SCHOOL OF ECONOMICS AND MANAGEMENT

Cooperation In Fragmentation

Factors Influencing the Willingness of Firms to Cooperate in Fragmented Industries
A Case Study of the Mobility Industry in Germany

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May 2022

Master's Programme in International Strategic Management

BUSN09 – Degree Project

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Word Count: 28,742

Abstract

In any given industry, fragmentation, namely the state of a disintegrated landscape of market participants' offerings, can have detrimental effects on firms and customers in the likes of inefficiencies or inconvenient offerings, respectively. Despite recent first steps towards consolidation of offerings through, for example, platform ecosystems, the German mobility industry is still largely fragmented. With its diverse participants ranging from state-controlled public transport organizations to profit-driven private-sector mobility firms, cooperation in the German mobility industry requires inherently different firms to come together, aiming to ensure more sustainable or successful business practices. Despite the increasing relevance of these developments, literature is missing alternative perspectives on how fragmentation impacts the willingness of firms to cooperate, or more specifically, what factors effectively drive firms in more fragmented industries to cooperate. To fill this research gap, the German mobility industry was analyzed and factors influencing organizations' willingness to cooperate were explored. First, an in-depth literature review was undertaken, providing seventeen broadly applicable factors to be influencing a firm's willingness to cooperate. These general factors found in academia were then utilized to create a preliminary empirical framework. Through qualitative, abductive research, a single-case study of the German mobility industry incorporating semi-structured expert interviews was conducted. The obtained empirical insights from these interviews were operationalized and the newly discovered influencing factors were utilized to revise the framework. The final framework enables academics to holistically explore influential aspects relevant in the context of cooperation in highly fragmented industries. Further, the obtained results have real-world relevance, providing valuable insights for firms seeking to maneuver more fragmented markets and develop impactful cooperative strategies. Ultimately, this thesis proposes twenty-three factors to be influencing the willingness of firms in rather fragmented industries to cooperate with one another. Whilst all factors received some support through the primary data, especially the factors 'Pooling of Resources and Risks' and 'Level of Trust' were found to be strongly influential. From the newly identified factors through primary research, amongst others, the 'Creation of a Coherent Customer Experience' and most importantly an overarching 'Shared Mission' were found to be influential. The findings suggest that cooperative behavior from firms in fragmented industries is largely dependent on a few fundamental factors, whereas the total number of influential aspects is immense.

Keywords: Fragmentation, Cooperation, Mobility Industry, Industry Change, Consolidation

Acknowledgments

First and foremost, we are very grateful for the unlimited and always very timely help from our supervisor Thomas Kalling. Your contributions have been hugely appreciated and have been essential for the final version of the thesis. Moreover, thanks a lot to Jacob and Fredrik who provided us with valuable feedback halfway.

Next, we are immensely grateful for all the support we received through and from the university's resources. Also, we would like to thank every corporate representative that has taken the time to talk to us, providing us with insights that were indispensable for the findings in this thesis. On that note, we would also like to thank Skånetrafiken for having been the foundation on which we have developed our research idea.

Lastly, we would like to thank our family and friends, who all have supported us in times when all we thought and talked about was how to proceed with our thesis. Your help and support were tremendous.

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List of Abbreviations

AEG	*Allgemeines Eisenbahngesetz*
BAG-SPNV	*Bundesarbeitsgemeinschaft Schienenpersonennahverkehr*
BEV	*Battery-Electric Vehicle*
CsgG	*Carsharing-Gesetz*
CSR	*Corporate Social Responsibility*
GDP	*Gross Domestic Product*
GDPR	*General Data Protection Regulation*
GFTS	*General Transit Feed Specification*
MaaS	*Mobility-as-a-Service*
PBefG	*Personenbeförderungsgesetz*
SDG	*Sustainable Development Goals*
SPNV	*Schienenpersonennahverkehr*

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1 Introduction

The ever-changing world around us is continuously becoming more challenging. This development is just as visible in our private lives as it is in the business world. Firms must be more agile, innovative, and stakeholder-focused than ever before. This change leads to many firms rethinking their strategic choices, both regarding their offerings as well as their operations. Recent literature is full of suggestions on how to handle change, develop dynamic capabilities, and adapt to a new reality. Whereas previously many considered the primary objective and role of firms in society to make profits, expectations have risen in numerous other areas. For example, climate change poses a substantial threat to humanity, and stakeholders demand more responsibility from firms. However, it is not only environmental sustainability that is called for. Nowadays, firms also have to contribute to two other forms of sustainability: social and economic (Hutchins & Sutherland, 2008). Those challenges, together with many others, are often too large to be tackled by individual firms. In current times, which do not only include rapid change but also often scarce resources, Harrigan (1988) notes that interfirm cooperation might be the best way to improve a firm's competitive position. Therefore, to complement proprietary resources and capabilities, firms increasingly start to search for valuable knowledge and skills beyond their own boundaries (Becker & Dietz, 2004). Cooperation can lead to a bigger impact through the pooling of resources, knowledge, and risks (Schilling, 2020), and cooperating firms have more intensive knowledge flows among one another (Gomes-Casseres et al., 2006)[1]. As a result, some industries, like the Smart-Home devices industry (CSA, 2022), experience an increasing degree of cooperation, especially if that leads to higher customer value through an improved customer experience (Lemon & Verhoef, 2016). Other industries, however, are still rather fragmented. One example of this is the German mobility industry, where as of now there is a patchwork of products and services, and very few coordinated and aligned initiatives are executed (Interviewee 8). This current state of fragmentation, however, can be detrimental for both industry participants, for example through inefficiencies and a lack of synergies, and the firms' customers, suffering from an incoherent and inconvenient offerings landscape. These incoherent and inconvenient offerings in the German mobility industry, amongst others, force individuals using regional transportation to book several services from different mobility providers for a single trip.

[1] For readability purposes, the authors refrain from mentioning all authors in the citations' first occurrence.

There are numerous potential reasons for and against cooperation, and as firms are inherently different, there is certainly no one-size-fits-it-all solution. However, the role of cooperation in succeeding in today's business environment is significant, and the better the understanding of its antecedents and consequences, the more valuable it might be for companies.

1.1 Revisiting Existing Literature

The complexity of the business environment leads to increased specialization and disaggregation of firms, which in turn emphasizes the importance of understanding interfirm relationships (Achrol, 1991; Varadarajan & Cunningham, 1995). Porter (1991) suggested that "[t]he firm cannot be seen only as optimizing within tight constraints but as having the ability to shift the constraints through creative strategy choices, other innovative activity, and the assembly of skills and other needed capabilities" (p. 110). Cooperating with other firms is a way to potentially achieve that. Interfirm cooperation refers to "relations of mutual dependence between organizations which retain their separate identity as legal and/or economic entities" (p. 172) and involves a long-term orientation of both parties (Arrighetti et al., 1997). What distinguishes interfirm cooperation from more transactional relationships between firms is that it also includes a certain degree of risk-sharing and knowledge exchange, making it more binding and mutually beneficial (Arrighetti et al., 1997). Cooperation mainly occurs when firms know that they will be working together repeatedly, and both firms have a stronger long-term interest in a fruitful relationship than wanting to risk that for short-term profit maximization (Andreoni & Miller, 1993; Glöckner & Hilbig, 2012). However, this insight lends itself to game theory and works only under the premise that firms are not strictly rational but rather tit-for-tat players, thus responding with the same behavior they receive (Glöckner & Hilbig, 2012). Schmidt (2005) provides a further perspective on why firms cooperate. He argues that cooperation is optimal in situations where firms want to find an equilibrium between protecting one's own knowledge and allowing for an inflow of knowledge.

Since the term 'fragmentation' is used in various disciplines, such as biology (Saunders et al., 1991), business (Arndt & Kierzkowski, 2001), and law (Hafner, 2003; Koskenniemi & Leino, 2002), there is no universal definition of it. Nevertheless, it is primarily seen as describing something that is separated into distinct components. Most business literature on fragmentation is concerned with vertical fragmentation, especially in the context of international trade (Arndt & Kierzkowski, 2001; Deardorff, 2001). Some authors, however, have already applied the

concept of fragmentation to horizontal industry layers and discussed how it negatively impacts productivity and costs (Howard et al., 1989). This diversity in the literature regarding fragmentation shows the versatility of the term's application. In this research, horizontal fragmentation is discussed. Besides the differentiation between vertical and horizontal fragmentation, using the above-mentioned idea of fragmentation describing something that is separated into distinctive parts, one could also distinguish between different types of vertical and horizontal fragmentation. With regards to horizontal fragmentation, there could be a fragmentation of providers, with many firms offering similar services without linking them, or the fragmentation of customer offerings which is supposedly causally related but yet presents another perspective on fragmentation. In this thesis, the focus lies on provider fragmentation, acknowledging that this may often result in an incoherent, fragmented offerings landscape. Even though fragmentation is not a steady-state and can occur to different degrees (Biermann et al., 2009), this study does not aim to examine the degree of fragmentation of the case study industry. Further, even though the factors under investigation could contribute to lowering the degree of fragmentation in industries as they effectively showcase the influencing factors of firms' willingness to cooperate, examining the process of change in fragmentation is not the subject of this study. Acknowledging that fragmentation is not a dichotomous variable, for the purpose of this thesis the researchers consider industry fragmentation to be the state of having an inefficiently high number of horizontal, non-linked, and disintegrated service providers.

It might be that especially firms in fragmented industries could benefit from cooperation, as there could be a lot of synergy and efficiency potential to be reaped. Using the example of the German mobility industry, more customer-friendly offerings resulting from more interfirm cooperation and subsequent offerings integration can leverage the firms' profits. Correspondingly, inconvenient and fragmented customer offerings could lead to reduced demand. This poses a potential for higher customer satisfaction through cooperation, as additional value for end-users could be created through, for example, consolidating customer insights and transport infrastructure where customers otherwise would have to engage with multiple providers for a single-trip service. Therefore, customers might be more willing to use different forms of transport if this does not require purchasing different tickets.

But what factors are important to firms operating in fragmented industries when evaluating the attractiveness of cooperation? How do firms decide whether it makes sense to cooperate with one another or not? And are certain factors of particular importance? Cooperation in the context of fragmented industries currently presents a research gap, with only a few authors considering

cooperation and interfirm relationships in conjunction with fragmented industries in detail so far (Alashwal et al., 2011; Burgers et al., 1993; Galvin & Morkel, 2001). Nevertheless, those authors also did not empirically investigate influential factors on cooperation in fragmented industries.

1.2 Research Aim

While conducting an analysis of European mobility industries for a practical project with *Skånetrafiken* accompanying this thesis, the authors found national mobility industries, such as the German one, often to be fragmented with regard to their participants' offerings, leading to various situational problems and challenges. Considering that cooperation might be a potential solution for tackling these challenges and due to the existing literature lacking alternative perspectives on how the situational fragmentation can be addressed and possibly overcome, with only a few insights on the impact of fragmentation on cooperation, the authors were intrigued to research what influences the willingness of firms to cooperate. In general, the literature on interfirm cooperation is rather extensive. Yet, the distinction between more concentrated and more fragmented industries has not clearly been made. Hence, the aim is to provide research on that missing theoretical perspective and to develop a framework of factors influencing the willingness of firms in fragmented industries to cooperate with one another. This is achieved by researching factors that were found to influence interfirm cooperation in general and relating those to fragmented industries through primary research. The focus of this thesis is on influential factors for firms in fragmented industries to cooperate in general, not on which form of cooperation to choose. The resulting framework shall give firms and academics an overview of which aspects are particularly important in the context of firms' willingness to cooperate in fragmented industries. Awareness of influential factors in that context might foster intentional efforts to move towards a more cooperative industry atmosphere, potentially also benefitting the firms' customers. The research question, therefore, is: *What factors influence the willingness of firms in fragmented industries to cooperate with one another?*

As the authors initially became attentive to this issue during their research on the German mobility industry, the same was chosen as a case for the study. While there are also other examples of fragmented industries, the chosen industry arguably entails many different insightful facets, which may have led to its fragmentation, and was, therefore, considered a suitable research subject. The case selection will be further argued for in Chapter 3.2, and the

German mobility industry will be presented more extensively in Chapter 4 of this thesis. Whereas today, due to missing research on cooperation in fragmented industries, one could only speculate about the existence and importance of potentially influential factors in the context of fragmentation, this study aims to fill the research gap and provide insights into the composition of those factors. Besides the academic contribution, the results are also supposed to have real-life value by providing information for strategy formulation of the management of firms in fragmented industries, especially the German mobility industry.

1.3 Thesis Outline

The thesis is divided into six chapters. After an introduction in Chapter 1, Chapter 2 begins with a thorough overview of the existing literature on factors that potentially influence the willingness of firms to cooperate. Due to the identified research gap on cooperation in fragmented industries, those factors will not be exclusive to fragmented industries. Instead, they introduce a range of factors that might be relevant in fragmented industries and provide the foundation of the primary research conducted. Based on the literature overview, a preliminary framework is presented. In Chapter 3 the chosen methodological approach, as well as the research design, are illustrated. In Chapter 4, first, the German mobility industry is analyzed based on the PESTEL framework. This is supposed to give the reader an overview of key facts and figures about the industry's fragmentation, their underlying reasons, and resulting challenges and problems. Here, the role of the customer in the industry's state of fragmentation is also introduced and put into perspective. Hereafter, findings from the conducted interviews are presented, analyzed, and connected to the literature introduced in Chapter 2. The last two chapters then conclude with the discussion of findings from the analysis as well as final conclusions. Practical implications and suggestions for further research are also presented.

2 Literature Review

The overall objective of this chapter is to provide a foundation for conducting informed primary research (Creswell & Creswell, 2018). Moreover, the literature review contributed to the identification of the research gap and the resulting purpose of this thesis, enabling the authors to formulate the research aim. Based on the researchers' initial interest and previous knowledge in the field of cooperation, existing literature was used to develop an overview of factors previously found to be influential on or meaningfully connected to the cooperation willingness of firms. The second step of the literature review included in-depth research of each individual factor upon finalization of the factor list, aiming to provide evidence for the relevance of factors in the context of this research. Nevertheless, reviewing the literature was an iterative process, where the authors continuously refined both the factor list and search terms as the literature review progressed. It was decided to only include factors that have a solid foundation in previous literature and can be reasonably and objectively argued to be relevant. The identified factors were then structured thematically (Creswell & Creswell, 2018) by assigning them to three levels: firm-level, cooperation-level, and industry-level. Those levels refer to the context from which the factors' influences originate. For example, *Managerial Knowledge and Competencies* is a potential factor influencing a firm's willingness to cooperate that originates solely from one firm and not from any cooperation of that firm or the entire industry. The factor *Competition*, in contrast, could also influence the willingness to cooperate in fragmented industries but hinges rather on the overall industry than a single firm.

