a logic focused on selling goods [61–66]. Grönroos and Ravald refer to service
logic as co-creating value and addressing equity in relationships between market actors [65].
Service logic recognizes institutions as the foundational facilitators of value co-creation
and service exchange in markets; as such, institutions fully inform an understanding of
networks [64]. This logic assumes that consumers find value in using goods rather than
buying and owning them, since services (e.g., rentals) are considered more convenient, flexible, and cost-efficient. Ultimately, service logic comprises of at least two mutually dependent aspects, i.e., customer service and service provision, e.g., [66].

3. Method

MaaS solutions are something new. Previous research has emphasized the need to empirically investigate the ‘how and why’ of the success or failure of this phenomenon. For this reason, case study research is suitable to illuminate why and how decisions were made and implemented as well as displaying their results, providing in-depth information and thick descriptions on processes and outcomes, and highlighting their unique aspects [67–69]. To pursue the research aim through the lens of institutional logics, the case study of Linköping Mobility-as-a-Service (LinMaaS) was chosen. In this section, some background information about LinMaaS is given before providing the details of data collection and analysis.

3.1. Case Description

The municipality of Linköping, Sweden, aims to become carbon-neutral by the year 2025, in line with the national climate targets for 2045. Linköping, a relatively scattered city, is the eighth largest urban area in Sweden, with approximately 115,000 inhabitants. Due to the fact that roughly a third of carbon dioxide (CO₂) emissions within the city come from the transport sector, the municipality aims towards decreasing trips by car from 60% today to 40% by 2030, and to achieve this goal, it seeks to provide more flexible modes of traveling. Since 2017, the municipality has developed ‘Green Travel Plans’ for seven different major workplaces in the city. In collaboration with municipal real estate companies and large employers (e.g., the city’s hospital, businesses at the Science Park, the local university), the municipality put forth an agenda and action plans to promote behavioral change towards more sustainable commuting and business-related travel. For example, investments were made to develop a more efficient public transport service (in partnership with the regional public transport provider), and to increase cycling infrastructures (i.e., bike lanes). In 2018, the Swedish Energy Agency and the Swedish association for business incubators and science parks (SISP) launched the ‘Sustainable Mobility-as-a-Service’ (SMAAS) competition. It was particularly focused on five Swedish cities, including Linköping. The winners of the competition would be introduced to potential partners (i.e., public authorities and private stakeholders that tender for mobility solutions), and the competition would be followed-up by a call for project funding to further accelerate the implementation of sustainable mobility services in Sweden—in the hope that the winners and potential partners would test their solutions. Early on, a workshop was organized with the largest carpooling organization in Sweden by the Science Park’s coordinator in charge of sustainability issues; the workshop was designed to increase carpooling among employees from the area’s businesses. Ultimately, the competition in Linköping’s Science Park was won in March 2019 by an IT startup for their solution called “On-demand Ridesharing for Commuters”.

After strengthening collaboration and building knowledge within the local mobility ecosystem for two years (concretized by the SMAAS competition), the coordinator of the “Sustainable Science Park” initiative, who was also employed at the municipality (cf. the Green Travel Plans), leveraged her network and collaborated with the aforementioned IT startup and the public transport company to declare a call for applications for an “accelerated market introduction of sustainable mobility solutions” from the Energy Agency in June 2019. Through LinMaaS, the municipality aimed to build a user-friendly digital infrastructure that would increase sustainable traveling for people in everyday life and aimed to achieve this in combination with the development of attractive mobility services. In particular, the objectives of the project were: to reduce CO₂ emissions in the local transport sector by reducing car ownership and car travels; to increase the equality, accessibility, and affordability of mobility within the municipality; and thus, to design and launch MaaS, and test it with 5000 users, as well as to ensure a long-term business model for the continuity of
the project. In December 2019, the municipality, along with an array of stakeholders in the ecosystem, obtained funding (SEK 6.6 million) from the Energy Agency, and the LinMaaS project was begun.

3.2. Data Collection

This study adopts a longitudinal case study from 2018 to 2021, based on interviews conducted between March 2020 and April 2021, and on documents dating back from April 2018 until February 2021. Precisely, data collection consisted of 24 semi-structured interviews with 18 key representatives from stakeholders (e.g., Chief Executive Officer, Chief Technical Officer, project manager, communication manager, traffic planner, parking manager, head of business development) within the LinMaaS ecosystem (Table 2) and involved a document analysis of workshop and meeting presentations, meeting minutes and notes, communication materials (i.e., press releases, website pages), and secondhand interview data, summing up to 1498 pages (see Appendix A). The semi-structured interviews were carried out with the aid of interview guides, which were adapted for each interviewee depending on their role and the organization they represent (see Appendix B). The purpose of interviewing was to obtain as much, as specific, and as useful information as possible. Questions were kept open and flexible to inspire respondents to elaborate on their experiences, which allows for new insights to be pursued [70,71]. The initial round of interviews was conducted in March 2020, shortly after the LinMaaS project was launched, and a second round of interviews was conducted from February–April 2021. All interviews were conducted online by at least two interviewers; they were later recorded and transcribed verbatim resulting in 177 single-space pages). In the interests of privacy and security, this article has been written so as to assure interviewees cannot be easily identified from quotations; thus, generic titles were given to interviewees related to the organization they represent. This implies that, for instance, a ‘municipal planner’ could be an expert in parking or an environmental coordinator.

| Organization                                      | Interviewee *               | Involvement | Interview #1 | Interview #2 |
|---------------------------------------------------|-----------------------------|-------------|--------------|--------------|
| Municipality                                      | Municipal planner 1         | Continuous  | 56 min       | 75 min       |
|                                                   | Municipal planner 2         | Minor       | -            | 22 min       |
|                                                   | Municipal planner 3         | Minor       | -            | 51 min       |
|                                                   | Municipal planner 4         | Minor       | -            | 39 min       |
| Municipal real estate company, which operates parking in the municipality, and the e-bike sharing system | Parking company 1           | Continuous  | 20 min       | 44 min       |
|                                                   | Parking company 2           | Continuous  | 15 min       | 53 min       |
|                                                   | Parking company 3           | Continuous  | -            | 41 min       |
| Public transport company offering bus and train services in the region | Public transport 1          | Until Mar. 2021 | -     | 28 min       |
|                                                   | Public transport 2          | Until Mar. 2020  | 17 min       | 57 min       |
| Peer-to-peer (P2P) carsharing startup              | Carsharing startup 1        | Continuous  | 33 min       | 56 min       |
|                                                   | Carsharing startup 2        | Minor       | -            | 43 min       |
| IT startup providing MaaS technological infrastructure | IT startup 1               | Continuous  | -            | 63 min       |
|                                                   | IT startup 2               | Until Feb. 2021 | -   | 47 min       |
|                                                   | IT startup 3               | Continuous  | 30 min       | -            |
| Municipal housing company                         | Housing company 1          | Until Mar. 2020  | 18 min       | 48 min       |
|                                                   | Housing company 2          | From Mar. 2020  | -            | 37 min       |
| Science Park                                      | Science Park               | Minor       | 20 min       | -            |
| MaaS consultancy                                  | MaaS consultant            | Minor       | -            | 54 min       |

* The information displayed in this table has been anonymized.

While mainly employing semi-structured interviews as research material, multiple methods of inquiry and diverse sources of data were also used to enrich our understanding and to triangulate our interpretations of the case study, which increases the trustworthiness
and validity of our results [68,69]. The latter included codes such as “business model,” “integration,” “uncertainty,” etc., whereas the former included codes such as “sustainability logic,” “state logic,” and “market logic.” The identified codes were later recursively read in relation to one another so that patterns in the overall material could be discerned [69,72].

4. Analysis and Discussion

Institutional logic theory highlights that certain dominant logics can overlap, resulting in tensions within organizations or between ecosystem stakeholders. The analysis reveals particular points of tension pertaining to project stakeholders’ different logics in terms of: (1) finding a common vision for the LinMaaS project and its scope, (2) establishing a sustainable business model, (3) triggering a behavioral change regarding car travel, (4) being able to find one’s role within such a MaaS project and to consequently collaborate with other stakeholders in such roles, and (5) managing uncertainty through testing and experimenting innovative solutions and learning about MaaS and the shared mobility ecosystem at large.

4.1. Vision and Scope

One of the interviewees said that “LinMaaS is going to be one of the biggest things that has ever happened in Linköping. […] I think it can be revolutionary” (Housing Company 2, 2021). As stated in the project funding application (2019), the initial vision for LinMaaS was to create an app combining a large diversity of mobility services into a single interface, listing eight services: public transport, bike sharing, Peer-to-peer (P2P) carsharing, Business-to-consumer (B2C) carsharing, on-demand responsive transit shuttles, e-scooters, autonomous buses, and taxi pods. In Sweden, regions are responsible for public transport while municipalities are responsible for car parks, permits (e.g., for e-scooters and e-bicycles), and infrastructure (e.g., space to park e-scooters, bike lanes). As such, the responsibility for mobility is shared between regions and municipalities. The project of implementing MaaS in Linköping raised a question of ownership, i.e., who should be responsible for operating the app? In line with the state logic, the local stakeholders in the mobility ecosystem who were involved early-on assumed that the municipality itself should take responsibility for LinMaaS, since it was aimed to be based on public transport services, though with additional and complementary mobility services combined.