Whereas no piece of literature posed an outstandingly central role in the literature review, various fundamental works were identified throughout the process (Arrighetti et al., 1997; Hagedoorn et al., 2000; Harrigan, 1988; Mowery et al., 1996; Parkhe, 1993; Williamson, 1979). However, as interfirm cooperation is a multifaceted concept, numerous scholars and perspectives exist. Therefore, one can even consider the literature on interfirm cooperation fragmented, showing the many-sidedness of the concept.

2.1 Firm-Level Factors

Need for Resource and Capability Acquisition

Firms often differ with regards to the amount and type of resources and capabilities they possess. Differences, for example, can be based on the firm size, with smaller firms often having

fewer resources than larger firms (Huang et al., 2012; Huang et al., 2013). Previous literature has mostly distinguished resources and capabilities as resources being (physical) assets and capabilities being skills of the personnel (Varadarajan & Cunningham, 1995). Schilling (2020) argues that companies often lack the resources and capabilities which are required to achieve a desired outcome in time. The combination, exploitation, and balancing of accumulation and shedding of resources are necessary to achieve value creation (Sirmon & Hitt, 2003). In today's VUCA world (Bennett & Lemoine, 2014), firms often lack the time which would be required to develop or acquire necessary resources and capabilities themselves, without external partners. The time advantage that cooperation provides here can be decisive in how successful a company is. The need to collaborate with other firms to save time in the acquisition of resources and capabilities might also be intensified by the existence of time-compression diseconomies (Dierickx & Cool, 1989), which "asserts that individuals and organizations are subject to diminishing rates of returns when faced with time pressure" (Chen et al., 2012, p.290). Their existence suggests that, where firms must acquire resources and capabilities quickly, it might be the most economically viable option to cooperate with other firms. Even though cooperation cannot avoid the extra costs in comparison to having a longer period of time available, it might mitigate the extent of it.

Furthermore, sometimes firms might not be able to acquire certain resources or capabilities at all. For example, as proposed by Barney (1991), some firms have core competencies as a result of resources and/or capabilities that are valuable, rare, non-imitable, and non-substitutable. In that case, by definition, other firms must cooperate with this firm to get access to these resources and capabilities. An example of a resource that might be difficult to duplicate is brand equity (Wang et al., 2018). Cooperation to benefit from another firm's brand equity could, therefore, pose a viable reason for increasing the willingness to cooperate. Moreover, the network capabilities of another company present a valuable resource (Kandemir et al., 2006) and could pose an incentive to cooperate with the firm owning that resource, as networks are considered to be a potential source of improved efficiency and competitiveness (Casson, 1995). Lastly, extending one's own resources through cooperation can avoid having to merge with another company to acquire the necessary resources, thus helping to protect the corporate identity (Varadarajan & Cunningham, 1995).

Thus, various factors related to the need for resource and capability acquisition could influence the willingness of firms to cooperate with one another.

Wanting to Increase Flexibility

Getting access to other firms' resources and capabilities through cooperation could also be a means to develop dynamic capabilities such as flexibility and innovativeness (Kandemir et al., 2006). The concept of dynamic capabilities aims to describe, among others, how firms configure their strategic resources to quickly react to market changes (Eisenhardt & Martin, 2000; Teece et al., 1997). Based on Grant (1996) and Pisano (1994), Eisenhardt and Martin (2000) define dynamic capabilities as "the antecedent organizational and strategic routines by which managers alter their resource base – acquire and shed resources, integrate them together, and recombine them – to generate new value-creating strategies" (p. 1107). Through cooperation with other firms, a firm can minimize its asset commitment and subsequently increase its agility (Schilling, 2020). That is especially important and valuable since the higher the speed of change in an industry, the more flexibility is needed to succeed in it (Eisenhardt, 1989b; Nadkarni & Narayanan, 2007). Previous literature has identified two main forms of strategic flexibility: (I) resource deployment and (II) competitive actions (D'aveni, 2010; Eisenhardt & Martin, 2000; Nadkarni & Narayanan, 2007; Williams, 1994).

Firms sometimes suffer from path-dependency, where some resources' previous importance for the firm leads to organizational inertia to evolve (Tripsas & Gavetti, 2000). Therefore, once fundamentally important resources can become competency traps (Levinthal & March, 1993), and core competencies can become core rigidities (Leonard-Barton, 1992; Tripsas & Gavetti, 2000). Cooperation with other firms, thus, could provide ways to escape and mitigate path-dependency through leveraging one another's resources and capabilities without having to restructure the individual firms. However, this access to resources and capabilities might hinder a firm from developing its own new solutions and thus be disadvantageous in the long term. This is also supported by Kraatz and Zajac (2001) who state that having flexible resources lets firms focus on exploiting those, instead of exploring new ones. Moreover, gaining flexibility through cooperating with other firms can also bear the risk of one-sided opportunism and self-interested behavior, at least in less binding forms of cooperation (a brief overview of forms of cooperation will be provided in the next section). Therefore, even though the objective to increase flexibility might be a viable factor influencing the willingness of firms to cooperate with one another, the impact of doing so can both be beneficial and detrimental for the firm.

Wanting to Learn from Partners

Valuable learnings can be an important outcome and objective of cooperation (Schilling, 2020). The combination of two or more firms' resources can produce insights and learnings that single firms would otherwise not have been able to reach (Mowery et al., 1998; Rosenkopf & Almeida, 2003). The degree to which knowledge transfer can be a result of interfirm cooperation is contingent on the form of cooperation, with those involving equity facilitating greater knowledge transfer than less binding forms (Mowery et al., 1996). This idea of the value of a learning cooperation being contingent on its specific form is also supported by Mohr and Sengupta (2002) who state that "close inter-firm relationships with dense ties and thick boundary spanning structures are associated with greater flows of tacit information" (p. 297). The variety of different forms of cooperation, ranging from loosely coupled partnerships to closely intertwined ones through substantial investments, is extensive (Schilling, 2020).

(I) Strategic alliances are temporary and can take various sub-forms (Varadarajan & Cunningham, 1995), varying in terms of formalization, time horizon, and financial investment. Referring to a previous work of himself (Parkhe, 1991), Parkhe defines strategic alliances as "[r]elatively enduring interfirm cooperative arrangements, involving flows and linkages that utilize resources and/or governance structures from autonomous organizations, for the joint accomplishment of individual goals linked to the corporate mission of each sponsoring firm" (Parkhe, 1993, p. 795). Firms often use strategic alliances to acquire knowledge from outside the firm's boundaries and to leverage one's own capabilities through another firm's resources. Firm alliances can be categorized along two dimensions: capability *transfer* and capability *complementation* (Doz & Hamel, 1995). Learning from partners can arguably be considered a *transfer* of knowledge.

(II) Joint Ventures can be considered a sub-type of alliances, yet their distinguishing characteristic is the higher commitment from both (or more than two) firms (Schilling, 2020). They usually also include significant equity investments and, therefore, are more suitable if firms cooperate with the intention to learn from partners (Mowery et al., 1996). If the desired learnings are situated deep inside the organizational structure and are therefore tacit, only the melding of organizational structures in joint ventures makes the aspired insights accessible (Varadarajan & Cunningham, 1995). However, in her cooperative strategy framework, Harrigan (1988) argues that joint ventures are less popular in fragmented industries than in concentrated ones, the reason being the tendency in fragmented industries to compete with price-cutting tactics rather than other forms of competitive behavior.

Other forms of cooperation are licensing, outsourcing, and collective research organizations (Schilling, 2020). From those, the latter may be considered most relevant to the idea of cooperating to learn from partners. More precisely, firms might be willing to cooperate with another firm if the cooperation has the objective of collectively researching certain areas of interest. As such, this form of cooperation, together with joint ventures, might be the most prevalent among firms whose willingness to cooperate mainly stems from the desire to learn from partners. Interfirm learning, however, also inhibits challenges. It is likely that in most learning cooperations, firms do not have the same level of knowledge which is valuable for the respective other side. In addition, Hamel (1991) considers interfirm learning a 'race to learn', where the partner that learns the fastest is able to change the terms of the cooperation to its advantage. Thus, he claims this to be a new type of competition. Hence, cooperation requires an adequate governance mechanism to avoid uneven benefit-to-risk ratios and outcomes of the cooperation, potentially even resulting in the dilution of competitive advantage (Mohr & Sengupta, 2002). A lack of those governance mechanisms might prevent firms from considering learning a promising factor in the decision whether to collaborate or not. However, if governed sufficiently, wanting to learn from partners could be a viable factor influencing firms in fragmented industries in their decision on whether to cooperate with one another or not.

Innovation Performance

Academic research has found business innovation to be a crucial factor for firms aiming to achieve sustained competitive success and productivity growth (Freeman, 1991; Schilling & Phelps, 2007; Schilling, 2020). It can come in many different forms, ranging from smaller, incremental innovations to more radical business model innovations (Gibe & Kalling, 2019; Sawhney et al., 2006; Schilling, 2020). The importance of innovation performance is further underlined by the influential economist Joseph A. Schumpeter, who views entrepreneurial innovation as the main driver for economic growth (Freeman, 1991; Schumpeter, 1934; Schumpeter, 1950). Thus, ensuring high innovation performance can arguably be considered an imperative for firms aiming to ensure long-term business survival in today's complex and fast-changing global market (Zeng et al., 2010).

In the field of business innovation, it has long been approved that interfirm networks, for example through superior knowledge sharing mechanisms (Von Hippel, 1988), positively impact firms' innovation (Schilling & Phelps, 2007). Besides benefitting from knowledge

sharing, accessing new capabilities, and reducing the industry's level of competition (Burgers et al., 1993), research identifies (technological) spillovers through cooperating networks as a crucial contributor for firms to enhance innovativeness and enable productivity growth (Griliches, 1992; Schilling & Phelps, 2007).

Burgers et al. (1993) identify an increased willingness of firms with a poor track record and prior performance to cooperate with competitors in contrast to more successful market players. Poorly performing firms have been found to negotiate a greater number of alliance agreements with a relatively stable core of partners in pursuit of enhancing performance and increasing the innovative capacity (Burgers et al., 1993). Especially under consideration of the strongly arising need for green innovations (De Marchi, 2012), poorly performing firms might utilize cooperation networks to comply with stakeholders' requirements.

Overall, it is expected that the innovation performance of firms will impact the willingness to cooperate with other corporations.

Managerial Knowledge and Capabilities

The top management of a firm has an overall responsibility for its employees and the organization in general (Chandler, 2020; Finkelstein et al., 2009). It engages, amongst others, in the strategy formulation and implementation, and provides the frame in which daily operations occur and decisions are being made (Finkelstein et al., 2009; Tricker, 2019). Accordingly, research finds that a firm's organizational outcomes, like its long-term success, are not solely dependent on its resources and capabilities (Barney, 1991), the external environment and stakeholder pressures (Chandler, 2020), or the underlying market dynamics (Porter, 1998); they are also a product of the individual characteristics and, thus, the human factors of its top management (Finkelstein et al., 2009). These factors may include personality, experience, values, or social connections, and strongly shape the top management's perception of the strategic environment in which the organization operates, and thus also the decision-making on the best strategic direction (Finkelstein et al., 2009; Tricker, 2019). Therefore, decision-making related to a strategic cooperation might also hinge on the individual human factors of an organization's top management.

Niederkofler (1991) underscores the crucial role of top management to ensure the success of a cooperation, and summarizes that cooperation efforts often fail due to poor management

qualities in this field. Harrigan (1988) identifies the lacking management qualities as a big organizational risk, arguing that to ensure delivering long-term value to customers and other stakeholders, leaders must recognize and incorporate cooperative strategies advantageously to their business. Especially, firms need to gain hands-on experiences related to cooperating (Lambe et al., 2002), since knowledge about finding, developing, and managing a cooperation or alliance is commonly considered *tacit* (Polanyi, 1966). Similarly, scholars like Anand and Khanna (2000) and Simonin (1997) point out the importance of effectively managing alliances, whilst simultaneously acknowledging the difficulties related to acquiring needed capabilities or competencies for successful alliance management. Overall, alliance competencies, as proposed by Lambe et al. (2002), include alliance manager development capability, partner identification propensity, and alliance experience. The author proposes that these competencies must be obtained to achieve superior competitive advantages from cooperating.

Thus, it is expected that the individual characteristics of a firm's management will influence the willingness and success of firms to cooperate.

Corporate Governance and Ownership Structure

In recent years, academia has seen an increasing number of controversial debates about the theory of the firm and the role of corporate governance (Ghoshal & Moran, 1996; Sundaramurthy & Lewis, 2003; Tricker, 2019; Williamson, 1988). Depending, amongst others, on the ownership structure, firms are found to be focused on creating shareholder or stakeholder value (Chandler, 2020), thereby possibly taking a more short-term or long-term perspective on value creation.

There are diverse prevalent assumptions and theories related to corporate governance (see Ghoshal & Moran, 1996; Sundaramurthy & Lewis, 2003; Tricker, 2019; Williamson, 1988), which partly differ, for example, in their general perspective on the cooperativeness of a firm's management and its owners (Sundaramurthy & Lewis, 2003). In the past, these theories predominantly agreed on firms' focus on the creation of shareholder value, thereby also benefitting firms on an individual level (Ghoshal & Moran, 1996; Tricker, 2019). However, today's research identifies a broadly changing perception, manifesting in a growing importance of societal perspectives (Tricker, 2019). Tencati and Zsolnai (2009) summarize that the shareholders are not the exclusive owners of firms and that the associated risks and liabilities of organizations are shared by multiple stakeholders. Stakeholders can be categorized into

organizational stakeholders, including a firm's employees, *economic stakeholders*, like customers or competitors, and *societal stakeholders*, like communities (Chandler, 2020). The prior focus on creating shareholder value alone is ever more considered too narrow and short-term focused, and increasingly it is acknowledged that firms should be run in the interests of a broad set of stakeholders, creating stakeholder value or shared value to maximize the long-term performance and value creation (Chandler, 2020; Kanter, 2011; Porter & Kramer, 2011; Stout, 2012). Similarly, Tencati and Zsolnai (2009) argue that a firm's strengths come from fitting in the social, cultural, and environmental context. Thus, for firms to prosper, paying attention to stakeholders' demands is argued to be crucial (Tencati & Zsolnai, 2009). Given a focus on creating stakeholder value, cooperation amongst stakeholders is an imperative for firms seeking to maximize value creation (Chandler, 2020; Tencati & Zsolnai, 2009). Thus, whilst firms focusing on the creation of shareholder value might be too short-term focused to consider potential benefits from such cooperations, organizations focusing on stakeholder value might view cooperations, for example, with competitors as crucial for long-term value creation.

Research has found that the dominant ownership structure of firms varies around the globe (Denis & McConnell, 2003; La Porta et al., 1999a). Whilst firms in the United States often have dispersed ownership related to public limited firms, concentrated ownership is more dominant in most other countries (La Porta et al., 1999a). In public limited firms with concentrated ownership, the controlling shareholders exert significant power over the strategic direction of the organization (Denis & McConnell, 2003; La Porta et al., 1999a). This is exemplified in more than 69 percent of the cases of concentrated family ownership, where family members are found to be active members of the management board (La Porta et al., 1999a). Denis and McConnell (2003) conclude that concentrated ownership leads to a positive effect on firm value. One reason is arguably a longer-term focus of these organizations. In contrast, firms with dispersed ownership have often been found to focus on short-term shareholder value and profits (La Porta et al., 1999a; Stout, 2012). In addition to private limited and public limited organizations, Tricker (2019) identifies organizations focusing on the creation of public benefit over private advantages and profit-making as a third category of firms. The author identifies, amongst others, transportation authorities to belong to this category. These organizations put the creation of stakeholder value at their core and are, thus, increasingly found to cooperate (Siemiatycki, 2011). For example, through private-public partnerships, public governmental organizations have been found to finance large public projects by cooperating with private firms to transfer the risk of large infrastructural investment projects to private institutions (Siemiatycki, 2011). Considering the above, the varying ownership structures are expected to

influence the willingness of firms to cooperate with one another, especially given their potentially differing foci on more long-term- or short-term objectives.

Overall, both corporate governance systems and ownership structures are expected to impact the willingness of firms to cooperate also in fragmented industries.

Nature of Knowledge to Be Shared

It has been previously illustrated how firms might be intrigued to cooperate, seeking to gain access, for example, to cutting-edge scientific research or new technologies. At the same time, however, cooperating organizations are at risk of disclosing proprietary knowledge to partners themselves, which leads to a field of tension that firms must manage to successfully reduce unwanted spillover effects.

Knowledge can generally be classified into information, or explicit knowledge, and know-how, or tacit knowledge (Dyer & Nobeoka, 2000). Whilst information refers to broadly accessible, easily codifiable knowledge such as facts and symbols (Dyer & Nobeoka, 2000), know-how refers to practical skills or expertise (Von Hippel, 1987), which is difficult to codify and complex and, thus, often a key to create sustained advantages (Dyer & Nobeoka, 2000). On an organizational level, firms aiming to achieve competitive success and sustained competitive advantage may utilize organizational learning or dynamic capabilities (see Teece et al., 1997) as a driver for learning and developing new (tacit) knowledge (Dyer & Nobeoka, 2000). Dyer and Nobeoka (2000) view *inter*-organizational learning in particular as a critical component of the organizational learning concept. Especially in regards to technology or engineering, where the innovativeness of firms is argued to stem from the individual know-how of employees, cooperating or enhancing the exchange amongst industry participants is argued to pose a time and resource-efficient mode of acquiring new tacit knowledge quickly (Von Hippel, 1987).

At the same time, however, pioneering firms with rich sources of valuable tacit knowledge might be reluctant to engage in knowledge sharing and cooperating with external parties, fearing the unwanted technological or knowledge spillover of know-how deemed proprietary (Dyer & Nobeoka, 2000). Such spillovers transpire when the research efforts of a firm not only benefit the organization paying for it but also other firms, and potentially competitors (Schilling, 2020). Especially for organizations with close geographic proximity and similar technological domains, spillover effects have been found to be strong (Feldman, 1999; Jaffe,

1986; Schilling, 2020). Accordingly, disadvantaged competitors might use this mechanism advantageously to catch up with industry leaders, reshaping the competitive environment.

Overall, the opportunities related to cooperating and knowledge sharing are arguably vast. Research finds that spillovers play a key role in this, driving both innovation and productivity growth (Griliches, 1992). However, firms will have to carefully manage what knowledge is shared and built robust cooperation networks with trusted partners to mitigate the risks related to unwanted spillovers. Thus, the nature of knowledge to be shared is expected to be influential in determining the willingness of firms to cooperate with one another.

2.2 Cooperation-Level Factors

Strategic Fit

When organizations cooperate, their success hinges on the selection of the right partners and therewith two decisive dimensions: *resource fit* and *strategic fit* (Das & Teng, 1999). Whilst the resource fit describes "the degree to which partners possess compatible resources, that is, resources that can be effectively integrated into a value-creating strategy" (Das & Teng, 1999, p. 56), strategic fit refers to "the degree to which partners have compatible goals in the alliance" (p. 56). Whereas both are argued to be crucial, the latter will be focused upon in this section.

Whilst external pressures, for example, demanding more sustainable business practices, may force companies to increasingly turn to cooperation, it is considered crucial for firms to settle for partners with a strategic fit. Although the key objectives of partners in a cooperation need not be identical (Schilling, 2020), it is important that the cooperation strategy is compatible with and adds value to all partners without harming any party or hindering their ability to achieve their specific goals (Douma et al., 2000; Schilling, 2020). Further, when evaluating the strategic fit of a potential partner, the compatibility of the partners' strategic vision must be considered (Douma et al., 2000; Schilling, 2020). Additionally, cooperating partners must evaluate how the cooperation will help the individual firm to achieve its strategic intent (Schilling, 2020). Douma et al. (2000) further argue that the cooperation needs to be of strategic importance to all partners. This can be caused by market opportunities or limited actionable options available (Douma et al., 2000). It is expected that the strategic importance can also be derived from stakeholders' requirements. Overall, stakeholders play an important role when it comes to cooperation, which is underlined by Douma et al. (2000), emphasizing that potential

negative reactions must be anticipated and mitigated before cooperative engagements. In case of misalignment between cooperating firms' objectives and a lacking strategic fit, both parties risk conflict, wasted resources, and forfeited opportunities (Schilling, 2020).

Considering the existing literature in this academic field and the above elaboration, the willingness of firms to cooperate is expected to be highly dependent on the strategic fit of the engaging corporations and the corresponding anticipated success of an engagement.

Level of Modularity of Products and Services

Schilling (2020) differentiates between two kinds of systems: tightly integrated (non-modular) and loosely coupled (modular) systems. The concept of modularity describes "[t]he degree to which a system's components can be separated and recombined" (Schilling, 2020, p.87). This usually takes the form of breaking down a complex product or service into various standardized single components that can be mixed and matched to build different final products (Galvin & Morkel, 2001; Schilling, 2020). Schilling (2020) argues that most products and services are found to be modular on some level. Integrated systems offer advantages such as enhanced performance or improved reliability through increased control of the producer over quality (Schilling, 2020). In contrast, modular systems allow for more flexibility, enabling customers to build a product that more closely suits their specific needs and requirements, as the number of possible configurations is increased (Schilling, 2000; Schilling, 2020).

Research finds that not only products and services can be modular, but that also organizations are increasingly creating loosely coupled production arrangements and, for example, cooperate through strategic alliances (Ashkenas et al., 2015; Schilling & Steensma, 2001; Snow et al., 2000). Further, it has been found that the level of system modularity impacts the level of industry collaboration. For example, Galvin and Morkel (2001) argue that in industries where modularity is present in the most intense form of international industry standards, fragmentation and entirely independent operating market participants will follow. Resulting from this standardization and driven by a highly rivalrous market, firms then start to specialize, leading to increased market fragmentation (Galvin & Morkel, 2001). Since the introduction of industry standards reduces the required coordination, communication, and cooperation among component manufacturers, firms become highly independent (Galvin & Morkel, 2001). Generally, widely accepted industry standards cannot easily be changed, since any modification

would require broad acceptance and large-scale cooperation across multiple suppliers within the industry, often considered difficult in fragmented sectors (Galvin & Morkel, 2001). In such markets, firms continue to benefit from supplying highly modifiable products that are in line with industry standards (Schilling, 2000). Accordingly, a high degree of modularity can be evidence of a highly fragmented industry and, thus, low cooperation overall. Nonetheless, it can be argued that in the process of establishing an industry-standard, firms must cooperate to determine which version will become the new standard.

The recent rise of platform ecosystems might pose an intriguing base for interfirm cooperation, as they are said to be a compromise between highly modular and tightly integrated systems (Schilling, 2020). Whilst firms generally remain free to mix and match, at the same time they increasingly engage in more sticky, long-term agreements with their partners and make investments in co-specialization (Schilling, 2020). Hence, this can arguably be seen as an equilibrium between the two modes introduced above, with both cooperations being enforced and firms remaining highly individualistic.

Pooling of Resources and Risks

Firms often decide to cooperate to share costs and risks (Schilling, 2020), especially as more uncertainty is involved (Hagedoorn et al., 2000). Working together with other firms can be considered a strategic option to consolidate multiple firms' resources to achieve better results than what would have been possible alone, for example, entering new markets faster and easier, accelerating innovation activities, spreading risks more efficiently, or sharing costs (Ahuja, 2000; Cassiman & Veugelers, 2002; Lopez, 2008; Varadarajan & Cunningham, 1995). As interfirm cooperation can both happen between firms that are situated on the same stage of a value chain as well as between firms on adjacent stages of the value chain (Varadarajan & Cunningham, 1995), also referred to as *horizontal alliances* and *vertical alliances* (Burgers et al., 1993; Harrigan, 1988), the potential for pooling resources and risks being a factor which leads firms to cooperate with one another is extensive. Humans often tend to be risk-averse and consider sharing something to be a viable means to reduce their individual risk (Pietras et al., 2006). Subsequently, as firms are usually led by humans, the human behavior and tendencies might spill over to decision-making in firms. Hence, being able to share, for example, substantial investments through cooperating with another firm could present a factor that influences the willingness of firms to cooperate with one another. Accordingly, the absence of

notable risk could have the opposite effect, still influencing the willingness of firms to cooperate, but in a negative manner. Reducing firm-level risk through cooperation with other firms was also found to be a relevant issue in other industries, such as construction (Talluri et al., 2010), and biotechnology (Fernald et al., 2015).

In the mobility industry, the pooling of resources could have a large positive impact on the customers. That is, the denser the availability of means of transport, the more convenient the individual mobility opportunities and, assumably, the higher the willingness to use them. This increase in customer base, if mobility offerings were less fragmented and resources were pooled more, could then benefit the firms, and might subsequently increase their willingness to cooperate with one another to reap those benefits. Moreover, cooperation to pool resources and risks can increase efficiency and enable synergies as networks are created (Hagedoorn et al., 2000). Lastly, Harrigan (1988) suggests that firms could also benefit from pooling resources in the form of a joint venture as those might be usable to consolidate a fragmented industry and subsequently reduce price competition, thus making the industry more attractive for firms. Hence, the pooling of resources through cooperation could be beneficial for both firms, especially in fragmented industries, and customers. Therefore, it could pose a viable influencing factor.

Geographic Distance

The geographic distance or proximity describes the physical distance or respectively closeness between different market players (Howells, 2002). Arguably propelled by diverse factors such as trade wars, or actual acts of war as seen in Europe in 2022, influential economists and politicians increasingly call for reduced international dependencies, promoting a more self-sustained, geographically close, national focus of businesses. Thus, the physical distance between different market players may play a crucial role in determining the likelihood of conducting business and cooperating both today and in the future.

Schilling (2020) states that geographic proximity can play a role in the formation process of interfirm cooperative networks, and during their subsequent innovation activities. This is underlined by scholarly literature on geographically clustered, interrelated firms and networks of firms, recognizing that spatial proximity increases the likelihood of and enhances social

interactions and cooperation, and ultimately drives innovation (Balland, 2012; Boschma, 2005; Lagendijk & Oinas, 2005; Letaifa & Rabeau, 2013).

Boschma (2005) points to the advantages of enhanced trust-building through geographic proximity, and in combination with increased interaction, identifies increased knowledge spillovers and innovation to be a result of this. Especially networks of multiple firms from along the value-chain are found to benefit from proximity through knowledge-sharing and spillovers (Schilling, 2020). Other than geographic closeness, a high frequency of interaction increases the level of trust and, thereby, may also positively affect the exchange of knowledge between firms (Schilling, 2020). Despite the continuous progress of information technology systems, not all knowledge and information can effectively be shared. Summarizing previous literature, Schilling (2020) concludes that proximity is particularly important for sharing *complex knowledge* with many underlying components, many interdependencies, or both, as well as *tacit knowledge* which cannot be readily codified. Overall, understanding the drivers and benefits related to geographic clusters of firms will be useful to develop strategies for organizations to expropriate benefits from geographic closeness, whilst mitigating the access of geographically close firms to proprietary knowledge through unwanted spillovers at the same time (Schilling, 2020).

Next to enhancing trust and social interactions, geographic proximity has been found to make cooperation between local players easier, which, thereby, has enhanced the individual and regional capacity to innovate (Letaifa & Rabeau, 2013). One reason for this, as proposed by Storper (1999), could be that a shared local business culture generally favors cooperative behavior. Similarly, Hofstede (1994), arguably one of the most influential scholars in the field of cultures, identifies strong differences between national cultures and also organizational cultures. The author underlines the diverse challenges of managing cultures and concludes that it is important for firms to identify and acknowledge differences in, for example, organizational structure, leadership style, motivation patterns, or training and development models. Thus, geographic closeness may be subject to reduced cultural differences, enhancing the willingness of firms to cooperate.

However, there is also scientific evidence that being too close might hamper innovation and impede creativity (Boschma, 2005). Further, Letaifa and Rabeau (2013) propose that geographic distance can sometimes even be seen as an accelerator of entrepreneurship and innovation, especially when there is a large geographic distance between firms and organizations that do not fear one another as competitors. Thus, it is expected that the

geographic distance of firms has an impact on the willingness and likelihood of firms to cooperate with one another.

Interfirm Trust Level

Trust presents another factor that could influence the willingness of firms in fragmented industries to cooperate. The meaning of trust is not distinctively defined in the literature. For the purpose of this research, trust is "the expectation that the promise of another can be relied on and that, in unforeseen circumstances, the other will act in a spirit of cooperation with the trustor" (Hagen & Choe, 1998, pp. 589-590). Based on that definition, Hagen and Choe (1998) view organizations themselves as being capable to have trust, in comparison to only considering the trust of managers or other employees. Nevertheless, managers' attitude, knowledge, and experience also play a role in how eager firms might be to work together. That aspect is elaborated on in the section *Managerial Knowledge and Capabilities*.