However, for the municipality to take ownership, support was required from the municipal and regional politicians, “who are usually quite inflexible” (Municipal planner 2, 2021). Therefore, the project stakeholders evoked different ideas to convince politicians. For example, some interviewees thought that the size of Linköping (i.e., mid-sized for Swedish standards) would be a good and relevant argument, as it would enable quicker decision making and would thus allow for faster progress for the project. However, within the framework of state logic, tensions about serving public interest and the role of the car within the mobility ecosystem were prominent due to opposing political positions. Some interviewees from the municipality and from real estate companies mentioned that politicians who have run the municipality have “embraced the car” and are not in support of measures restraining driving and car ownership, whereas others were in favor of alternative mobility modes, and were positive about the potential of LinMaaS. For example, municipal planner 2 stated that “they want us to be modern and forward-looking in our provision of travel services.” This is in line with previous MaaS projects, such as UbiGo, whose CEO declared that “cities and municipal counselors are rather in favor of MaaS projects, while public transit authorities are less easy to convince, as they have a monopoly” and that “it is more about policy than about technology. It is a long-term project so I can hardly imagine a ‘global MaaS service,’ but rather local franchises.” [25] (p. 10).

When the LinMaaS project was revealed, the presentations at the public kick-off of the project’s overall vision and proposed timeline indicated that the initial aim for LinMaaS was to launch the app as soon as possible. However, the interviewees agreed that this ambitious scenario was rapidly revised, as it appeared to be too challenging for two main
reasons: some of the mobility service providers were not onboard at the time and they needed to be further convinced to participate, and secondly, those already onboard faced technical integration issues (i.e., API’s development was not ready). It comes to light that there was a significant gap between the municipality’s goal for the project, and what was feasible from the mobility providers in the dedicated period. Particularly, stakeholders from the public sector wanted to launch LinMaaS as a complete platform with all the services fully integrated, as they feared that customers would not understand or appreciate the full value of LinMaaS otherwise. Customers’ knowledge regarding MaaS is generally very low; hence, service providers should aim to simplify customers’ daily lives as much as possible [10]. For example, according to a representative from the municipal housing company: “When we launch this, it is very important that LinMaaS is filled with the service; in other words, a wide range of services that attract as many people as possible” (Housing Company 2, 2021). Even before any mobility service was ready to be integrated, the municipal real estate company that had been decided as the future owner of the app prepared a contract draft for future mobility service providers to join the app.

Representative of the market logic, the private sector stakeholders onboard did not have the financial or technical capabilities to deliver the project’s completion and did not initially understand the potential of integrating their services into MaaS from the start. A representative from the aforementioned IT startup, responsible for integrating all mobility services on one platform, said that: “Customers are afraid of launching something that is not the full product. But if you want to get the full product with all the services in place, then you need to wait for five years.” As a result of discussions between the IT startup and the public stakeholders, a few months after its beginning, the scope of the project adopted a phased approach. This translated into initially launching a beta-version of the app with a limited amount of mobility services and functionalities included: only three mobility services (i.e., public transport, bike sharing, e-scooters), and only the ability to view vehicles from P2P carsharing, without the possibility to book them from the app. This was explained in the IT startup’s documents, providing guidelines, a wish list, and a to-do list of tasks. The documents indicated a plan to launch this preliminary version of the app in June 2020, while being able to scale the app up later. One representative from the IT startup presented the new approach as “that you first launch it like a trip planner, a multi trip planner where you see all the services, but the booking is a complicated thing and it requires all kinds of APIs. [. . . ] We need to have a budget for it, they need to invest in it” (2020).

Moreover, LinMaaS initially intended to develop a platform that could be used by the rest of Sweden. This would represent Linköping as an innovative and attractive city, where Linköping would “show the way for the rest of Sweden,” as stated by municipal planner 1. This idea was in line with the IT startup’s involvement in other Scandinavian markets, and this ambition was well-matched with the app’s potential to scale out to other municipalities (cf. the Nordic Mobility Innovation Platform guidelines established with UbiGo, among others). While the objective of establishing standards for faster integration and replication onto other markets has held onto, several interviewees reflected upon the overly wide scope of LinMaaS: “We were too ambitious I think, to begin with. We looked more or less at a product for the whole of Sweden. We should have been content to look at what our customers in Linköping want [. . . ] We may no longer believe that people in the region will change vehicles so much” (Parking Company 2, 2021).

Ultimately, several challenges were faced by the project stakeholders during spring 2020, which delayed their planned launch of the beta version— a long shot from providing a MaaS solution that could be adopted by the whole of Sweden. This was partly due to the COVID-19 pandemic and the related restrictions from the ministry of health, which made it difficult to run such an innovation project. A lot of the activities were put to a standstill, and this had negative consequences for the development of LinMaaS. For example, the stakeholders in the ecosystem became unable to gather data on users; as one representative from the P2P carsharing startup reflected on the lack of feedback: “The hope is that we can
test it for real and see what we can get out of it because we don’t really know yet. We have not launched yet, so we would like to collect data and see what happens” (Carsharing startup 2, 2021).

The major drawback caused by the pandemic concerns the IT startup. Despite being involved from before the project start (cf. SMAAS competition), the IT startup faced considerable financial constraints, and was consequently forced to step out of their roles of technical integrator and platform provider. This implied that the LinMaaS project stakeholders had to discuss the initial vision and scope and find a solution to replace the IT startup without altering the progress made on the API integration and the business model. Currently, while the project is still on hold due to the pandemic, discussions have focused on enlarging the geographical scope of the project from a municipal MaaS to a regional MaaS. The vision of developing a MaaS solution that could be used by other cities in Sweden is also being reconsidered. For example, municipal planner 1 stated: “We tried to build it so that everyone could join and use the app. Now with [the public transport company] as our regional partner, it will instead be MaaS services within [their] app. So, if Kiruna and Västerås want our MaaS solution in future, it won’t be possible because we are locked into [the public transport company] and their functions.” (2021)

4.2. Business Model

Similar to any commercial venture, the business model is an important part of LinMaaS, as it determines the value created and captured by LinMaaS. The business model is mainly rooted in market logic, but it is also one of the areas where several logics, such as state, service, sustainability, and experimental logics, intersect. To understand this further, some key business model aspects such as value propositions, revenue streams, and target customers are considered to analyze the business model of LinMaaS.

As the foundation of a business model, value propositions are concerned with the problems that LinMaaS intends to solve; in other words, the value that will be created through its establishment. LinMaaS promises value at various levels for both private and public stakeholders as well as the customers who are the intended users of the service. Within the state and sustainability logics, it is assumed that LinMaaS will improve citizens’ lives by introducing more convenient travel modes, reducing pollution from car emissions, and creating space for alternative activities and mobility modes in the city instead of constructing roads. Stakeholders in the public sector, such as those working within the municipality, see LinMaaS as a way to reach their environmental and socio-economic goals, as the interviewees speak of their desire to ease mobility through providing a wide range of solutions that customers can choose from for their daily mobility needs. On the other hand, in line with market logic, the stakeholders in the private sector, such as the P2P carsharing providers, see opportunities to profit from the utilization of redundant resources and from creating new markets for their services by providing alternative travel modes to customers.

Since LinMaaS is not aimed to solely be financed by public subsidies, it is important to consider sources of revenue that will help to run it—especially during its initial phase. During the initial development of the platform, funding from the Swedish Energy Agency was fundamental. However, as presented in the draft of the business model proposed for discussions, LinMaaS is not expected to turn any profits for the first five years. The MaaS consultant in the project also highlighted that, as a new venture, they “count on zero revenues for the first five years since the service will not yet be big enough,” and that they would need to “start elaborating with new business models and prices after the fifth year” (2021). Moreover, sharing revenues between the different services (when some are publicly funded and others are private) is a complicated matter, and this creates less flexibility, since public transport is subsidized. This is explained by the opposing state and market logics, respectively embedded in the mindsets of the public and private sectors’ stakeholders [24] (p. 119). Therefore, alternative sources of financing are vital, especially to support the startups involved in the project such as the IT provider and the P2P carsharing platform, which needs to adapt its API for integration.
A novel way of financing LinMaaS is through the so-called ‘mobility purchase’, which implies that, rather than spending money on constructing parking lots, real estate and housing developers could subscribe to MaaS and make it available to their tenants. Similarly, large employers of the region could subscribe to MaaS for their employees who need to commute or travel to work instead of said employers owning and maintaining a fleet of business cars. For housing developers in Sweden, parking has been central in the marketing of their accommodation offers; however, constructing parking lots is expensive. LinMaaS stakeholders believe that one such housing developer should be able to connect MaaS services to property owners’ demands, and so tenants renting the properties could benefit from an access to MaaS through an allocated lump sum (i.e., subscriptions) per household. LinMaaS’ project coordinator, who works with urban planning at the municipality level, stated that involving real estate companies and large employers in the region through mobility investment would constitute a long-term revenue stream to support the development costs of LinMaaS. Moreover, subscribing to MaaS would be cheaper than constructing and maintaining parking lots, which, in turn, may imply lower rent for tenants. This would additionally contribute to reducing the space allocated to parking within the municipality, as well as reducing the number of privately owned cars.

However, this business model is based on several assumptions regarding the number of real estate developers that will opt-in to the concept of mobility purchase. Moreover, stakeholders have discovered during the LinMaaS project, that legally, they cannot include such subscriptions to LinMaaS as part of the rent of public housing. A representative from the public housing company stated that, as much as MaaS is an opportunity for their tenants, the company must make it clear to the other stakeholders in LinMaaS that it is not possible for them to include a MaaS subscription in their tenants’ contracts, since current regulations state that each tenant should be able to decide whether they want to pay for MaaS or not. Hence, the question as to how many people would be willing to pay for LinMaaS still lies with the target customers.

The early presentations of the project before it had officially begun development highlight that LinMaaS’ initial target customers were users of the Green Travel Plans. There were different ideas about what customer segments to approach, ranging from early adopters to commuters at major employers and car owners in socio-economically strong suburbs (cf. the project application to the Swedish Energy Agency). These different segments require different communication approaches. While business customers can be aligned by Green Travel Plans, marketing campaigns are required to attract individual customers. Nevertheless, a major concern remains: only a small portion of the project budget was allocated to marketing communications (i.e., 3% of the total funding was dedicated). With this action, the sustainability logic overrode the market logic in the project. This in and of itself was seen as a risk, as one of the interviewees referred to other projects that failed due to a failure to create enough marketing to reach their target customers. This fear is in line with Sochor et al., whose study on UbiGo showed that environmental sustainability was merely a bonus and not an incentive for the use of shared mobility for customers [21]. This further indicates that LinMaaS is not directed to an existing need among residents, which traditionally has been the case when providing public transportation. Taking part in the value creation process can be one of the advantages of service logic to customers [65,66]. Hence, failure to involve the customers at this stage in LinMaaS diminishes the stakeholders’ opportunities to influence value fulfillment of their customers.

4.3. Influencing Travel Behavior through LinMaaS

A core principle of LinMaas is the reduction of the environmental impact of traveling. For example, one interviewee put it as the following: “We want to have [a] green, sustainable city; nice areas, no air pollution, less crowded roads” (Municipal planner 1, 2020). The focus on sustainability, CO₂ neutrality, and reduced parking space has not changed throughout the project. Sustainability connects values regarding complying with national policies
for sustainable development and with utilizing legitimate means to plan the city to suit the state logic. A focus of LinMaaS has been to reduce car traffic in order for the city to match local and Swedish environmental policy goals. By producing an attractive integrated mobility service, the stakeholders expect residents to reduce the use of their private cars, and eventually to abandon car ownership. This is further expected to lead to improved health and social sustainability, as people walk and use bicycles rather than travelling by car. Nevertheless, municipal planner 2 stated: “In Linköping, most people think the car is the solution to every travel. [ . . . ] They cannot see any advantages at all by going by bike or public transport. [ . . . ] So, we must change people’s minds about that” (2021). The ambition to get residents to change the way they travel by car towards LinMaaS included the identification of scenarios wherein people would be most likely to change their travel behavior and mobility patterns. Based on the public transport company’s identification of different customer profiles (i.e., so-called ‘personas’), which mark individuals’ travel needs and psycho-demographic characteristics, the project’s stakeholders identified groups of people whose travel behaviors could easily be influenced by LinMaaS, such as those moving to new residential areas or new workplaces, as well as younger people and students who have not yet established mobility routines by car. This way, these demographics can create both the market and the need for combined mobility services, which is another example of a difference from public transportation’s logic of satisfying existing needs. Similar to Berglund-Snodgrass and Mukhtar-Landgren’s discussion on the use of legislation to place demands on private stakeholders [29], in the LinMaaS project, the stakeholders in the public sector believe that they can influence people’s travel behavior by enforcing laws and practices to nudge behavioral change. The interviewees referred to their mandate for urban planning fitting the state logic, stating that the municipality has the possibility to benefit LinMaaS by making it harder to travel by private car through increasing the price of parking tickets. However, the stakeholders failed to realize that, in order to change their travel behavior and to reduce car ownership, customers require personalized travel experiences in alignment with their beliefs and interests [9]. Therefore, for LinMaaS to be successfully adopted by the municipality’s residents, and for a drastic change in travel habits to be trigged, numerous factors should be considered.

However, stakeholders seem to have differing views on what sustainability is and how effective the various services within LinMaaS will be in creating the path towards sustainability. The contribution of some of services (such as taxis and e-scooters) towards sustainable mobility has been questioned. One of the interviewees stated that e-scooters often replace walking, while the bikes may replace slightly longer trips by car. When an e-scooter replaces a walk, the stated health benefits are lost. According to Hollingsworth et al., who conducted a study based on a life-cycle analysis (LCA), using e-scooters produces more CO₂ emissions per passenger than traveling by bus, by (e-)bike, or by walking [73]. Moreover, the same study from North Carolina University shows that if e-scooters did not exist, people would have biked or walked. Even if benefits (i.e., increased use of public transit thanks to riding e-scooters) are not addressed in such an LCA, the study showed that e-scooters are more likely to substitute mobility by bus, bike, or walking, rather than enabling mobility at all.

Another interviewee argued that riding a combustion engine taxi might not be a viable choice, but it is still better than owning a car that is using parking space. An interviewee from the carsharing service stated that their main aim was to “solve the issue of wasting resources as a result of the cars that are underutilized and parked most of the time since they are not being shared” (Carsharing startup 1, 2021). This market logic regarding the car comes in stark contrast to the sustainability and state logics. This reinforces the discussion in Haffar and Searcy, wherein the authors discuss how organizational logics shape decision making [57]. Even in LinMaaS, it was noted that companies perceive tensions differently depending on their underlying logics, i.e., stakeholders in the private sector with an underlying market logic see a business opportunity in MaaS, while those in the public sector with an underlying state logic see an opportunity to improve people’s lives. While
some stakeholders believed LinMaaS would counteract future struggles of urban spaces by reducing car traffic (leading them to encouraging the creation of space for other mobility modes), other stakeholders were more cautious, as one of the respondents stated that: “When there are more and more different types of means of transport—cyclists and pedestrians and scooters and everything, they also require space in the streets” (Parking company 3, 2021). The problems with private car use and parking that LinMaaS aims to solve via experimenting with a variety of attractive and sustainable mobility can thus be a point of tension.

4.4. Collaboration and Stakeholders’ Roles

The key stakeholders in LinMaaS are from both the public and private sectors. Perspectives on MaaS among stakeholders can differ depending on whether they are a public or private entity, as well as on their role in the MaaS initiative [5]. Core issues in the ecosystem have historically been related to contracts and product ownership, which in turn regard roles and responsibilities among the stakeholders. The project coordinator was identified by all interviewees as key for driving and guiding the LinMaaS project. The coordinator herself stated that had it not been for her interest, LinMaaS would not have developed as fast as it did. The project coordinator had experience in sustainable mobility, and thus played a key role in creating the vision for LinMaaS. She also had experience with different logic forms, from both the municipality and the science park paradigms, and she is thus an ‘institutional entrepreneur’ who can interpret and evaluate these logics across institutions [30]. This work can in turn contribute to changes in the meaning of these logics [30]; this is true particularly because MaaS is a novel form of organizing transport and mobility beyond traditional bureaucratic practices.

However, during the establishment phase of the project, the stakeholders struggled to find and settle into their roles, which created delays in the project. Public transport has been described as a backbone of MaaS, which hence put public transport providers at the center of LinMaaS. However, these public transport providers struggled to understand their role, and were initially insecure about their position in LinMaaS. With time, however, it was noted by the project coordinator that they became more comfortable and were prepared to take on larger responsibilities in the project.

The interviewees expressed concern about the amount of energy that was required for introducing new stakeholders into the ecosystem, or how detrimental it could be when an enthusiastic CEO was replaced by a person who did not see LinMaaS as their responsibility, hence slowing down the progress. Collaboration across organizations with different worldviews can influence roles and responsibilities, and in cases where stakeholders’ roles are not clear, the lack of clarity itself can be perceived as to failure to collaborate. Such challenges in collaboration among shared mobility service providers working together can cause fragmentation in the transport system, making the smooth combination of different transport modes difficult [20]. Even though there have been no direct conflicts within LinMaaS, the stakeholders had diverse levels of engagement and commitment to problem solving. One of the interviewees stated that it became tiresome when stakeholders waited for directives rather than acted innovatively.

When the collaboration within the project was initiated, there were many initial obstacles, as the stakeholders realized that establishing MaaS would be very tricky regarding technical solutions. It required a changing and updating of the software, services (which were not ready for interoperation), and systems (that crashed or simply did not exist). There was also an initial reluctance from the public transport company, which was in the process of implementing changes in their own system; hence, the timing was not ideal. There was also the question of whether every stakeholder would benefit from the collaboration or if internal competition would arise. Some stakeholders felt that some of the “big players” did not want to be integrated because they wanted their users on their own apps in order to maintain control of the customer journey. Early discussions regarded the question of how to make money out of mobility services, with many stakeholders struggling during that period to even get by financially, even if they held optimistic outlooks for the future: “We
think that it is better we do things together and make this a billion-dollar sector in Sweden than a smaller market. I mean if we could collaborate then we could address the whole market” (Carsharing startup 1, 2021). Whereas some stakeholders were eager to create a successful venture, with promising projected economic returns and the hope to address the entire Swedish market through collaboration, the same market-related optimism was not expressed by the stakeholders from the public sector, where transport is subsidized by taxes and there is no focus on profit. While stakeholders in the public sector are more concerned about serving the public good, those in the private sector also must consider commercial aspects such as competition and profit margins.