The extent to which trust influences business relations varies between different countries and cultures. More generally, there is a variety of corporate governance mechanisms around the world, including the Anglo-Saxon, Germanic, Latin, and Japanese systems which emphasize different core ideas and values (Clarke, 2016). Differences between those systems are based on various aspects, among which one is culture. Licht (2001) proposes that firms operate within socio-cultural settings which influence how a firm conducts and can conduct business. Fukuyama (1996), for example, argues that firms are a product of trust while he considers the difference between corporate governance systems to be based on different trust relations. Historically, the Japanese corporate governance system is the most networked and trust- and relationship-based system (Clarke, 2016).

As a result of different systems, the role of trust varies. In general, however, trust is a fundamental component of relations between firms (Hagen & Choe, 1998) and the existence of trust between two firms can be argued to always be influential on whether firms decide to cooperate with one another or not. The level of interfirm trust is positively influenced by geographic proximity, which in itself could be an influencing factor with the regard to the willingness of firms to cooperate (see factor *Geographic Distance*), meaning that closer geographic proximity can lead to higher trust and, subsequently, a higher willingness to cooperate with one another (Bönte, 2008). Appropriability problems, meaning difficulties to

appropriate value from the interfirm relationship, negatively impact the trust level of a firm for another firm. Subsequently, if trust is low due to appropriability problems, firms might be less willing to cooperate with other firms (Bönte & Keilbach, 2005; Bönte, 2008; Cassiman & Veugelers, 2002). In conclusion, trust is a relevant and multifaceted aspect in interfirm relationships and might potentially be even more significant in fragmented industries, in which firms, by definition, have fewer operational bonds and, therefore, may have had fewer opportunities to develop trust.

Transaction Costs

The costs that accompany cooperations with other firms are likely to pose another potential influential factor. Transaction cost theory is widely recognized in literature but is mostly associated with Williamson (1979). According to Dahlman (1979), transaction costs consist of three main parts: search and information costs, bargaining, and decision costs, and policing and enforcement costs. Those costs occur in different sorts of business transactions and, as they are often used to explain whether activities should be organized internally or externally (Williamson, 1988), are a crucial factor in the concept of interfirm cooperation. Firms can choose between two main types of conducting transactions: (I) market competition based on prices or (II) internalization of transactions through direct ownership, making it possible to govern transactions through internal control structures (Varadarajan & Cunningham, 1995). Cooperation has been considered to be able to serve the same purpose as direct ownership (Heide, 1994; Varadarajan & Cunningham, 1995), hence posing a potentially attractive hybrid and a way to circumvent price competition without having to vertically integrate all transactions, as has been a fundamental idea of transaction cost theory (Williamson, 1971; Williamson, 1979). Interfirm cooperation is said to be ‘neither market nor hierarchy’, being situated in-between those two (Powell, 1990; Ring & Van de Ven, 1992).

Cooperation is an interfirm agreement that is often characterized by inherent instability and a continuous threat of exploitation or opportunism, also due to the absence of a higher authority (Clemons & Row, 1992; Parkhe, 1993). As a result, firms are required to self-govern themselves and the cooperation, often termed ‘private ordering’ (Galanter, 1981), which can lead to inefficient outcomes despite all firms having done right in terms of governing themselves separately (Parkhe, 1993). Thus, despite the advantages that cooperation brings, it also involves risks and, subsequently, costs to manage those risks. Such costs vary in nature (Williamson,

1979), but their extent is most likely influential on firms' willingness to cooperate with one another. Here, based on the above-mentioned definition of trust, the trust could act as a mitigator of costly risk reduction as it could ensure that the "other will act in a spirit of cooperation" (Hagen & Choe, 1998, pp. 589-590). The extent of transaction costs, moreover, is contingent on the concrete form of cooperation that is chosen by firms and is influenced by the rise of digital technologies, which has allowed firms to reduce both transaction costs and transaction risks (Clemons & Row, 1992). Nevertheless, issues like asset specificity, moral hazard, or adverse selection (Williamson, 1985) can lead to investments, made in expectation of a successful cooperation, being unrecoverable, posing a threat to potential cooperators, and influencing their willingness to cooperate with one another. Investments specific to a cooperation, however, can potentially also present mutual assurances and replace specific types of (costly) contractual agreements as they pose credible commitments to the cooperation (Parkhe, 1993; Williamson, 1985). Cooperation which includes high cooperation-specific investments even tends to be more successful than cooperation without them (Freeman, 1987).

To conclude, transaction cost theory has various influences on and implications for interfirm cooperation. Based on the large body of transaction theory literature, one might assume that the risks associated with cooperation in a fragmented industry, with arguably fewer interdependencies, could be higher than in non-fragmented ones, leading to higher costs for developing, among others, a suitable contractual environment (see *Legal Environment*) or other mechanisms in order to get firms to cooperate with one another. If those costs are too high, their existence could negatively impact the willingness of firms in fragmented industries to cooperate with one another.

2.3 Industry-Level Factors

Building a Coalition Around a Shared Standard

The willingness among firms to cooperate with one another can also be based on wanting to build a coalition around a shared standard (Schilling, 2020), for example through the use of consortia (Doz et al., 2000; Xia et al., 2012). In the case of the mobility industry, examples could be developing a common data format that enables the provision of data on different modes of transport on the same platform, or a shared pricing strategy. Customer journeys today entail multiple touchpoints and are becoming more and more complex (Lemon & Verhoef, 2016), potentially influencing the customer experience. This, however, is vital in determining a firm's

success and, therefore, the creation of a distinctive customer experience is a primary management objective (Lemon & Verhoef, 2016). As a result, management of firms might be willing to cooperate to achieve a higher level of customer experience, may it be through a more streamlined use of digital apps or a more comprehensible and coherent pricing structure in the industry. Besides benefitting from the final product based on a shared standard, Xia et al. (2012) propose that firms can also reap process benefits from cooperating around a shared standard. Process benefits in this context are, among others, interfirm learning (see *Wanting to Learn from Partners*) and social capital benefits, and their extent varies depending on firm characteristics (Xia et al., 2012). The extent of this factor's influence on the firms' willingness to cooperate can be argued to potentially be wider in industries where no such standard already exists. In fragmented industries, the existence of an industry-spanning standard is arguably less likely and the benefits to reap from one are higher than in non-fragmented industries. Thus, this factor might be a particularly prevalent one.

The willingness to cooperate with one another to build a shared standard, however, can eventually result in less cooperation than before. That is, if a shared standard is established, products and services can become increasingly more modular, which decreases the need for cooperation (see *Modularity of Products and Services).*

Legal Environment

Firms' legal environment might influence their willingness to cooperate. The overarching concept of the 'legal environment' is under-theorized in previous literature (Short & Toffel, 2010), with only a few authors explicitly researching it (e.g., Edelman & Suchman, 1997). The legal environment is defined to have different facets, namely "the facilitative environment, in which law passively provides an arena for organizational action; the regulatory environment, in which law actively seeks to control organizational behavior; and the constitutive environment, in which law defines the basic building blocks of organizational forms and inter-organizational relations" (Edelman & Suchman, 1997, p.479), of which all three can be considered relevant in the context of influence on interfirm cooperation willingness. Besides written law, enforcement effectiveness is also a vital part of legal environments (Short & Toffel, 2010).

Legal systems and law differ across the globe, often fundamentally (David & Brierley, 1978; Myors et al., 2008). Contract law, as a central part of the legal environment, is considered to be one of the main mechanisms to secure business transactions in the market economy (North, 1990). Contract law has a dual role in cooperation: (I) the planning function which "creates a space within which the parties can plan the exchange" and (II) the incentive function which "provides a set of sanctions aimed at inducing performance of the agreed obligations" (Arrighetti et al., 1997, p.173). Arrighetti et al. (1997) found that there is often a significant role of firms' contractual environments in a long-term cooperation and fostering trust. Referring to Granovetter (2018), Arrighetti et al. (1997) define a contractual environment as "the social, institutional and organizational context within which contracts are embedded" (p. 171). Their research revealed, for example, the influence of the legal form of contractual relationships on cooperation.

The fact that the legal environment of firms differs between countries and markets (La Porta et al., 1998; La Porta et al., 1999b) might play in role in how willing firms are to cooperate with one another. For example, firms that aspire a cooperation in a legal environment that provides a lot of protection and assurances for each cooperating party in the form of written, codified law (regulatory environment) might be more willing to cooperate, as their risk seems to be lower, or at least they might seem to be more protected by law. On the other hand, some scholars argue that a solid regulatory environment is often not meaningful for many potential difficulties arising from cooperations and that there is also a relational perspective, where contractual protection is less important for dispute regulation, to secure and protect cooperations (Arrighetti et al., 1997; Campbell & Harris, 1993). However, Short and Toffel (2010) find that the sheer existence of an effective legal environment already affects the firms' behavior. Therefore, as an underlying factor of all business transactions and cooperations, the legal environment might always have an influence.

Environmental Requirements

Recently, the business landscape has been strongly shaped by growing discussions around the worldwide environmental agenda and sustainability (Chandler, 2020; De Marchi, 2012). A changing consumer focus toward more eco-friendly practices can be identified, showing, for example, in the willingness of individuals to reduce their ecological footprint (Harrison et al., 2005), creating both opportunities and threats for firms (De Marchi, 2012). With the increased

attention of policymakers and legislation, environmental issues become increasingly institutionalized, and complying with new requirements will be decisive in the long-term survival of firms (Zadek, 2004).

To meet their stakeholders' demands for more sustainable business practices and the reduction of externalities, firms must focus on green or environmental innovation (De Marchi, 2012). This type of innovation calls for both incremental but also more radical initiatives (Chandler, 2020; De Marchi, 2012; Harris et al., 2020), the latter often requiring firms to innovate their business model and move beyond legacy practices (De Marchi, 2012; Gibe & Kalling, 2019).

De Marchi (2012) finds that cooperating with one another is a crucial component for firms to realize green innovation. Especially when it comes to more radical innovation, aiming at greening industries, cooperating with one another may prove valuable and increase the incentive to invest in new products or processes that reduce environmental impacts (De Marchi, 2012). Amongst others, this is enabled through reduced monetary requirements, increasing the overall competitiveness with non-engaging firms (De Marchi, 2012).

Further, the author presents evidence underlining the importance of strong partnerships to spur the application of new environmental technologies. For example, as firms are increasingly aiming to close their production cycles and enhance recyclability, interdependencies grow, thus, making cooperating increasingly important (De Marchi, 2012; Seuring & Müller, 2008). Cooperating offers firms to share both costs and benefits with their partners, allowing them to maximize the appropriation of benefits derived from innovation by widening the scope of research that can be undertaken (Von Hippel, 1987).

Overall, it is expected that environmental pressures influence the willingness of firms to cooperate with one another in fragmented industries.

Competition

Competition is a central concept of economic thinking, with many researchers attempting to define the term (Stigler, 1987; Vickers, 1995). Here, it is generally described as "a rivalry between individuals […], and it arises whenever two or more parties strive for something that all cannot obtain" (Stigler, 1987, p.531). In line with this definition, competition can be considered strong when the probability of zero-sum relations amongst organizations is high

(Barnett, 1997). Generally, there may be different levels and forms of competition in global markets.

The level of competition within an industry depends on the number and competitive strength of market participants, the latter describing the potency of firms as competitors (Barnett, 1997). Further, Barnett (1997) studied the concept of competitive intensity of individual firms, which describes the degree or severity to which an organization's actions impact the life chances of its competitors. The author proposes that whilst the general probability of competition depends on the entire market at hand, competitive intensity refers to the competitive relation of individual market participants.

Similarly, Burgers et al. (1993) studied competition, however, focusing on its effect on the popularity of interfirm cooperation. The authors conclude that interfirm competition has a critical effect on cooperation and that the key driver for competing firms to cooperate, for example, through joint ventures, is environmental uncertainty. One example of this is competitive uncertainty, which arises from competitive interdependence, describing the direct impact that a competitor's actions have on the firm's own position and market share, which, in turn, largely depends on the industry structure. Here, one may draw connections to the concept of competitive intensity discussed by Barnett (1997). Burgers et al. (1993) argue that in monopolies and fragmented industries the competitive interdependence is generally low, resulting in low competitive uncertainty and a low willingness to collaborate. Whilst in monopolies there is only one player with no competitive interdependencies, in fragmented industries there are many smaller players sharing the market. The competition in fragmented markets is inherently volatile since no single firm has the force to influence the competitive landscape by bringing forward one industry-standard (Harrigan, 1988). Given the excess capacity and high competition, further propelled by frequent technological change, firms in fragmented industries are mostly found to turn towards price-cutting tactics over non-price advantages (Porter, 1998), which makes cooperating generally unattractive (Harrigan, 1988). In contrast, oligopolies have a large degree of competitive uncertainty, since a smaller number of equal players control the market and are directly impacted if one firm decides to change, for example, its pricing (Burgers et al., 1993). Burgers et al. (1993) argue that the willingness to cooperate will be high to mitigate the effects of interdependency, thereby, effectively reducing the level of competition and environmental uncertainty.

At the same time, Harrigan (1988) argues that there are also scenarios in which cooperating in fragmented industries can be considered attractive and create value for customers and market

participants. For example, firms in fragmented industries can sometimes be found to use cooperation to hedge market risks by building a large network of ventures. For these firms to cooperate or build strategic ventures with a partner, the topic of cooperation must be close to the organization's strategic core and, thus, of strategic importance. When a cooperation is being used to consolidate highly fragmented markets, the results are lower competition and a reduced focus on price-cutting, making cooperation generally attractive.

In sum, the level of competition is expected to influence the willingness of firms to cooperate in fragmented industries.

2.4 Summary and Preliminary Framework

All the above-mentioned factors could pose factors that influence the willingness of firms in fragmented industries to cooperate with one another. However, previous literature lacks a discussion of the actual influence of those factors in industries in the light of fragmentation. Therefore, it might be that some factors are more relevant in fragmented industries than others. In this thesis, the authors aim to fill that research gap by investigating the influence of those factors in the fragmented German mobility industry. As the basis for the primary research, the literature review has yielded a framework consisting of seven firm-level-, six cooperation-level-, and four industry-level factors (see Figure 1).