The service logic focuses on convenience, ease, and user-friendliness in mobility. It includes different arguments as to how to encourage users towards LinMaaS. Furthermore, by this logic, what users should pay for such combined mobility service is connected to the business model and revenue. Service-motivated stakeholders took stances towards arguments that had been presented in the collaboration, like whether it would be possible to compare what it costs to own and use a private car, and who should pay for the added value. They argued that the service must appear convenient and easy to use, and the users should not be burdened with unnecessary expenses. The cost for LinMaaS should not exceed that of an individual public transport ticket, as excessive prices could delay users from changing their mobility patterns (away from the use of cars). Since LinMaaS is expected to be both easy to use and exist for all users, the service logic and state logic can intersect.

4.5. Handling Uncertainty: Experimenting, Testing, and Learning

The experimental logic is embedded in testbeds and within the aim to create innovative services. This logic form, in this context, seeks to present Linköping as a creative municipality for business establishments and new residents. This was one of the driving forces behind LinMaaS: “We really wanted this to breathe novelty, innovation; something smooth” (Parking Company 3, 2021). Such an image is part of city branding, or the goal of making the municipality outwardly attractive. The interviewees referred to the municipal slogan ‘Linköping, where ideas come to life.’ Initially, there was a fear that such a shared mobility project involving two municipally owned (public) companies operating parking and e-bike services might produce a dull output of MaaS. Thus, more service providers from the private sector were invited to join LinMaaS, including the providers of e-scooters, P2P car-sharing, and the autonomous bus service—though the latter, although mentioned in early project presentations, has not yet be integrated. Stakeholders have stated that they wanted LinMaaS to be novel and innovative. This is in line with the work of Berglund-Snodgrass and Mukhtar-Landgren, who stated that since experimental logic is embedded in testing, learning, and innovation, effort is put into finding novel solutions, rather than into more traditional solutions [29]. Moreover, Vickers et al. identified innovation in the public sector as one of the ways of addressing complex societal problems. Hence, implementing innovative services into LinMaaS would be valuable to the project [37].

The system’s development in a neighborhood in the city is described as the use of a testbed; with this, LinMaaS employed a slogan focusing on sharing and innovation. One method of encouraging residents in this area to change mobility patterns from cars to bicycles was described as involving the improvement of bicycle services, such as bike-washing facilities and parking spaces for cargo bicycles. Stakeholders believed that providing people with an opportunity to test innovative mobility services such as electric bikes would hopefully encourage them to use these services more often and would thus reduce car trips. The sustainability and experimental logics are closely related here [37].

Tendering a MaaS platform and service, which includes in its design innovative technology, requires knowhow. To implement LinMaaS, stakeholders were dependent on the IT startup and its members’ competence, and there were grand expectations for what they would provide. The IT startup maintained that they were not offering consumer service, but software and technical expertise. Before the sustainability competition, the
technical requirements for LinMaaS were specified as: open APIs, future flexibility to develop the app, payment methods for the app’s offered services, and an array of city maps. The IT startup was impressed by the ideas in this vision for MaaS stating that: “It wasn’t just public transit with some added digitalization. [The project coordinator] and the rest of the stakeholders were actually envisioning as many mobility services as possible” (IT startup 1, 2021).

Some uncertainties arose along the way, however. Interviewees expressed what arguments they believed would be useful to convince city residents to start traveling by this novel service, or “dare to try it,” as one interviewee said; however, from these arguments, some of the early uncertainties encountered during development become self-evident. Specifically, interviewees acknowledged that the delayed launch of LinMaaS would create a challenge in getting potential users; interviewees further admitted that it would be difficult to explain what MaaS is or to imagine it.

Experiments are also considered useful for the creation of learning opportunities for the various stakeholders involved, as they allow for knowledge sharing among stakeholders and for reflection upon the results obtained [29,60]. Throughout this process, the stakeholders have emphasized that they learned a lot both from and with other stakeholders; such knowledge can be implemented later in development. Learning taking place between stakeholders who operate on different logics highlights that the project has not only had points of tension but that lessons have also been derived. Nearly all of the interviewees stated that their participation in MaaS was a learning process for them, and one emphasized that what was important was the distribution of learning experiences in the MaaS community.

Among the knowledge developed by stakeholders, one insight that appeared during the project is the character of the city. The size of Linköping might be a limiting factor, since users do not require the combining of several different mobility modes in a single journey, as was the case in UbiGo, for example. Similarly, the size of the city and the number of app users was something that the collaborating P2P carsharing company reflected on, stating that: “This type of service is more useful in larger cities, so it was a bit of a gamble to start expanding into Linköping” (Carsharing startup 1, 2021). Stakeholders from different institutional logics thus made a similar evaluation of the character of the city. This is an example of learning across logics.

5. Conclusions

The aim of this study has been to identify the different institutional logics within a MaaS ecosystem. Using the lens of institutional logics, the formation process of LinMaaS was investigated while analyzing tensions both at various stages of development and between various stakeholders throughout the course of the project. Studying MaaS with institutional logics implies the addressing of trade-offs, tensions, and collaborations, as well as the way in which some actors become institutional entrepreneurs. Five dominant logics were identified: State, Market, Sustainability, Experimental, and Service logics (see Table 3). This has enabled a better understanding of how collaboration within LinMaaS unfolded and allowed for the explanation of how these institutional logics at play transfigured in tensions during the project’s development. Different logics are involved in outlining the scope and vision for the MaaS project, for example, regarding users: the state logic and service logic aims the project at all residents; the sustainability logic includes cutting emissions and making commuters change behavior from private car use to shared mobility services; the market logic seeks to amass new customers, harvest data, and achieve a share of the predicted billion-dollar MaaS industry, cf. [19]; the experimental logic seeks to present the city as attractive and innovative; and the state logic relates to urban planning.

As shown in Table 3, there are multiple logics at play for each stakeholder involved. The state and sustainability logics are prevalent among stakeholders in the public sector, while stakeholders in the private sector mainly operate under market and service logics. Surprisingly, the experimental logic, which is vital for innovation and the solving of complex problems, is only exhibited by stakeholders in the public sector. This can be
attributed to the fact that experimentation also requires an abundance of funds, which is often more accessible to stakeholders in the public sector. Nevertheless, as much as the existence of multiple logics amongst the stakeholders was at times a cause for tensions, this did not deter collaboration amongst stakeholders with different logics as tensions were resolved. More importantly, this process resulted in learning experiences for each stakeholder as the project progressed.

| Table 3. LinMaaS stakeholders’ dominant logics. |
|-----------------------------------------------|
| **State Logic** | **Market Logic** | **Sustainability Logic** | **Experimental Logic** | **Service Logic** |
| Municipality | X | X | X |
| Municipal real estate company | X | | X |
| Municipal housing company | X | X | X |
| Public transport company | X | | X |
| IT startup | X | X | |
| P2P carsharing startup | X | X | |

5.1. Practical Recommendations

Implications for future MaaS developers to consider can be derived from this study. First, the difficulty in designing a sustainable business model that is attractive enough for mobility providers to join is a core issue that has proved central. As service providers in the private sector are interested in profitability, a sustainable business model also implies longevity and the creation of opportunities for value capture. In the LinMaaS project, the stakeholders’ efforts towards a sustainable business model proved futile as they failed to include a wide range of shared mobility services. For example, the carpooling service that was initially involved in the Sustainable Science Park initiative has not been invited to participate in the LinMaaS project.

Second, MaaS initiatives involving both private and public sector stakeholders are unlikely to register profits within their first five years, especially since stakeholders in the public sector often lack the market form of logic. Thus, alternative financing that can facilitate the operation of MaaS initiatives during their unprofitable periods is crucial. The stakeholders in LinMaaS devised mobility purchase as an alternative source of financing; however, they failed to account for the extent to which property developers would be convinced to join LinMaaS. Thus, when devising novel and alternative forms of financing, future MaaS developers should critically assess their ideas in order to ensure that said ideas are viable enough to facilitate the MaaS initiative.

Third, the stakeholders involved in a MaaS initiative play a key role in its formation and operation. Therefore, stakeholders’ enthusiasm and involvement in managing/resolving tensions in MaaS ecosystems is key. Having clear leadership and a clear focus on the key roles of each stakeholder during the formation process minimizes uncertainties and slack, thereby ensuring the timely development of activities. The fact that it took the stakeholders of LinMaaS some time before settling into and understanding their roles was a cause for delays in the project which could have been minimized.

Finally, communicating the MaaS idea through marketing campaigns to the intended customers is important to enable them to understand its long-term vision. Since MaaS is still a fairly new concept, most potential customers may not easily understand its purpose and may thus need to be given adequate information to achieve the intended results, especially in terms of changing travel behavior patterns. In the case of LinMaaS, this was another example where the sustainability logic overrode the market logic, as the stakeholders in the public sector assumed that the environmental benefits of MaaS would be enough to attract people to use the service.

5.2. Future Research Avenues

Based on this case study of LinMaaS, institutional logics among stakeholders working together in an ecosystem could be discussed. Future research can be directed towards
deeper analysis of how multiple and hybrid logics influence decisions regarding the design of integrated mobility services. Beyond this, more case studies on the interplay between institutional logics in MaaS initiatives from other markets are a valuable contribution to the discussion. A quantitative approach to data collection could further enable an estimation of the relationships between institutional logics. Considering that transport and mobility legislations differ across nations, it would be valuable to compare MaaS initiatives between Nordic countries. Considering that shared mobility is constantly evolving to encompass new and innovative services, new roles and responsibilities arise. Hence, the ways in which institutional entrepreneurs manage or resolve tensions in MaaS ecosystems with different logics can also be explored further, particularly as MaaS are novel ways to organize mobility that may destabilize roles. Since MaaS requires technological know-how about issues such as API integration, the role of technical providers can be studied further.

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**Appendix A. Examples of Documents Analyzed**

| Document | Description | Pages |
|----------|-------------|-------|
| The municipality’s press release “Nytt multireskort ska få ännu fler att resa hållbart” (April 2018) | Announcement about the test project in the winter of 2017–2018 called the “Multi-Travel Card,” offered to residents of a new neighborhood in Linköping. It can be considered the beginning of MaaS in Linköping. It involved the public transportation company, the municipal parking company, and a carsharing company. | 2 |
| The Swedish Energy Agency’s press release: “New innovation competition seeks world’s best mobility solutions” (October 2018) | Presentation of the Sustainable Mobility-as-a-Service (SMAAS) competition, initiated by the Minister for Policy Coordination and Energy in the framework of “A Challenge from Sweden” (co-developed by the Swedish Energy Agency, and Swedish Incubators & Science Parks)—three winners would share a prize fund of EUR 150,000. The Swedish Energy Agency also announced that it will be launching a call for project funding after the competition winners are announced in 2019. | 2 |
| The public transportation company’s “Personas” (November 2018) | Presentation of four customer profiles based on different travel needs and psycho-demographic characteristics, identified by the public transportation company—which are used as input to the design of Linköping MaaS. | 10 |
| SMAAS Video presentation (February 2019) | Presentation of Linköping’s participation in the SMAAS competition—recorded on video. Different local stakeholders involved (e.g., the Science Park, the municipal housing company, the public transport company) describe their motivations for participating in such projects, and their future hopes concerning shared mobility in the city/region. | N/A |
| The Swedish Energy Agency’s call for applications for MaaS: “Var med och testa hållbara mobilitetslösningar för en snabbare marknadsintroduktion” (March 2019) | Call for funding (max SEK 15 million) for an accelerated market introduction from the Swedish Energy Agency inviting actors from the sustainability and innovation sector to test and develop MaaS projects between Nov. 2019 and Dec. 2020. Project goals should include digitally combining diverse mobility services in one user-friendly platform for daily travel needs, collecting feedback from at least 5000 test-users and designing a sustainable business model that makes such MaaS trials scalable. | 17 |
| Document                                                                 | Description                                                                                                                                                                                                 | Pages |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Nordic Mobility Innovation Platform (NMIP) report (April 2019)           | A report that shows how the IT startup and other mobility actors from the Nordic countries (e.g., UbiGo), are engaged in establishing common and open technological and commercial standards for MaaS, enabling roaming between MaaS operators (i.e., MaaS users being able to use the same app between locations). | 37    |
| “Linköping MoU” (May 2019)                                              | “Memorandum of Understanding” between the core actors of LinMaaS (i.e., the municipality and municipal companies, the IT startup, and the public transportation provider)—a document that formally concretizes the respective actors’ interest in applying to The Swedish Energy Agency’s call for funding. | 2     |
| LinMaaS project presentation (June 2019)                                | Presentation prepared by the project coordinator for the pre-application workshop at the municipality. It shows the application draft in terms of project objectives, actors already involved/interested, other potential partners, structure of governance (ownership, core group) and contracts, timeline (Nov. 2019–Jun. 2021) and milestones, as well as 10 working packages. It identifies the municipal real estate company as the future owner of LinMaaS and thus the leading organization in the project. | 14    |
| “Bilaga 1_MaaS_ecosystem_plus projektororganisation_Linköping” (June 2019) | Application appendices to the Swedish Energy Agency’s call, showing the project ecosystem of actors and the governance structure. Stakeholders are differentiated between “Main partners” (i.e., the municipality, IT startup, municipal real estate and housing companies, public transportation companies, and the Science Park), “Mobility providers”, “Partners” (e.g., research institutions and regional authorities), “Private sector employers”, “Learning partners” (i.e., other municipalities), and “Related initiatives”. Two project leaders/coordinators are also identified. | 3     |
| “Genomförande Linköping MaaS_rev” (November 2019)                       | Detailed content, timeline, budget, and actor’s involvement/responsibilities for the 12 work packages for LinMaaS: 1, Start-up phase (5% total budget); 2, Service Design (6%); 3, Marketing (3%); 4, Prepare the IT startup’s integrated platform for Linköping (8%); 5, Integration with the public transportation company (6%); 6, On-demand ridesharing deployment (e.g., DRT services) (8%); 7, Integration of P2P carsharing (24%); 8, Integration of rental vehicles (e.g., e-bikes) (10%); 9, Integration of parking other mobility services (e.g., “park & ride” routes) (6%); 10, Evaluation (10%); 11, Operation of Linköping MaaS (7%); and 12, Knowledge building and user engagement (7%). | 5     |
| Application decision (December 2019)                                    | Project grant approval from the Swedish Energy Agency stating, that SEK 6.3 million is provided in support of the implementation of LinMaaS between Dec. 2019 and Jun. 2021. It indicates how the funding is shared between the project stakeholders: IT startup (42%), P2P carsharing (21%), municipality (13%), research institutions (16%), municipal real estate company (4%), public transportation company (3%), Science Park (1%), and municipal housing company (0%). | 15    |
| P2P carsharing startup’s press release (December 2019)                  | Press release about LinMaaS being funded, in which the P2P carsharing startup’s CEO highlights how LinMaaS constitutes a way of distinguishing Linköping from its current geographical area. | 2     |
| 6 Marketing Project Reports (January 2020)                              | Student reports (6) from a Master’s course (autumn 2019) in marketing at Linköping University, where primary data (surveys and interviews) from consumers were collected and analyzed to better understand their needs and expectations, the customer satisfaction criteria and loyalty drivers, and the barriers of adoption for car sharing services, e-bike services, public transport services, e-scooter services, and MaaS in general. | 168   |
| Document Description | Pages |
|----------------------|-------|
| Presentation prepared by the project coordinator for the internal kickoff—attended by representative(s) from all project’s stakeholders (cf. pre-application workshop, June 2019). The presentation provides a summary of the history behind LinMaaS (e.g., the SMAAS competition), the vision that the project aims to achieve (i.e., “from motorist to multimodalist”), a presentation of the project goals, partners, key learnings from IDEO’s (2018) report (i.e., customer segments), the 12 work packages, and the potential branding (i.e., “LinGo”). | 54 |
| Project kickoff minutes that highlights what has been discussed and decided by the kickoff meeting participants: the particular relevance of developing a long-term business model so that LinMaaS continues to operate after the project ends; the interest from other cities (Dublin, Reykjavik) to follow LinMaaS and why LinMaaS is part of the Nordic Mobility Innovation Platform (i.e., “LinMaaS as a blueprint for MaaS across Europe”); how the project will be organized (i.e., sharepoint) and who belongs to the core group (i.e., one representative from each of the nine organizations that received funding) which aims to meet weekly; how the work packages will be organized and implemented; reflections upon the suggested brand name (“LinGo”), proposing that it cannot be scaled regionally; and the planning of a public kickoff in Mar. 2020. | 6 |
| Analysis of Strengths, Weaknesses, Opportunities, and Threats (SWOT) for LinMaaS, prepared by consultants for the work package 3 (Marketing). This analysis was used at the municipal real estate company as a common starting point regarding how to address challenges. | 1 |
| Meeting notes from the work package 8, highlighting that the e-bike service is changing its technical platform provider, and that there are several issues (e.g., API) when it comes to integrating the service to the IT startup’s platform. | 2 |
| Minutes from the first workshop for the work package 2 (service design) summarizing the discussion between the eight participants regarding the “soft launch” of the beta version (planned for June 2020), the target groups based on the public transportation company’s Personas (2018), IDEO’s report (2018) and InterMetra’s report (2018), and the working methods (i.e., weekly meeting) and the next steps. | 2 |
| Meeting notes (by the project leader) from the core group weekly meeting (online). The document provides a “status update” from each work package, reflecting the reports given by each project’s actor about what has been done and what are the next steps. It also shows that the project coordinator takes the lead on several tasks, and that the municipal housing company has a new representative for LinMaaS. | 2 |
| Presentation of the public kickoff’s agenda prepared by Idea Hunt that shows the objectives of the workshop: reflection on the customer journey (i.e., signing-up, planning, booking, paying, traveling, and after-sales) for LinMaaS’ target groups (i.e., commuters, and daily travels), and preparation of a to-do list of tasks for each step of the customer journey. | 10 |
| Results from the public kickoff’s workshop on the customer journey: a list of 53 customer needs at the different steps of the customer journey, which are prioritized from the customers’ perspectives. These results highlight the importance of ease of use, convenience, rapidity, and reliability for the design of the app and its functionalities. | 3 |
| Document | Description | Pages |
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| P2P carsharing startup’s presentation (March 2020) | Presentation of the P2P carsharing startup by its CEO in preparation of the public kickoff. It presents the app functionalities and keyless technology, shows the results from the current implementation (i.e., 3,799 registered users, 448 car rentals), the exponential business development predictions for the next 8 months, the goals for 2020 (e.g., decrease customer acquisition costs, increase utilization rate, i.e., bookings of cars available, increase revenues, decrease insurance costs, secure financing, launch in Linköping and another large Swedish city), a comparison with the competition (e.g., Heap, Sunfleet, Snappcar, Gomore), and the vision for 2025 (i.e., 1.8 million active users, 315,000 cars available, SEK 16 billion turnover). The presentation also highlights the role of LinMaaS for the startup (i.e., expansion in Linköping). | 16 |
| IT startup’s presentation (March 2020) | Presentation of the IT startup’s expertise in MaaS and technical functionalities of its white-label platform, prepared for the public kickoff prepared by its Chief Product Officer. It is focused on the customer journey of MaaS app users (i.e., discovery, access, travel, and after) for different mobility needs (i.e., regional trips vs. intercity travels, business travelers vs. families). | 13 |
| “Linköpings kommun_mobilitesköp.pptx” (March 2020) | Presentation prepared for the public kickoff about the municipality’s regulations (legislation, procurement) and plans for parking spaces management and infrastructure in Linköping, and the concept of “Mobility Purchase” (i.e., property owners pay a fixed amount per reduced parking space, which grants access to LinMaaS to their tenants)—a first draft of LinMaaS business model to generate revenues. | 11 |
| Public Transportation Company’s presentation (March 2020) | Presentation of the public transportation company and of its role for LinMaaS prepared for the public kickoff. It highlights that 60% of public transport services are financed from taxes, the goal of increasing travels by busses and trains, instead of by personal cars, the issues with First-Mile/Last-Mile in traveling, and the upcoming challenges related to integration with the IT startup’s platform and API development. | 4 |
| “Intentionsavtal (utkast) LOI leverantörer MaaS” (March 2020) | Draft of the contract prepared by the municipal real estate company for interested mobility service providers to integrate LinMaaS as partners. It shows that both parties would commit to communication about LinMaaS, to document the integration (e.g., API) for the purpose of standardization, and to engage with the fossil-free goal through shared services—for a minimum period of 6 months (renewable). | 2 |
| “Kommunikationsplan MaaS Linköping” (April 2020) | Communication plan for LinMaaS (e.g., channels, milestones, message tones, press-release strategy, etc.), including the presentation of the five different types of users (“personas”)—developed by a communication manager at the municipal real estate company. | 8 |
| “Intern möte Minnesanteckningar” (April 2020) | Meeting notes (by the project leader) from a meeting about LinMaaS. The document summarizes the “status update” (e.g., e-bike service and parking apps, the business model development), what has been discussed by the meeting’s participants, and what are the next steps in the project and for the work packages in which the municipal real estate company is involved (3, 8, 9, and 11). | 2 |
| “LinMaaS use cases ext” (April 2020) | Shared working document within the project’s core group members supporting discussions on the design of the customer journey (i.e., from discovery, to booking, to traveling, etc.) and capped-pricing for the five different types of users (personas), and how to move forward towards the launch of a pilot app by June 2020. | 43 |
| “Linköping Maas June trial scope” (May 2020) | Document prepared by the IT startup showing the scope of the beta lunch (planned for 15 June 2020): discussing which features (i.e., registration, “map discovery” and routing, purchase) and mobility services (e.g., P2P carsharing, public transport, and e-bike services) should be included. | 1 |
| Document Description | Pages |
|-----------------------|-------|
| “Customer setup and White Label Material Guidelines 2020” (May 2020) | 15 |
| Document prepared by the IT startup for the municipality and the real estate company (within work package 3 on Marketing and user engagement), presenting what is needed in terms of graphical identification (logo, images, etc.) and other guidelines to set up the app (e.g., privacy policy, external customer support [InterCom] and payment service [Stripe] accounts, etc.). |
| “Statusuppdatering AP2” (May 2020) | 6 |
| Documents (6) prepared (bi-weekly between 9 March and 18 May) by the IT startup to inform and update the core group of the progress from participants in work package 2 (service design). |
| Press release “Dukaten satsar vidare inom mobilitet” (June 2020) | 1 |
| Press release from the municipal real estate company about its position in the (sustainable) mobility market, identifying itself as a mobility company and not a parking company, and that promotes LinMaaS and the new hire of a dedicated manager for shared mobility projects. |
| “SilverRail presentation of Flow (26 June)” (July 2020) | 6 |
| Presentation of SilverRail, the API content provider for SJ, at a workshop with LinMaaS core group, for a potential integration of SJ (i.e., the national rail company) into LinMaaS. |
| Press Release “Delning är framtiden” (July 2020) | 3 |
| Press release from the municipal housing company about the testbed “Share” in a new housing area of Linköping, led by the New Production Project Manager. |
| “Zapp Graphic Profile” (October 2020) | 49 |
| The graphic profile of LinMaaS and suggested branding as “Zapp” proposed by the ad agency consulted by the municipal real estate company: logo, colors, fonts, slogan (i.e., “Zapp your way there”, “Going there has never been easier”), layouts, pictograms (i.e., emoticons), illustrations (e.g., app), identity pictures, and examples of marketing communications. |
| “Hållbart Resande” (October 2020) | 26 |
| The municipality’s webpage and sub-webpages dedicated to presenting the different initiatives for sustainable traveling (e.g., Green Travel Plans), in line with the sustainability goals of traffic planning (e.g., reduce from 60% to 40% the proportion of travels by car by 2030). |
| Zapp Presentation and Q&A (November 2020) | 42 |
| Presentation of LinMaaS as “Zapp” by the project coordinator, a representative from the ad agency and the LinMaaS communication manager. It provides a report on the updated vision for the project, the current progress (e.g., current mobility actors involved in discussions) and challenges at hand, the graphic profile and communication plan, and an updated timeline with a beta launch to test-users in early 2021 and a project end in Dec. 2021 (no longer Jun. 2021). It also highlighted that the ad agency also works for the public transportation provider on employer branding and for the municipal real estate company on its parking and e-bike services. |
| “LinMaaS-Affärsmodell UTKAST” (December 2020) | 33 |
| Presentation of the Business Model (prepared with the assistance of the MaaS consultant) showing the general business strategy for the next 4 years, the division of roles and tasks among stakeholders, the structure of contracts and agreements between stakeholders, the forecasts for costs and revenues until 2024, and a presentation of the principles for “Mobility Purchase”. |
| 6 Marketing Project reports (January 2021) | 178 |
| Student reports (6) from a Master course (autumn 2020) in marketing at Linköping University where primary data (surveys and interviews) from consumers were collected and analyzed to better understand aspects of brand image and communication strategy for Linköping MaaS; the drivers and barriers of MaaS adoption, and the factors driving customer satisfaction and loyalty with diverse shared mobility services. |
| “Trendrapport Mobility Insights #3” (February 2021) | 44 |
| Collection of newspaper articles from Dagens Industri that map, identify, and analyze trends and the development of the Swedish MaaS market. |
| “Features for customer journey phases.xlsx” (April 2021) | 90 |
| Shared Excel file (i.e., live document, last updated: 13 April 2021) keeping track of project milestones, budget/costs, goals, tasks, current status, and planned development stages regarding technical integration, marketing, business model development, etc., Updated regularly, mostly by the IT startup representatives. |
Appendix B. Semi-Structured Interview Guide