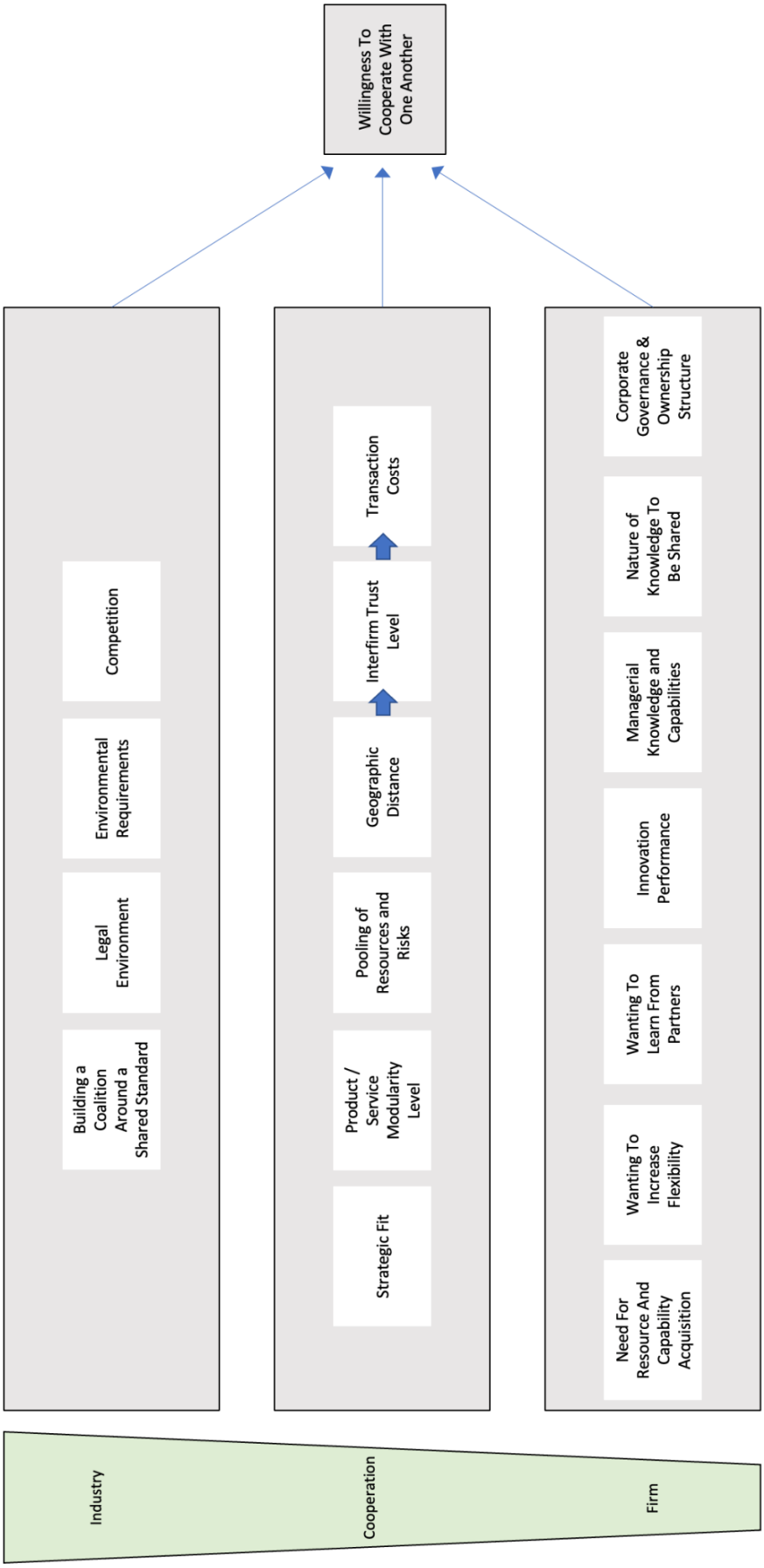

Figure 1: Preliminary Framework of Influencing Factors

3 Methodology

This chapter motivates how the primary research was conducted, seeking to answer the initial research question as stated in Chapter 1.2 *Research Aim*, and provides information about the employed methods. First, the basic foundations of the research approach, the data collection process, and the overarching research design are presented, before elucidating the rationale for the case selection. Further, the data collection and data analysis procedures are presented in detail and reflected upon, before lastly concluding this chapter by elaborating on components of validity, reliability, and ethical considerations as well as identified limitations of this research study.

3.1 Research Approach and Research Design

The research approach is considered the conceptual basis for conducting research (Creswell & Creswell, 2018). It includes the plans and procedures that enable the transition from broad assumptions to detailed methods, seeking to generate new findings (Creswell & Creswell, 2018). The overarching approach is shaped by the underlying research problem, the specific research methods, i.e., questions, data collection, data analysis, data interpretation, and data validation, as well as the general research design (Creswell & Creswell, 2018).

In conjunction with the identified research gap, which this paper seeks to explore by analyzing factors influencing the willingness of firms to cooperate in fragmented industries as described in Chapter 1, an abductive research approach was chosen. Abductive research starts with a surprising fact or discovery, leading to a preliminary conclusion (Saunders et al., 2019). Drawing on existing literature, testable premises that sufficiently explain the discovered phenomenon are defined and integrated into a conceptual framework (Saunders et al., 2019). To evaluate and test the practical relevance of these, primary data is collected (Saunders et al., 2019). Themes and patterns are identified, and the conceptual framework is tested by incorporating the newly generated data (Saunders et al., 2019). Necessary revisions to the model are made throughout the process (Saunders et al., 2019). Thereby, abductive research seeks to contribute through modifications to existing or the generation of new theories (Saunders et al., 2019). In contrast to linear approaches like *deduction* or *induction*, moving from data to theory or vice versa, *abduction* follows an iterative process and, thus, moves back and forth between both, effectively combining inductive and deductive research approaches (Suddaby, 2006).

Altogether, this methodology enables researchers to continuously adapt their approaches whilst uncovering more surprising facts during the entire research process (Saunders et al., 2019).

To conduct the formulated research and adhere to the defined approach, a qualitative study was implemented (Bell et al., 2022; Creswell & Creswell, 2018). This mode allows for the analysis of social or human problems and their relevance for groups, here: organizations (Creswell & Creswell, 2018). This methodological choice derives meaning from words and images (Bell et al., 2022; Saunders et al., 2019), in contrast to numerical data obtained from quantitative research, which is why data collection methods are mostly unstructured or semi-structured, allowing the alteration of questions and procedures as new insights emerge (Saunders et al., 2019). More specifically, in this research a mono-method qualitative study was conducted, meaning that only one form of primary data gathering, i.e., expert interviews, was used (Saunders et al., 2019). In following this approach, empirical data is collected, analyzed inductively, and interpretations of the outcomes are made (Creswell & Creswell, 2018). Since this paper seeks to explore diverse factors related to inter-organizational cooperation, an in-depth understanding and analysis are arguably needed whilst simultaneously allowing for alterations during the research process. Therefore, a qualitative approach is considered more suitable than a sole quantitative study, and under consideration of the limitations as elaborated in Chapter 3.6 *Limitations*, a mixed-method approach was also rejected.

Within qualitative, quantitative, and mixed-methods research approaches, there are different research designs, referring to types of inquiries that guide the directions for research procedures (Creswell & Creswell, 2018). These research designs connect the chosen research approach and mode of data collection (Saunders et al., 2019). To address the initially posed research question, a single case study research design was chosen, as it allows an in-depth analysis of the topic at hand within its real-life setting, analyzing the interaction of the phenomenon in its context (Creswell & Creswell, 2018; Yin, 2018). Further advantages include that due to the deep embeddedness in rich empirical data, case studies contribute to theory building with interesting, accurate, and testable insights (Eisenhardt & Graebner, 2007). Case studies are increasingly popular, as they are amongst the best modes to bridge rich qualitative evidence to deductive research (Eisenhardt & Graebner, 2007). Whilst multiple cases allow for more robust insights (Yin, 2018), due to the limited time available for this study, a single case study design was chosen. Following the reasoning of Saunders et al. (2019) and Yin (2018), cases to be studied can range from individual people to a country's economy or entire industry. To generate more

insights from the limited scope of this single case study, a broad level and context were purposefully chosen.

3.2 Case Selection

The German mobility industry was chosen as the single case of this study. Its context is continuously shaped by external influencing factors, changing the industry rules of competition and cooperation. Overall, as presented in Chapter 1 *Introduction*, the industry is of a highly fragmented nature. Yet, organizations within the mobility industry are increasingly found turning towards cooperation, which makes the industry attractive for in-depth analysis of influential factors. Another aspect contributing to its suitability is the omnipresent trend towards sustainability, which heavily influences the mobility industry and its societal relevance. That is, mobility firms can be considered of fundamental importance in terms of emission reduction, both by being attractive enough to get people to use their cars less and through reducing their own ecological footprint by shifting towards battery-electric vehicles or other forms of more sustainable propulsion technologies. Hence, insightful findings could be beneficial and provide practical value in the industry's development towards sustainability through, among others, enabling and facilitating more cooperation and subsequently integrated mobility offerings. Therefore, the mobility industry is considered a suitable case for this thesis both in terms of informative value, as it can help to provide an answer to the research question presented in Chapter 1.2, and potential benefits from research for the industry, respectively firms operating in it.

Building on the reviewed academic literature, primary data is collected from company representatives of different industry participants. Whilst the industry as such marks the case at hand, the organizations mark the units of analysis, and the company representatives are the subunits of analysis (Yin, 2018).

3.3 Data Collection

In terms of data collection methods, this study employed semi-structured expert interviews, commonly used for qualitative and abductive studies (Saunders et al., 2019). Using an extensive literature review as a foundation and guide, mostly open-ended questions were formulated and

merged into an interview guide (see Appendix A) that was used throughout all interviews. Generally, this mode of collecting data ensured that relevant topics were discussed and that all required data was obtained, whilst it simultaneously allowed the researchers to flexibly steer the interview in the most interesting direction as new topics emerged and ask follow up questions to probe the interviewee for more details (Bell et al., 2022; Saunders et al., 2019). Furthermore, it allowed minor modifications to be made depending on the company and the role of the interviewee at hand. Open-ended questions also give the interviewee more room to express her own opinions (Bell et al., 2022). Whilst semi-structured interviews with open-ended questions may bear the risk of having different foci, which can be avoided by employing structured interviews with closed questions (Bell et al., 2022), they were considered sufficient for this particular inquiry having its main focus on actively exploring relevant topics emerging from different industry players.

Interviewees were purposefully selected by the researchers (Creswell & Creswell, 2018). This study aimed to shine a light on the fragmented mobility industry in Germany in a single case study, by exploring the willingness of firms within the industry to cooperate. Thus, participants were chosen from firms that are active in the German mobility industry and actively selected based on the researchers' assessment of the relevant professional experience of potential interviewees and their job description. To increase the robustness of the findings, the researchers selected interviewees from heterogeneous firms with multiple different offerings, thereby, creating a multifaceted portrayal of the case industry at hand. For example, multimodality platform providers were interviewed whilst also public transport operators and public transport networks were included. A list of the interviewees is presented in Table 1. The interviewees were contacted through individualized E-Mail or LinkedIn requests, and it was openly communicated that the obtained data is treated confidentially throughout the entire process and that measures to guarantee anonymity are installed. Also, the needed timeframe was realistically communicated. This was supposed to establish credibility (Saunders et al., 2019).

Overall, eleven interviewees from eleven different companies participated in this study (see Table 1).

Number	Interviewee (Alias)	Company Type	Current Position	Date	Duration
1	Sabine	Carsharing	VP, Corporate Communications	25 March	35 min
2	David	Transport Operator	Head of Product Development, Apps & Platforms	04 April	50 min
3	Cathrin	Public Transport Network	Manager, Multimodality and Partnerships	07 April	40 min
4	Tom	Last Mile Scooter	Founder and CFO	06 May	46 min
5	Paul	Multimodality Platform	Senior Business Development Manager	14 April	55 min
6	Jeremy	Public Transport Network	Manager, Connected Mobility	19 April	50 min
7	Tobias	Public Transport Network	Department Head, Information Systems	19 April	35 min
8	Alyssa	Public Transport Network	Project Head, Connected Mobility	22 April	50 min
9	Stephan	Public Transport Network	Manager, Multimodality & Connected Mobility	24 April	44 min
10	Lisa	Public Transport Network	Head of Strategy & Communication	28 April	43 min
11	Esra	Public Transport Network	Manager, Multimodality	11 May	50 min

Table 1: List of Interview Partners

The interviews were conducted as online videoconferences. This mode was chosen since the focus of this study was on the German market and considered firms that were physically located in Germany. Choosing online videoconferences allowed the researchers to overcome barriers of geographic distance and efficiently arrange multiple meetings in a short period, whilst simultaneously reducing the environmental impact of significant efforts for traveling. The interviewees were given the opportunity to freely choose a platform for discussion. Mostly, Zoom and Microsoft Teams were chosen by interviewees. Since the interviewees were all

German, the interviews were also conducted in German language, possibly enabling the interviewees to speak more freely and with ease, thereby increasing the quality of insights.

A timeframe of 45 minutes was initially planned for the interviews. During the initiation process, the researchers identified minor shortcomings of this choice. Before agreeing to interviews, some interviewees indicated only shorter availabilities. Thus, the researchers had to adapt the targeted timeframe more flexibly, resulting in interviews ranging from 30 to 60 minutes. Following the researchers' best judgment, some questions considered less relevant for the individual interviewee were skipped, especially for timeframes below 40 minutes. This led to a reduced consistency and possibly also negatively impacted the sharpness of results. To control the associated risks, the share of interviews with a reduced time availability of participants was kept to a minimum.

Both researchers participated in the conducted interviews, which made different perspectives possible and built increased confidence in the findings (Eisenhardt, 1989a). After receiving the approval from participants, the interviews were recorded, giving the researchers the ability to, later on, analyze the discussions in detail. To increase the richness of divergent perspectives, the researchers allocated different roles for conducting the interviews (Eisenhardt, 1989a). On a rotating basis, one researcher functioned as the leading interviewer, asking questions related to the interview guide as well as probing questions, whilst the second researcher took notes, recorded the discussion, and functioned as the time-keeper (Eisenhardt, 1989a). Thereby, the leading interviewer took on a perspective from his interaction, whilst the passive interviewer had a more distant viewpoint (Eisenhardt, 1989a).

The interview guide consisted of four different parts. After a short introduction and discussion about general questions from the interviewee related to procedures, general questions about the interviewee's role at the company and their perception of currently important topics in the mobility industry were discussed. Secondly, interviewees were asked to provide their opinion on which factors are influential on interfirm cooperation, aiming to provide the interviewee with the possibility to mention factors without already being biased by the factors which the researchers presented in Chapter 2. The third part then consisted of asking interviewees for opinions on the relevance of factors found in theory and the individual importance for the company at hand. Lastly, closing questions were asked and the interviewees had the chance to provide a ranking of the most influential factors and elaborate on additional aspects that had not been covered in the prior interview questions. Overall, the formulated interview guide was

used by the researchers as a pool of potential questions from which the researchers choose the most relevant ones depending on the ongoing discussion.