1. Tell us a bit about your company and what it offers. What is your role at your company? (i.e., position, how long you have worked, previous experience related to a mobility project).
2. What is your role in the Linköping Mobility-as-a-Service (LinMaaS) project?
3. Why do you think Linköping has the potential (is a good place) for the development of MaaS? What are the reasons that makes launching LinMaaS a viable project?
4. What were the reasons for your company’s decision to participate in LinMaaS? What problems do you hope to solve with MaaS? How do you hope to benefit from MaaS?
5. Could you go through the process from the beginning to the end for such projects you are involved in? What is the first step? Do you need to establish a vision/scenario?
6. How did your initial vision change over time, when you compare the start of the project to now? Who and what was the reason for the changes?
7. Briefly describe how collaboration within the project works. What were your experiences when bringing multiple stakeholders together? Main challenge(s)? How could this/these situation(s) be handled differently?
8. Who would you consider to be the most influential stakeholder to increase collaboration within the project?
9. With whom have you collaborated the most during the project? Why?
10. What would you say are most important success factors to realize such a project?
11. What future steps are necessary to successfully launch LinMaaS? What is the ideal future scenario for the project?
12. Would it be possible to copy/paste LinMaaS to another city—how would you do it and what would be the challenges?
13. What should other municipalities planning to implement MaaS in the future think about?
14. Would having a “finished product” help you; a “best product showcase” for MaaS?