Despite the inherent time constraint of this thesis, the researchers noticed that the amount of newly generated insights decreased after around eight interviews, resulting in the researchers' judgment that under consideration of the formulated scope and objective a sufficient level of saturation had arguably been reached (Creswell & Creswell, 2018). Hence, no further interview requests were sent out.

3.4 Data Analysis

Saunders et al. (2019) find that the result of data collection in qualitative research is non-standardized data that needs structuring and classification into categories or themes. This is ensured by employing data analysis procedures, comprising the organization, translation, and analysis of obtained primary data (Creswell & Creswell, 2018). In this study, a template analysis approach based on the pre-identified factors from Chapter 2, and further developed in the process, structured the data analysis (Saunders et al., 2019).

Template analysis is a specific type of thematic analysis, which offers a systematic and flexible approach to analyzing data from qualitative studies (Saunders et al., 2019). Since the amount of collected data in qualitative studies is often large, it is important to winnow the collected information (Guest et al., 2012), making sure that only components relevant to answering the RQ are considered (Creswell & Creswell, 2018). In this study, this was addressed through the template analysis allowing the researchers to use pre-determined *a priori* themes and propose a preliminary coding template for the obtained data early on (Saunders et al., 2019). Data collection and analysis often occur in parallel in qualitative studies (Bell et al., 2022; Creswell & Creswell, 2018). This was also implemented by the researchers of this study. Therewith, template analysis allowed the researchers to revise themes and codes where necessary throughout the entire process of data collection and analysis to explore newly emerging issues, which, otherwise, might not have been considered when commencing the study (King & Brookes, 2017; Saunders et al., 2019). By allowing modifications to the coding template as new data emerged, suggesting deficiencies in the model, template analysis enabled the researchers to undertake the different stages of analysis more holistically (Saunders et al., 2019). Thus, the

preliminary, theory-driven *a priori* codes were effectively supplemented with new practice-driven relevant *in vivo* codes continuously emerging from the analysis of primary data.

As summarized in Saunders et al. (2019), King and Brookes (2017) propose six stages of conducting template analysis. These steps functioned as the guideline for the analysis procedure of this study. However, due to the use of theory-driven *a priori* factors in conjunction with the preliminary conceptual framework resulting from this study's abductive research approach some modifications in the process were made.

Following King and Brookes (2017), the first stage includes the familiarization with the obtained data sets by closely studying interview transcripts and reflecting on the formulated goals of the study. Stages two and three include the preliminary coding of primary data and the clustering or grouping of codes, illustrating the relations between them. In stage four, the outcomes of stages two and three are summarized by producing an initial coding template, which is used to analyze the obtained data from expert interviews. In stage five, the initial template is continuously developed, incorporating new insights from data analysis. Lastly, stage six includes the application of the final coding template to all interviews.

In this study, the conceptual framework resulting from an abductive research approach was effectively utilized as the initial coding template for the obtained primary data. On the one side, it includes *a priori* factors derived from scholarly literature. On the other side, it also clusters these factors into firm-level, cooperation-level, and industry-level factors as proposed in stage three. Since the conceptual framework was utilized as an initial coding template, it was also employed as a guideline for transcribing the interviews called for in stage one. After having obtained primary data through expert interviews, the information was organized and prepared for analysis by transcribing and translating relevant statements (Creswell & Creswell, 2018). Thereby, the researchers structured and coded transcribed sentences or paragraphs, and segmented them into specific categories according to the template (Creswell & Creswell, 2018; Saunders et al., 2019). This allowed the researchers to get an overview of the factors' relevance, both in terms of quality and quantity, and posed the basis for the elaboration of findings in Chapter 4.2. In line with stage five, the interviews were continuously analyzed in accordance with the initial coding template, and new data was categorized by incorporating newly emerging *in vivo* codes (Saunders et al., 2019). This iterative process allowed the researchers to add new or modify existing themes, patterns, and codes (Saunders et al., 2019). Once all interviews were conducted and analyzed, lastly, the final coding template was applied to all interviews (Saunders et al., 2019). Based on this analysis, the findings related to the interconnectedness of

theoretical and practical themes discovered are presented and discussed, and the revised conceptual model including new insights from the data analysis is presented.

3.5 Validity, Reliability, and Ethical Considerations

The quality of qualitative research is decisively influenced by its validity and reliability, despite their applicability to qualitative research being contested by some (Guba & Lincoln, 1989; Saunders et al., 2019). To achieve validity and reliability, multiple measures were taken.

Reliability, which describes to what extent data collection and analysis will yield consistent findings if replicated (Saunders et al., 2019), can be weakened by various factors including: subject or participant error, subject or participant bias, observer error, or observer bias (Robson, 2002; Saunders et al., 2019). Whereas a certain degree of bias and error might always remain, the researchers tried to limit those as much as possible in the scope of this thesis. For that, interviewees were assured absolute anonymity to prevent the fear of saying 'something wrong', interviews were conducted together and with changing conversation leaders to enable both researchers to observe conversations alternatingly, and impressions of interviews were always discussed in debriefings afterward to avoid singular interpretations (Creswell & Creswell, 2018). As the researchers worked in a team of two, regular progress meetings were held, and the next steps were continuously documented in shared documents (Creswell & Creswell, 2018). In addition, the interviews were analyzed manually and both researchers coded and analyzed separately at first, which ensured independent perspectives before consolidating the analyses (Creswell & Creswell, 2018) and therefore improved internal reliability (Saunders et al., 2019). Moreover, to minimize the bias of interviewees' opinions and perspectives, interviewees were chosen as diversely as possible, enabling the researchers to gather information from different perspectives of the mobility industry. This was also proposed to increase the validity of the research (Yin, 2018).

Validity refers to whether the findings are accurate based on the used procedures (Creswell & Creswell, 2018). As with reliability, validity can also be hampered by various factors (Robson, 2002; Saunders et al., 2019). To ensure validity, the authors followed the suggestions from Creswell and Creswell (2018). To avoid misunderstandings of the questions posed, the researchers provided explanations for ambiguous questions. Moreover, as most interviewees demanded to receive the questions in advance, written explanations for potentially ambiguous

questions were added to the interview guide to avoid interviewees to prepare answers based on an initial misunderstanding. Furthermore, to prevent insufficient and imprecise responses as well as hesitation to provide insightful answers (Saunders et al., 2019), the interviewees were able to decide on the interview's parameters, such as date, time, and online conferencing tool. Additionally, the researchers followed the suggestion from Creswell and Creswell (2018) and triangulated the data by presenting previous findings to interviewees with the objective of validating assumptions about thematic themes. Also, people external to the research were consulted with regard to the objective comprehensibility of the research approach (Creswell & Creswell, 2018). Moreover, peer debriefings to avoid researchers' biases with regard to handling and interpreting the data also increased the study's validity (Creswell & Creswell, 2018). To present the findings in a realistic and accurate form, with the smallest exposure to interviewee-bias possible, which might be caused by the feeling of needing to comply with firm regulation and brand image guidelines, the researchers were especially interested in seemingly uncommon and critical opinions (Creswell & Creswell, 2018).

Ethical issues were considered through transparent and proactive communication with interviewees, as well as repeated communication of the possibility to ask questions about the study, the handling of data, and interview procedures at all times (Saunders et al., 2019). All study participants were assured that their identities would be anonymized and that they will be given pseudonyms. At the beginning of each interview, participants were explicitly asked for their informed consent to be recorded for analysis purposes before the recording started. Final recordings are stored securely and without the possibility for external parties to access them (Saunders et al., 2019). Whenever interviewees were concerned with, for example, their anonymity, they were given an extensive explanation of how their concerns are addressed (Creswell & Creswell, 2018) and the option to withdraw from the interview (Saunders et al., 2019). Moreover, all interviewees were promised to receive the final thesis, emphasizing the researcher's commitment to using and analyzing conducted data in a way that will not cause any concern from study participants.

3.6 Limitations

The applicability of the findings suffers from various limitations. First and foremost, the limited time which was available for conducting qualitative research and writing the thesis narrowed the scope of it. This potentially led to incomplete data collection caused by interviewing too

few study participants, subsequently resulting in limited generalizability of the results due to insufficient external validity (Saunders et al., 2019). However, referring to Greene and Caracelli (1997), Creswell and Creswell (2018) note that generalizability is not the primary goal of qualitative research, but particularity is. Nevertheless, Yin (2018) claims that results from case studies can be generalized to a certain degree. Besides the time limitation, the number of interviewees was also constrained by a below-expected responsiveness of firms or their representatives. Many firms denied participation due to availability constraints. This might have also been influenced by the ongoing pandemic as well as the general economic decline due to the war against Ukraine.

Additionally, the primary research is based on a list of factors that the authors identified during the literature screening and reviewing process prior to the interviews. Potentially, some important factors might have been unintentionally neglected. That risk, however, is minimized by initially researching the factors individually to have two independent searches as well as by asking all interview participants after completion of the interview guide's questions if any practically relevant factors had been forgotten.

Moreover, the results might be biased towards the opinions of those that were willing to be interviewed as well as influenced by the researchers' collection of firms and individuals that were contacted with the non-probabilistic approach (Creswell & Creswell, 2018). Therefore, it is possible that employees from other firms might have answered differently and that a replication of the study yields slightly different results. That difference can be mitigated by a good documentation of procedures (Creswell & Creswell, 2018). Hence, the researchers documented the process thoroughly. However, replication is often not necessarily feasible nor meaningful in qualitative research (Saunders et al., 2019).

The influence of the researchers' potential preconceptions could also have influenced the analysis of the data, additionally to potentially having influenced its collection (Galdas, 2017). On that note, the nature of biases might have led to the researchers neglecting them due to unawareness (Galdas, 2017), which could have resulted in, for example, a certain degree of subjectivity. Reflecting on this, however, is seen as a core characteristic of good qualitative research (Creswell & Creswell, 2018)

In addition, the researchers' limited experience with qualitative research might have influenced the research as a whole as well as its separate components. In particular, missing experience in conducting semi-structured interviews may present a shortcoming of this study. Further,

another form of data analysis, for example, using software, might have yielded other or further insights than the process that was chosen.

4 Findings and Analysis

In this section, both a brief industry analysis and the findings from conducted interviews will be presented. In the end, a revised framework will be developed and presented. By incorporating the findings, the framework is then tailored to fragmented industries.

4.1 Analysis of the German Mobility Industry

The industry analysis is supposed to help the reader gain an understanding of the current dynamics in the industry and allow for better contextualization of the findings. Besides, it shall show the value of interfirm cooperation, also from the customer perspective. Due to the focus on the German mobility industry's fragmentation, the PESTEL analysis will mainly illustrate the underlying factors for that. Hence, the analysis is not supposed to be exhaustive in other areas.

4.1.1 Industry Definition and Scope

Whereas the notion 'mobility industry' is not clearly defined, the researchers use it to describe those firms that offer transport solutions to the general public. For the purpose of this thesis, upstream firms were explicitly excluded, such as car manufacturers or rail production companies. Thus, firms in the mobility industry refer to providers of public transport companies (both national- and regional), carsharing, and last-mile mobility (e-bike- and e-scooter, bike-sharing, etc.). This delimitation was purposefully chosen to mitigate the risk of defining a too broad focus for this research in light of the predetermined scope and to gain valuable insights.

4.1.2 Political Factors

Germany is a federal parliamentary democracy with a broad array of parties, ranging from left- to right-wing. Since the last federal election in autumn of 2021, the green party has become part of the government coalition, together with the social democratic party *SPD* and the liberal party *FDP*. Legislative power lies with the *Bundestag* (parliament) and the representative body of the 16 states, the *Bundesrat,* where the latter is only involved when budgetary issues of the states

are concerned. Germany's political system is based on federalism, where the 16 states have many responsibilities delegated to them. This often leads to inconsistencies between states and hampers the decision-making process for state-crossing issues. This geographic fragmentation is amplified by numerous different state governments, consisting of combinations of all six major parties. This political fragmentation often makes it difficult to implement nationwide changes. Public transport is one of those political areas which is delegated to the states and is subsequently rather decentralized with fragmented decision-making authorities.

Nevertheless, the new government coalition has emphasized their willingness to strengthen public transport as part of their overall goal to mitigate climate change and enable comprehensive sustainability efforts. However, many demand that the government develops an overarching public transfer law to integrate different means of transport, unify the legal foundation across all states, and make cooperation easier for mobility providers (Delhaes, 2022).

4.1.3 Economic Factors

Germany is an overall wealthy country with a GDP per capita of USD 46,208.4 (The World Bank, 2020) and a comparatively steady economic growth. Currently, 639 public transport companies operate in Germany, employing around 310.000 people (VDV, 2022). The total amount of mobility providers in Germany additionally includes carsharing-, e-scooter-, bikesharing-, and all other types of mobility providers. As of 2022, there were 243 carsharing providers (Bundesverband CarSharing, 2022), six e-scooter providers (Civity, 2022), and an unspecified number of other forms such as bike-sharing providers in Germany. Whereas there is no aggregated number of how many firms operate in that market in total, the immense number of almost 880 companies in the form of public transport and carsharing alone already hints at the industry's fragmentation. Initiatives like 'Mobility inside' (Mobility Inside, 2022) aim at integrating the highly dispersed and fragmented offering landscape into one application, including one ticketing system and more convenient multimodal travel. This fragmentation of offerings and providers might be addressable through newly evolving and popularity-gaining concepts like MaaS (Hietanen, 2014). Prices for public transport have risen in the last years, more than those for car drivers (BMVI, 2021; Wolff, 2021). Furthermore, prices vary across different cities and public transport companies, despite the service being the same, posing an inconvenience for customers (Prack, 2021). Societal trends, such as the increasing popularity

of working from home (Hans Böckler Stiftung, 2021) or the focus on hygiene as a result of the pandemic, have the potential to change the way people use public transport (Nobis, 2021). Whereas people previously often used public transport to commute from and to work, for example, leisure activities could become more prominent as a reason for people to travel. This might also have an influence on how mobility providers configure their offerings.

4.1.4 Social Factors

Approximately 55 million citizens from suburban and rural areas have little or insufficient access to public transport, from which a majority could be connected to the public transport network through further forms of mobility (Handelsblatt, 2021). The majority of distances are covered by car, with the share of cars in the multimodal mix being larger in rural areas (Kuhnimhof & Nobis, 2018). 37 percent of people use various forms of transport regularly, with young people from urban areas being the largest group of those (Kuhnimhof & Nobis, 2018). 60 percent of participants of a study for the project 'BeMobility 2.0' stated that the combination of public transport with free-floating carsharing offerings increased the attractiveness of public transport (Rid et al., 2017), showing the value of complementary use of different forms of mobility. Carsharing is mostly used as a substitution for public transport where the utility of a car is superior to that of the public transport offering but people do not own a car themselves (Kuhnimhof & Nobis, 2018). That again implies that the means of transport are complementary and are used based on the requirements of the travel.