References

1. Jittrapirom, P.; Caiati, V.; Feneri, A.-M.; Ebrahimigharebaghi, S.; Alonso-González, M.J.; Narayan, J. Mobility as a Service: A Critical Review of Definitions, Assessments of Schemes, and Key Challenges. Urban Plan. 2017, 2, 13–25. [CrossRef]
2. MaaS Alliance. What is MaaS? ERTICO–ITS Europe. 2021. Available online: https://maas-alliance.eu/homepage/what-is-maas/ (accessed on 10 November 2020).
3. Mukhtar-Landgren, D.; Karlsson, M.; Koglin, T.; Kronsell, A.; Lund, E.; Sarasini, S.; Sochor, J.; Wendle, B. Institutional Conditions for Integrated Mobility Services (IMS). Towards a Framework for Analysis. K2 Centrum: Lund, Sweden, 2016. Available online: https://www.k2centrum.se/sites/default/files/institutional_conditions_for_integrated_mobility_services_ims_wp_2016-16_1.pdf (accessed on 17 June 2019).
4. Pöllänen, M.; Utrainen, R.; Viri, R. Challenges in the Paradigm Change from Mobility as a Self-service to Mobility as a Service. In Proceedings of the 1st International Conference on Mobility as a Service, Tampere, Finland, 28–29 November 2017; pp. 246–265.
5. Trivector. Mobility_as_a_Service What Is It, and Which Problems Could It Solve? Trivector Traffic. 2019. Available online: https://www.trivector.se/wp-content/uploads/2019/09/mobility_as_a_service.pdf (accessed on 3 December 2019).
6. Heikkilä, S. Mobility as a Service—A proposal for Action for the Public Administration: Case Helsinki. 2014. Master’s Thesis, Aalto University, Helsinki, Finland, 2014.
7. Di.se. Fick Unikt Avtal Med SL—Nu År Resan över för Ubigo. ‘Vi Har kämpat’. Digital Industri. 2021. Available online: https://www.di.se/digital/fick-unikt-avtal-med-sl-nu-ar-resan-over-for-techbolaget-vi-har-kampat (accessed on 30 April 2021).
8. Kamargianni, M.; Li, W.; Matyas, M.; Schäfer, A. A Critical Review of New Mobility Services for Urban Transport. Transp. Res. Procedia 2016, 14, 3294–3303. [CrossRef]
9. IDEO. SMAAS Slutsatser Och Förslag. IDEO: New York, NY, USA, 2018. Available online: https://www.ideo.com/blog/how-sweden-is-sparking-a-movement (accessed on 18 January 2021).
10. InterMetra. Kombinerad Mobilitet—Kundperspektiv Rapport. Intermetra Business & Market Research Group AB. 2018. Available online: https://samtrafiken.se/wp-content/uploads/2018/02/Intermetra-studien_Kombinerad-mobilitet-kundperspektiv-v5.pdf (accessed on 6 February 2020).
11. RISE. Regelverk Och Policy i Relation till MaaS. Kartläggning. Hur Juridiken Påverkar Kombinerad Mobilitet Som Tjänst—En Inventering av Hinder och Möjligheter. Research Institutes of Sweden, 2019. Available online: https://www.ri.se/sites/default/files/2019-11/Regelverk%20och%20policy%20%20relation%20%20ill%20MaaS%20%20-en%20%20kartläggning%20%20.pdf (accessed on 10 November 2020).
12. RISE. Sharing Economy and Smart Mobility Acceptance SESMA Om Framtidens Hållbara Mobilitet i en Liten Stor Stad; Institutionen för Ekonomi och IT, Högskolan Väst: Trollhättan, Sweden, 2021; Available online: https://www.ri.se/sites/default/files/2021-04/210331_18_slutrapport_sesma_med_bilagor.pdf (accessed on 4 May 2021).
13. Samtrafiken. Swedish Mobility Program. Samtrafiken i Sverige. 2017. Available online: https://samtrafiken.se/wp-content/uploads/2018/10/Förarbetes-Swedish-Mobility-Program-3.pdf (accessed on 29 April 2021).
14. Samtrafiken. Biljett för Digitaliserad Mobilitet. Samtrafiken i Sverige. 2018. Available online: https://samtrafiken.se/wp-content/uploads/2018/06/Biljett-rod-digitaliserad-mobilitet-Slutrapport-ver-1.0-2.pdf (accessed on 27 April 2021).
15. Trafikverket. Delad Mobilitet i Norden: Utmaningar och Möjliga lösningar; Swedish Transport Administration; Trafikverket: Borlänge, Sweden, 2019; Available online: http://urn.kb.se/resolve?urn:urn:nbn:se:trafikverket:diva-2908 (accessed on 22 November 2019).
16. Trafikverket. MaaS Förstudie Demonstrationsprojekt av en Bytespunk—Underlag till Delredovisning av Regeringsuppdrag; Swedish Transport Administration; Trafikverket: Borlänge, Sweden, 2020; Available online: http://urn.kb.se/resolve?urn:urn:nbn:se:trafikverket:diva-4225 (accessed on 22 November 2019).
17. VTI. Kombinerade Mobilitetstjänster på Landsbygd och i Mindre Tätorter—Resultat från Förstudien KomILand; Swedish National Road and Transport Research Institute: Linköping, Sweden, 2018; Available online: http://urn.kb.se/resolve?urn:urn:nbn:se:vti:diva-13306 (accessed on 10 November 2020).
18. European Commission. The European Green Deal. European Commission, 2019. Available online: https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_en.pdf (accessed on 9 June 2020).
19. Reports and Data. Mobility as a Service (MaaS) Market to Reach USD 372.1 Billion By 2026. GlobeNewswire. 2019. Available online: https://www.globenewswire.com/news-release/2019/04/01/1790931/0/en/Mobility-as-%20a-Service-MaaS-Market-To-Reach-USD-372-1-Billion-By-2026.html (accessed on 17 May 2021).
20. Trafikanalys. Nya Tjänster för Delad Mobilitet; Trafikanalys: Stockholm, Sweden, 2016; Available online: https://www.trafa.se/globalassets/rapporter/2016/rapport-2016_15-nya-tjanster-for-delad-mobilitet.pdf (accessed on 22 November 2019).
21. Sochor, J.L.; Strömberg, H.; Karlsson, M. Challenges in integrating user, commercial, and societal perspectives in an innovative mobility service. In Proceedings of the 94th Annual Meeting of the Transportation Research Board, Washington, DC, USA, 11–15 January 2015.
22. Karlsson, I.C.M.; Sochor, J.; Strömberg, H. Developing the ‘Service’ in Mobility as a Service: Experiences from a Field Trial of an Innovative Travel Brokerage. Transp. Res. Procedia 2016, 14, 3265–3273. [CrossRef]
23. Smith, G.; Sochor, J.; Karlsson, M. Procuring Mobility as a Service: Exploring dialogues with potential bidders in West Sweden. In Proceedings of the 24th World Congress on Intelligent Transportation Systems, Montreal, QC, Canada, 29 October–2 November 2017.
24. Goodall, W.; Fishman, T.D.; Bornstein, J.; Bonthron, B. The rise of mobility as a service: Reshaping how urbanites get around. Deloitte Rev. 2017, 20, 112–129.
25. Chronos. Vers un Transport de MaaS. Le Lab (Chronos x OuiShare). 2017. Available online: https://static1.squarespace.com/static/585d7136f5e2315e3e03a23c/t/159661d201b10e31519ce660/1499864592276/Enquete+1+-+Vers+un+transport+de+MaaS++Le+Lab+OuiShare+x+Chronos.pdf (accessed on 30 March 2017).
26. Zvolska, L.; Palgan, Y.V.; Mont, O. How do logistics organisations create and disrupt institutions? Towards a framework for institutional work in the sharing economy. J. Clean. Prod. 2019, 219, 667–676. [CrossRef] [PubMed]
27. Mair, J.; Reischauer, G. Capturing the dynamics of the sharing economy: Institutional research on the plural forms and practices of sharing economy organizations. Technol. Forecast. Soc. Chang. 2017, 125, 11–20. [CrossRef]
28. Mont, O.; Voytenko Palgan, Y.; Zvolska, L. How institutional work by sharing economy companies and city governments shapes sustainability. In Handbook of the Sharing Economy; Belk, R.W., Eckhardt, G.M., Bardhi, F., Eds.; Edward Elgar Publishing: Cheltenham, UK, 2019; pp. 266–276.
29. Berglund-Snogdlass, L.; Mukhtar-Landgren, D. Conceptualizing Testbed Planning: Urban Planning in the Intersection between Experimental and Public Sector Logics. Urban Plan. 2020, 5, 96–106. [CrossRef]
30. Thornton, P.; Ocasio, W.; Lounsbury, M. The Institutional Logics Perspective: A New Approach to Culture, Structure and Process; Oxford University Press: Oxford, NY, USA, 2012.
31. Friedland, R.; Alford, R.R. Bringing society back in: Symbols, practices and institutional contradictions. In The New Institutionalism in Organisational Analysis; Powell, W.W., DiMaggio, P.J., Eds.; University of Chicago Press: Chicago, MI, USA, 1991; pp. 232–263.
32. Lawrence, T.B.; Suddaby, R. Institutions and institutional work. In The SAGE Handbook of Organization Studies; Clegg, S.R., Hardy, C., Lawrence, T.B., Nord, W.R., Eds.; SAGE: London, UK; Thousand Oaks, CA, USA, 2006; pp. 215–254.
33. Lounsbury, M.; Boxenbaum, E. Institutional Logics in Action; Emerald Publishing: Bingley, UK, 2013.
34. Schulz, T.; Böhm, M.; Gewald, H.; Celik, Z.; Krčmar, H. The Negative Effects of Institutional Logic Multiplicity on Service Platforms in Intermodal Mobility Ecosystems. Bus. Inf. Syst. Eng. 2020, 62, 417–433. [CrossRef]
35. Gaver, A.; Phillips, N. Institutional Work as Logics Shift: The Case of Intel’s Transformation to Platform Leader. Organ. Stud. 2013, 34, 1035–1071. [CrossRef]
36. Marquis, C.; Lounsbury, M. Vive La Résistance: Competing Logics and the Consolidation of U.S. Community Banking. Acad. Manag. J. 2007, 50, 799–820. [CrossRef]
37. Vickers, I.; Lyon, F.; Sepulveda, L.; McMullin, C. Public service innovation and multi institutional logics: The case of hybrid social enterprise providers of health and wellbeing. Res. Policy 2017, 46, 1755–1768. [CrossRef]
38. McColl-Kennedy, J.R.; Cheung, L.; Coote, L.V. Tensions and trade-offs in multi-actor service ecosystems. J. Bus. Res. 2020, 121, 655–666. [CrossRef]
39. Von Richthofen, G.; Fischer, E. Airbnb and hybridized logics of commerce and hospitality. In Handbook of the Sharing Economy; Belk, R.W., Eckhardt, G.M., Bardhi, F., Eds.; Edward Elgar Publishing: Cheltenham, UK, 2019; pp. 193–207.
40. Berg Johansen, C.; Waldorff, S. What are institutional logics—and where is the perspective taking us? In New Themes in Institutional Analysis; Krücken, G., Mazza, C., Meyer, R.E., Walgenbach, P., Eds.; Edward Elgar Publishing: Cheltenham, UK, 2017; pp. 51–76.
41. Geissinger, A.; Laurell, C.; Oberg, C.; Sändström, C. Tracking the institutional logics of the sharing economy. In Handbook of the Sharing Economy; Belk, R.W., Eckhardt, G.M., Bardhi, F., Eds.; Edward Elgar Publishing: Cheltenham, UK, 2019; pp. 177–192.
42. Watson, R.; Lind, M.; Haraldson, S. The emergence of sustainability as the new dominant logic: Implications for information systems. In Proceedings of the 33rd International Conference on Information Systems, Orlando, FL, USA, 16–19 December 2012; pp. 1747–1762.
43. Grinevich, V.; Huber, F.; Karataş-Özkan, M.; Yavuz, Ç. Green entrepreneurship in the sharing economy: Utilising multiplicity of institutional logics. Small Bus. Econ. 2019, 52, 859–876. [CrossRef]
44. Giddens, A. The Constitution of Society, Outline of the Theory of Structuration; University of California Press: Berkeley, CA, USA, 1984.
45. Lawrence, T.; Suddaby, R.; Lea, B. Institutional Work: Refocusing Institutional Studies of Organization. J. Manag. Inq. 2011, 20, 52–58. [CrossRef]
46. Haveman, H.A.; Rao, H. Structuring a Theory of Moral Sentiments: Institutional and Organizational Coevolution in the Early Thrift Industry. Am. J. Sociol. 1997, 102, 1606–1651. [CrossRef]
47. Vaskelainen, T.; Münzel, K. The Effect of Institutional Logics on Business Model Development in the Sharing Economy: The Case of German Carsharing Services. Acad. Manag. Discov. 2018, 4, 273–293. [CrossRef]
48. Laurell, C.; Sandström, C. The sharing economy in social media: Analyzing tensions between market and non-market logics. Technol. Forecast. Soc. Chang. 2017, 125, 58–65. [CrossRef]
49. Rozenfeld, G.C.; Scapens, R.W. Forming mixed-type inter-organisational relationships in Sub-Saharan Africa: The role of institutional logics, social identities and institutionally embedded agency. Crit. Perspect. Account. 2020, 78, 102232. [CrossRef]
50. Pache, A.-C.; Chowdhury, I. Social Entrepreneurs as Institutionally Embedded Entrepreneurs: Toward a New Model of Social Entrepreneurship Education. Acad. Manag. Learn. Educ. 2012, 11, 494–510. [CrossRef]
51. Alexander, E.A.; Phillips, W.; Kapletia, D. Shifting logics: Limitations on the journey from ‘state’ to ‘market’ logic in UK higher education. Policy Politics 2018, 46, 551–569. [CrossRef]
52. Landerer, N. Rethinking the Logics: A Conceptual Framework for the Mediatization of Politics. Commun. Theory 2013, 23, 239–258. [CrossRef]
53. Silva, M.E.; Figueiredo, M.D. Sustainability as Practice: Reflections on the Creation of an Institutional Logic. Sustainability 2017, 9, 1839. [CrossRef]
54. Rechene, S.T.; Silva, M.E.; Campos, S.A.P. Sharing Economy and Sustainability Logic: Analyzing the Use of Shared Bikes. BAR Braz. Adm. Rev. 2018, 15, 15. [CrossRef]
55. ERTICO. Mobility as a Service (MaaS) and Sustainable Urban Mobility Planning. ITS Europe, 2019. Available online: https://www.eltis.org/sites/default/files/mobility_as_a_service_maas_and_sustainable_urban_mobility_planning.pdf (accessed on 10 November 2019).
56. Kramer, A.; Ringenson, T.; Sopjani, L.; Arnfalk, P. AaaS and MaaS for reduced environmental and climate impact of transport. EPIC Ser. Comput. Braz. Adm. Rev. 2018, 52, 137–152. [CrossRef]
57. Haffar, M.; Searcy, C. How organizational logics shape trade-off decision-making in sustainability. Long Range Plan. 2019, 52, 101912. [CrossRef]
58. Epstein, M.; Buhovac, R.; Yuthas, K. Managing social, environmental and financial performance simultaneously. Long Range Plan. 2015, 48, 35–45. [CrossRef]
59. Ozanne, L.K.; Phipps, M.; Weaver, T.; Carrington, M.; Luchs, M.; Catlin, J.; Gupta, S.; Santos, N.; Scott, K.; Williams, J. Managing the Tensions at the Intersection of the Triple Bottom Line: A Paradox Theory Approach to Sustainability Management. J. Public Policy Mark. 2016, 35, 249–261. [CrossRef]
60. Ansell, C.K.; Bartenberger, M. Varieties of experimentalism. Ecol. Econ. 2016, 130, 64–73. [CrossRef]
61. Shostack, G.L. Breaking Free from Product Marketing. J. Mark. 1977, 41, 73–80. [CrossRef]
62. Vargo, S.L.; Lusch, R.F. Evolving to a New Dominant Logic for Marketing. J. Mark. 2004, 68, 1–17. [CrossRef]
63. Vargo, S.L.; Lusch, R.F. Service-dominant logic: Continuing the evolution. J. Acad. Mark. Sci. 2008, 36, 1–10. [CrossRef]
64. Vargo, S.L.; Lusch, R.F. Institutions and axioms: An extension and update of service-dominant logic. J. Acad. Mark. Sci. 2016, 44, 5–23. [CrossRef]
65. Grönroos, C.; Raval, A. Service as business logic: Implications for value creation and marketing. J. Serv. Mark. 2011, 22, 5–22. [CrossRef]
66. Grönroos, C. Conceptualising value co-creation: A journey to the 1970s and back to the future. J. Mark. Mark. 2012, 28, 1520–1534. [CrossRef]
67. Eisenhardt, K.M.; Graebner, M.E. Theory building from cases: Opportunities and challenges. *Acad. Manag. J.* 2007, 50, 25–32. [CrossRef]

68. Stake, R.E. Case studies. In *The Sage Handbook of Qualitative Research*; Denzin, N.K., Lincoln, Y.S., Eds.; Sage: Thousand Oaks, CA, USA, 2005; pp. 443–466.

69. Yin, R.K. *Case Study Research and Applications: Design and Methods*; Sage: Los Angeles, CA, USA, 2018.

70. Fontana, A.; Frey, J.H. The interview: From structured questions to negotiated text. In *Handbook of Qualitative Research*; Denzin, N.K., Lincoln, Y.S., Eds.; Sage: Thousand Oaks, CA, USA, 2000; pp. 645–672.

71. Kvale, S. Ten standard Objections to Qualitative Research Interviews. *J. Phenomenol. Psychol.* 1994, 25, 147–173. [CrossRef]

72. Strauss, A.; Corbin, J. *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*; Sage: Newbury Park, CA, USA, 1990.

73. Hollingsworth, J.; Copeland, B.; Johnson, J. Are e-scooters polluters? The environmental impacts of shared dockless electric scooters. *Environ. Res. Lett.* 2019, 14, 084031. [CrossRef]