Population density varies across different parts of Germany (Statistisches Bundesamt, 2021), implying that the needs of customers differ and flexibility in the mobility offerings is needed. Arguably that is easiest through an integrated, holistic mobility concept. E-Bikes, for example, can be seen to be an important means of transport to enable people from lower-density, rural or suburban areas to participate in the public transport network (Kuhnimhof & Nobis, 2018). Integrations of such last-mile mobility solutions could, therefore, eliminate the need for potentially unprofitable or resource-inefficient extension of the public transport network itself, which, if it was necessary, might have negative consequences on the frequency and availability in urban areas. The rise in citizen participation (Lindenau & Böhler-Baedeker, 2014) might help to develop such integrated mobility solutions in the future.

4.1.5 Technological Factors

The smartphone user penetration rate in Germany across all ages is forecasted to exceed the 90 percent mark by 2023 (Statista, 2018), providing the foundation for an integrated, digital public mobility offering. Mobile internet, in addition, has had a market penetration of 80 percent in 2020, compared to only 54 percent in 2015 (Kantar, 2021). This shows an increased digital readiness, at least with regards to the possession of the technological foundation for digital services, which is indispensable in the current landscape of numerous applications in the mobility industry as many forms of mobility, mainly carsharing and e-scooter, are only accessible through smartphones. Nevertheless, only 17 percent of German citizens are capable of buying a ticket for mobility solutions on a mobile phone (Kuhnimhof & Nobis, 2018), emphasizing the need to develop a mobility solution which has a focus on convenient and simple usability through an integrated offering, strongly contradicting the current fragmented industry situation.

With regards to the technological capabilities of the transport vehicles, the European Union has implemented the duty to publish traffic and other data in the machine-processable format GFTS (European Union, 2017). Many companies, however, still fail to comply with that, further hindering the shift towards an integration of different services and maintaining the fragmented industry situation. Article 3a of the new version of the *Personenbeförderungsgesetz*, however, requires all public transport companies to provide comprehensive real-time data until July 2022 at the latest.

4.1.6 Environmental Factors

Germany is a leading country in pursuing the sustainable development goals (SDGs) from the United Nations (Petersen et al., 2021). On average, 1000 inhabitants own 527 cars (Kuhnimhof & Nobis, 2018). Traffic is the third-biggest carbon-emission polluter with a share of approx. 20 percent, from 94 percent come from street traffic (Bundesregierung, 2022). The impact on the environment is lower when different modes of transport are used, instead of only using one's car (Kuhnimhof & Nobis, 2018). That underlines the potential of combining different forms of mobility. The general societal awareness of the need for change with regards to sustainability has increased, caused by, among other factors, the *Fridays For Future* initiative's popularity in Germany (Alscher et al., 2021). Accordingly, 67 percent of Germans stated that the protection of the environment and climate is of high importance, making it one of the most important

societal concerns (Gellrich et al., 2021). Hence, Germany can be argued to be relatively open to taking measures that benefit the environment. That willingness, however, might be impacted by the convenience of using more sustainable forms of transport, potentially both positively and negatively. Thus, a fragmented mobility industry that leads to an inconvenient, inefficient, and user-unfriendly mobility service landscape can decrease the generally high openness to take action for the climate. Cooperation to decrease fragmentation might yield higher customer satisfaction and increased demand through better, integrated offerings.

4.1.7 Legal Factors

As previously stated, no overarching public transport law exists in Germany. Overall, public transport responsibilities are separated into two areas (European Union, 2007):

(I) Rail public transportation ("SPNV") is the responsibility of the states. Those often initiate companies to coordinate those services, with a total of 27 companies existing across the 16 states. Hence, some states have initiated more than one company for that matter. Those companies then sign contracts with mobility providers and determine what is required from them. The only connection between the 27 companies is that they are all part of the *Bundesverband Schienennahverkehr,* whereas the 16 states come together through the *Bundesarbeitsgemeinschaft Schienenpersonennahverkehr*, ("BAG-SPNV*")* for region-crossing matters. The legal basis of the rail public transportation is the *Allgemeines Eisenbahngesetz* ("AEG"). The *Deutsche Bahn*, the main long-distance rail company in Germany, is wholly owned by the federal government.

(II) For road public transportation ("ÖSPV"), usually the municipalities are responsible and initiate their own public transport organizations. This part of public transport underlies a different legal basis, namely the *Personenbeförderungsgesetz* ("PBefG").

This only covers the governmental public transport operations. Other types of mobility often have a further legal foundation, for example, the carsharing law ("CsgG"). Hence, one can also see the mobility industry's fragmentation in the fragmented legal foundation, which implies that nationwide cooperation and integration are likely to be difficult to establish.

Another noteworthy legal issue is the comparatively strong and advanced data privacy law in Germany. It is based on the EU-wide General Data Protection Regulation ("GDPR") but complements, specifies, and modifies it (Deloitte, 2022). Fragmentation of the mobility industry, thus, might also be due to the challenging implementation of an interfirm cooperative offering with regards to its legal requirements.

This brief industry analysis of the PESTEL factors illustrates potential external, macro-level contributing factors to the industry's fragmentation into over 880 companies. Although some initiatives and organizations against the fragmentation have been initiated recently, such as HVV switch in Hamburg (HVV, 2022) and Jelbi in Berlin (Jelbi, 2022), the majority of customers still need to install various applications, register for various services, and understand different pricing systems. This fragmentation can also be seen in the increasing popularity of the concept of MaaS (Hietanen, 2014), which aims to overcome fragmentation, consolidate the offerings, and decrease fragmentation for the benefit of the customers.

4.2 Factors Influencing Firms' Willingness to Cooperate

In this section, findings from conducted interviews will be presented. It is structured based on the factors identified in Chapter 2 and presented in Figure 1. This allows the researchers to investigate the relevance of each factor in the fragmented German mobility industry, hereby helping to answer the research question. Findings that exceed and complement the preliminarily defined factors will be presented in Chapter 4.3.

4.2.1 Firm-Level Factors

Need for Resource and Capability Acquisition

The need to acquire resources or capabilities has been found to be of medium importance in the willingness to cooperate horizontally with other firms in the German mobility industry. Mentioned resources and capabilities to be popular to be acquired through cooperation are reputation and reach (Interviewee 1), public spaces and infrastructure (Interviewee 5), brand value (Interviewees 4 & 8), and capabilities with regards to digitalization and data handling

(Interviewees 3 & 10). Reputation and brand value can be argued to be competitive advantages that are non-imitable (Barney, 1991; Wang et al., 2018) and thus require cooperation in order to be obtained, posing a potential explanation of why this aspect was mentioned by respondents. Interestingly, obtaining reputation and brand value appears to be multi-directionally present, with both private-sector firms wanting to benefit from public transport's trustworthy reputation and public transport wanting to benefit from private-sector firms' brand popularity and brand awareness. On that note, Interviewee 8 also perceives obtaining reputational advantages to become increasingly important and influential on cooperation in the mobility industry, claiming that commercial firms use cooperation with public transport companies to greenwash their own brand in view of sustainability efforts. Despite the questionable objective of greenwashing, reputation and brand value were thus seen to pose a big influence on cooperative behavior in the industry.

"You must always ask yourself: do you also want to be the expert in that area?"
(Interviewee 4)

Interviewee 5 stated that his firm quickly realized that to realize operational and strategic goals, and execute their business idea, cooperation is obligatory. He argued that this is because a firm cannot know and do everything and even if it tried, that would incur substantial costs. Hence, firms are dependent on the acquisition of external resources and capabilities, especially if their business model involves offering a wide range of products and services. Time-compression diseconomies were not mentioned as an influential reason for the importance of needing to acquire resources or capabilities in this data set.

Wanting to Increase Flexibility

The willingness to cooperate based on the objective to increase one's flexibility has not been found to be significantly important. Most interviewees considered flexibility important but did not find that this particularly influences the willingness for cooperation. Nevertheless, Interviewee 10 stated that path-dependency and historical relationships between firms have a large influence on cooperative behavior in the German mobility industry, thereby decreasing the more rational influence of the market mechanism on cooperative behavior. Those historical (non-)bindings between firms in the industry and their importance for cooperation could,

therefore, mitigate and hinder the somewhat opposing objective of increasing flexibility with regard to the cooperation willingness.

Nonetheless, even though Interviewee 5 mentioned this in the context of the *Need for Resource and Capability Acquisition*, cooperation with other firms to avoid the incurrence of substantial costs for trying to develop and establish everything in-house could also pose a rationale for the use of cooperation to be more flexible and not bear all efforts. In that context, the researchers recognized that some factors appear to have an overlap which led to respondents denying the influence of one because it was already covered by another factor.

Wanting to Learn from Partners

Willingness to cooperate because of the desire to learn from partners has been found to be one of the most influential factors.

"We don't all have to make the same mistakes." (Interviewee 1)

Even though the industry is very fragmented, with a lot of different firms competing for market share, most companies considered the market interplay of fair nature. Interviewee 3 explained that "it is very important that we learn from and with one another". That is also supported by Interviewee 2 who stated that his firm makes intentional and frequent use of the possibility to ask partners for advice. Besides this intentional use of cooperation to learn from one another, the interviewee noted that learning, even if not the primary objective, always occurs at least as a by-product of every interaction between organizations. This, again, then increases the attractiveness to cooperate with another. Notably, most respondents that considered this factor particularly influential worked at public transport organizations whereas very few worked at private-sector firms. Arguably, this could be connected to the idea proposed in Chapter 2 that learning from one another is seldom an equal relationship, with some firms having more to give than others. Private-sector firms might often have more resources at their dispense, potentially making them more knowledgeable, rendering a cooperation to learn from one another less valuable than for firms with a higher interest in and need for outside knowledge, like publicly funded, state-controlled firms. Here, private-sector firms might consider cooperations to have an uneven benefit-to-risk ratio (Mohr & Sengupta, 2002), hence making them less attractive with regard to the objective to learn from one another.

Innovation Performance

In this study's data set, the influence of the innovation performance on the willingness of firms to cooperate in the German mobility industry has been rather low. Nevertheless, Interviewee 1 noted that she considers her firm's own capabilities to be improved by taking external ideas and approaches into account. She proposes that external ideas could leverage internal capabilities, yielding better outputs than without the consideration of external ideas. That thought was confirmed by Interviewee 10, who stated that new ideas often come from the outside and that, talking about her firm as a public transport network, firms like the one she works for tend to be sluggish with regards to innovation. Therefore, cooperation can be a way to improve one's innovation performance, even though this was stated by very few respondents. Interviewee 2, interestingly, stated that whereas he does not see this factor to be of particular importance with regards to product- or service innovation, he considers cooperation to be a valuable source of process innovation with regards to work methods and structures. This multitude of forms of innovation has been proposed by various researchers (Kahn, 2018; Sawhney et al., 2006). Whereas this was not the core of the factor which the researchers initially proposed in Chapter 2 to be potentially relevant, the statement widened the scope of this factor and arguably also its relevance. However, in that context, Interviewee 2 also claimed that Innovation Performance is rarely something that a cooperation is based on, but rather a by-product of a cooperation that has other or at least additional objectives that led to the firms' cooperation. That statement weakens the importance of this factor with regards to the decreased causality of it for the willingness of firms to cooperate. Thus, overall, the findings suggest a low importance of the factor for firms' willingness to cooperate in the German mobility industry. Nevertheless, this finding might be very specific to this industry, and the importance of the factor can be more extensive in industries in which the innovation intensity is higher, such as consumer electronics.

Managerial Knowledge and Capabilities

"It always comes down to the acting individuals." (Interviewee 7)

Managerial knowledge and capabilities were claimed by various respondents to have a large influence on a firm's willingness to cooperate with others. In some instances, a change in the firm's C-Suite fundamentally changed its position towards many issues, including cooperation (Interviewee 2). Interviewee 8 proposed that the managers' open-mindedness and courage are

of crucial importance, claiming that a lack of those characteristics would prevent firms from even considering the value cooperation can provide. That claim was supported by Interviewee 10, who stated that to recognize what chances cooperation provides and how cooperation shall be managed, managers need to be able to switch perspectives and empathize with the respective other's situation and thoughts. This claim has also been made in the literature, with Finkelstein et al. (2009) and Tricker (2019) arguing for the influence of such personality traits on the manager's perception of her strategic environment, like opportunities to cooperate. On that note, Interviewee 7 also proposed that some managers are more visionary than others and allow more ideas to emerge than others, strongly influencing the firm's inclination to cooperate. However, he argued, this is not solely true for management but also other parts of the workforce. The importance of knowledge and capabilities of below-management employees has also been underlined by Interviewee 8, who stated that whereas managers are often capable of seeing the value in cooperation, a lot of resistance in that regard originates from other parts of the workforce. That, she proposes, could be because of closed-mindedness and fear of losing significance due to a lack of understanding and involvement. In general, Interviewee 4 argued that the willingness of firms to cooperate with one another is strongly influenced by the human factor. The repeatedly mentioned influence of the workforce's inclination towards cooperation was surprising, as literature mainly considered the executing bodies of a firm to influence the firms' willingness to cooperate.

Interviewee 6 stated that sometimes managers fall victim to emotional aversion among each other, hampering their ability to rationally evaluate the value of potential cooperation. Hence, it might not only be what managers know and are capable of, but also to what extent they utilize or are able to utilize that knowledge. Arguably, that is a rather situational matter and depends on the individual context a firm and its managers are operating in. Nevertheless, it ties in with the widely-assumed bounded rationality (Simon, 1990), showing how cognitive weaknesses can influence the extent to which executive individuals have an influence on a firm's actions.

Overall, not only the management's knowledge and capabilities, but also other factors related to human interaction like engagement (Interviewee 6), or the reflection of own behavior (Interviewee 7) appear important in determining the willingness and success (Interviewee 4) of firms to cooperate.

Corporate Governance and Ownership Structure

The influence of corporate governance and ownership structure on firms' willingness to cooperate in the German mobility industry was found to be of importance in the examined data set, albeit based on different argumentations. Those real-life explanations far exceed what literature has proposed.

Interviewee 3 stated that as a public transport network, her employer is state-owned and thus aims to provide a comprehensive mobility infrastructure, in contrast to "solely aiming for profits" like many private-sector firms. Having a goal that de-emphasizes profits, resulting from the network owner's interest, strongly influences the network's willingness to cooperate when cooperation could help achieve that at the expense of profits. Besides this argument underlining the influence of corporate governance and ownership structure, other interviewees provide further reasonings for its influence. Interviewee 9, for example, supports the claim of the ownership structure's influence but attributes that to a higher level of trust for public organizations, increasing other firms' willingness to cooperate with them. This was stated to be of particular importance for carsharing firms (Interviewee 9). Interviewee 5, however, claimed a higher level of trust to also be a facilitating factor for cooperation-partner attractiveness of private-sector firms that are supported by large and well-known brands.

Interviewee 4 claimed that "the state and bureaucracy deter start-ups, whereas start-ups deter the state", referring to the differences in stability, ventures, and predictability, thereby also underlining the influence of this factor on the willingness to cooperate with one another. On that note, he also argues that large corporations are often less willing to cooperate because the acting individuals have more downside risk than upside potential to gain from the decision to cooperate, considering the required financial and human resources.

Furthermore, Interviewee 8 stated that the form of the owner, in their case the state, can also act as a lever to enforce cooperation through dependencies or powerful positions in other areas. For example, if the state is also responsible for distributing parking spaces for private sector carsharing companies, it could use its position to enforce cooperation as a side condition of other agreements. This powerful influence of the owner is not exclusive to the state as, for example, larger firms could also possess a lever or even be so large that multiple firms belong to the same owner, again positively influencing the willingness to cooperate between those firms with a mutual owner (Interviewee 8).

Interviewee 5, moreover, mentioned that the form of a firm owner, and its subsequent governance structure, influences the willingness to cooperate with regards to accountability for actions. More precisely, he claimed that if firms are owned by the state, more stakeholders must agree with strategic actions like cooperation, and the firm is accountable to a wider range of stakeholders, namely all taxpayers, which could slow cooperative action down or lead to its complete termination. Here, Interviewee 9 argues, that private-sector companies have easier conditions to cooperate.

Nature of Knowledge to Be Shared

Rather few respondents considered the influence of the nature of knowledge to be shared on the willingness to cooperate with other firms significant. Among those that considered this factor influential, Interviewee 3 argued that this influence is largely contingent on the characteristics of the potential partner and what kind of cooperation is discussed or planned. Nevertheless, generally, she stated that the firm is very cautious when sensitive data is involved and supposed to be shared. Hence, the nature of the knowledge to be shared is an influential factor and could act as a bar-raiser when evaluating potential cooperation partners. Interviewee 6 raised the interesting connection between the quality of a relationship between firms, may it be in a cooperation or not, and the nature of the knowledge that is shared. He stated that firms sometimes chose to disclose less knowledge when relations are sub-optimal. On the other hand, Interviewee 3 claimed that the better the quality of an interfirm relationship is, the more sensible data will be disclosed, and the better the cooperation's outcomes will be.

Furthermore, both Interviewees 5 and 8 separately mentioned that the type of firm, namely whether it is a private- or public-sector firm, has a large influence on the relevance of this factor. They argue that this factor is of larger importance for private-sector firms, potentially suffering from loss of market share or profits resulting from a spillover of sensible information. Therefore, if two or more private-sector companies are part of a cooperation, or are supposed to be part of one, their willingness to cooperate is contingent on the nature of the knowledge they would have to disclose for it. Interviewee 5 mentioned that this issue is of particular importance in the context of platforms, with many industry participants trying to establish an industry-leading platform but failing to do so because private-sector competitors are unwilling to disclose their information on their respective competitors' platforms. This fear of knowledge spillover as a result of cooperation among firms with the same technological focus of

establishing a platform is confirmed by the literature to be justified, having found spillover effects to be strong for organizations in similar technological domains (Feldman, 1999; Jaffe, 1986). However, this problem of fewer cooperation on platforms through fear of knowledge spillover then leaves a range of incomplete platforms and might be a reason for a potential next stage of fragmentation in the industry, where it is not individual firms that are the units of fragmentation but various incomplete platforms.

4.2.2 Cooperation-Level Factors

Strategic Fit

This factor has been found to be very influential on the willingness to cooperate with one another based on this study's participants. Various perspectives on and arguments for that have been provided, making this factor one of the most important ones.

"We would never cooperate with [a specific profit-driven carsharing provider]"
(Interviewee 1)

Interviewee 1 stated that her firm has very high standards with regards to issues like sustainability and CSR, rendering companies that do not comply with those disqualified for cooperation activities of any sort. Notably, she implicitly referred not only to environmental sustainability but also to social and economic sustainability, a distinction also proposed by Hutchins and Sutherland (2008). As an example, she mentioned that certain mobility providers do not meet their standards with regard to working conditions. The more similar both mindset and objectives are between firms, the more willing her firm is to cooperate with another firm (Interviewee 1). The importance of goal concordance was, among many more, also mentioned by Interviewee 3, who stated that they are much more willing to cooperate with other firms that share the same vision with them. This, he argued, could partially be facilitated by a stronger and more binding form of cooperation. Interviewee 2 also confirmed the importance of the strategic fit for his firm's willingness to cooperate, defining it as a "core aspect" which is fundamental for interfirm cooperation. After all, he argued, a strategic fit helps ensure that a joint product with actual value for the customer results from the cooperation.

Interviewee 6 claimed the difference in the degree of profit-drive to be an underlying condition and potential problem for the strategic fit between firms, arguing that if one firm solely aims

for profit increases and the other has the obligation to provide comprehensive mobility infrastructure for all people, a cooperation is less likely to happen or at least harder to negotiate and implement. That statement aims at the goal discrepancy between many private-sector carsharing and e-scooter firms and the state-ordered public transport networks and organizations. Like many other respondents, he elaborated on the problem of providing sufficient mobility infrastructure in suburban and rural areas as a result of that goal discrepancy. In his opinion, different mobility firms work best if they aim to complement each other and together provide a coherent and comprehensive mobility infrastructure. As public transport networks and organizations do not have the resources to cover low-density areas as they cover cities, they consider carsharing and last-mile firms to be the optimal solution for that problem, as those allow people to access the existing public transport infrastructure (Interviewee 8). Private-sector firms, however, do not aim at providing infrastructure to everyone, and have no obligation to do so, but aim at maximizing profits which naturally contradicts offering services in low-density areas (Interviewee 9). It is apparent that the lack of strategic fit between private- and public-sector firms, where the latter is not accountable to any shareholders but the general public, is an influential matter with regards to the willingness of those firms to cooperate.

Interviewee 7 confirmed this issue, stating that his firm, a public transport network, more conveniently cooperates with firms that do not have the pressure to make profits, hence having a better strategic fit with his firm. Nevertheless, disagreeing with Interviewee 10 who claimed that a lack of strategic fit can cause a definitive unwillingness to cooperate, he argues that some private-sector, profit-driven firms have such indispensable resources or capabilities that the lack of strategic fit must be accepted and worked with since a cooperation is alternativeless. Moreover, he stated that besides the remaining misfit in terms of profit orientation, different types of mobility firms have recently started to align their goals towards establishing a coherent and integrated mobility solution for the customers. That aspect will be presented in more detail in Chapter 4.3. Since the key objectives need not be identical if the cooperation adds value to all cooperating firms overall (Schilling, 2020), this trend towards a mutual goal can facilitate cooperation despite different strategic foci and key objectives. This is also confirmed by the practical experience of Interviewee 4.

Level of Modularity of Products and Services

The influence of the level of modularity of products and services on the willingness of firms to cooperate with one another did not receive significant support from respondents. Interviewee 3 claimed that true modularity does not exist anyway and that each firm, each product, and each service is different to some degree. Hence, she claims that theory and practice are non-compliant. The low support from respondents might have also been partially caused by a certain degree of misunderstanding of this factor, with comparatively many respondents having trouble grasping the idea behind this factor at first. Whereas the researchers were then able to help respondents understand this factor, it still hints at the possibility that respondents were not able of estimating the influence of this factor accurately due to a lack of understanding. Interviewees 5 and 8, however, saw an influence of this factor with regards to the trend towards platforms in the industry, claiming that the more modular products and services are, the easier and more likely a cooperation is. Nevertheless, both the little empirical support and the initial lack of understanding were rather peculiar, since one might assume that a certain level of product modularity poses a prerequisite for the possibility to cooperate or that firms at least are aware of the effort that accompanies the integration of non-modular products and services. Hence, the apparent low influence of the factor was comparatively surprising.

Pooling of Resources and Risks

"There are some things that others can do better than us – so we just use their expertise."
(Interviewee 2)

The pooling of resources and risks was found to be one of the most important factors. Most respondents stated that to offer a comprehensive mobility infrastructure for customers, cooperation as a means to pool resources and risks is obligatory. Even though there is still a lot to be done in terms of resource consolidation (Interviewee 8), a minimum amount is required to offer a useable mobility infrastructure at all, albeit very basic with a lot of upside potential. That is, no firm from this data set even tries to or is able to cover all forms of mobility but intentionally leaves various parts to others. That refers both to the product offering, like not offering busses, trains, carsharing, and the last-mile all by oneself, but also the geographic coverage, like not having the ambition to offer mobility infrastructure throughout the entire country but having a geographical focus (Interviewee 1). Overall, most firms want the customer

to have mobility options wherever they are, without necessarily always being the mobility provider of choice.

"Customers shall have mobility options even when we can't offer them any." (Interviewee 7)

Nevertheless, all firms want to gain and maintain their share of the market despite being one among many providers (Interviewee 5). Today, there are multiple forms of mobility and customers use a "chain of mobility" (Interviewee 3), whose offering can only be realized through cooperation and the pooling of resources and risks. To find one's place in this "chain of mobility", a firm needs to be aware of where its competencies lie. Additionally, after having identified lacking competencies, firms need to accept that and work with that limitation (Interviewee 2). Working with that limitation effectively refers to initiating cooperation which is an adequate means to supplement one's competencies in order to create a coherent, firm-spanning whole (Interviewee 2). Interviewee 5 stated that "[they] cooperate to offer the customer services that [they] would not be able to offer [them]selves". On that note, firms do not only use cooperation to supplement their own shortcomings but also to further utilize their own strengths through cooperation with others (Interviewee 2). To create the most value from pooling all industry participants' resources, firms should align their efforts to the best of their abilities (Interviewee 6), for example by using existing systems from other firms, if they are willing to share, instead of developing the same system on one's own (Interviewee 11).

The pooling of financial resources has also been mentioned to be influential on the willingness of firms to cooperate with one another in the German mobility industry. Amongst others, Interviewee 1, stated that building a sufficient charging infrastructure for mobility vehicles, especially carsharing cars, is, for example, an aspect where industry participants must pool financial means. Such an extensive undertaking, she argues, is not feasible for any individual industry participant to execute. Correspondingly, Interviewee 10 underlines the importance of cooperating to realize financially intensive projects. This is in line with Hagedoorn et al. (2000), who state that the need for sharing costs and risks through cooperation is especially important when more uncertainty is involved, which can arguably be said to be true for the still rather recent emergence of battery-electric vehicles ("BEV") and the subsequent charging infrastructure.

Besides the pooling of resources to offer a comprehensive mobility and charging infrastructure, the pooling of risks has also been mentioned by some respondents to be influential. Interviewee 2 noted that risks, especially large ones, are preferably transferred to others by not developing

something in-house but simply integrating the product or service through a cooperation partner. This allows for an assessment of the risk-inhibiting product or service without having to bear that risk oneself. Nevertheless, pooling risks was mentioned surprisingly few times, with the focus being clearly on pooling resources.

Geographic Distance

The geographic distance of firms has received moderate support to be an influential factor on the willingness for interfirm cooperation by the respondents. Like most others, Interviewee 3 argued that the geographic origin of a firm does not directly influence whether her firm is more or less willing to cooperate, claiming that, *ceteris paribus,* only the other firm's locations of operation can lead to a higher or lower willingness to cooperate, depending on the fit with her firm's needs and requirements. Interviewee 9 stated that the geographic distance of another firm, if at all, potentially only influences the willingness to cooperate with another firm as it could ease the process in the beginning if firms are located near to one another. Interviewee 10 argued that, whereas geographic distance does not matter in theory, she has made the experience that oftentimes geographically close firms are better able to assess market dynamics and thus can be trusted more to act in a well-reasoned manner. Further, in line with Storper (1999), Interviewee 1 claimed that close geographic proximity between firms is sometimes accompanied by a mutual entrenchment and subsequent sense of responsibility in this area. This, in return, might then lead to more aligned objectives and subsequently more prosperous cooperation. Lastly, Interviewee 4 supported the factor's influence by referring to difficulties for non-local last-mile firms to receive parking permits from municipalities, which often want to protect local last-mile providers. Hence, he argues, geographic proximity can have a decisive influence on the willingness of locals to cooperate with other mobility providers.

The proposed influence of geographic distance on trust between two companies (Boschma, 2005) received partial support. Trust, then, could in turn influence the willingness of firms to cooperate with one another, as proposed in Chapter 2 *Interfirm Trust Level*. This would then constitute an indirect effect of geographic distance on the willingness to cooperate, as opposed to the direct influence mentioned above, by being mediated through the level of trust between firms. This indirect effect was perceived to exist, for example, by Interviewee 2, who elaborated on a firm that he trusted more when they were still located near their headquarter in the beginning of their cooperation. Moreover, Interviewee 8 stated that she generally experiences

more trust for firms that come from the same country as hers, while being initially cautious with firms from other countries. That, she argues, is mainly since those firms have the same law requirements and can thus be trusted to conduct business in a way that is compatible with her firm's legal and ethical standards. Moreover, despite not specifically having been mentioned by Interviewee 8, the differences in national and organizational cultures could also pose a reason for initially having more trust for same-country firms (Hofstede, 1994). Interviewee 10 was also certain of the causal relationship between the geographic distance of firms and their trust for one another. However, she considered this to be a result of unconscious human biases and not necessarily of intention. Interviewee 11 also claimed that this indirect effect exists, albeit mainly with regards to the actual closeness of firms' relations, namely how often they interact, and not the geographical distance of the companies' headquarters.

As those answers only concern the causal relationship between the geographic distance of firms and their trust for one another, the influence of trust on the willingness to cooperate has yet to be assessed. This will be the subject of the next section.

Interfirm Trust Level

Besides the pooling of resources and risks, the interfirm trust level was found to also be one of the most important factors influencing the willingness of firms in the German mobility industry to cooperate with one another. Interviewee 1 stated that trust is "one of the motors of cooperation" and is fundamental for long-term partnerships. The connection between the level of trust and the length of firms' cooperation has been proposed by several other interviewees as well. Interviewee 3 introduced a further interdependence between factors, stating that the *Nature of Knowledge To Be Shared* is positively influenced by the level of trust between firms. The higher the trust level, the more a firm is willing to cooperate and disclose sensitive information (Interviewee 3). The high importance of trust for cooperation willingness has also been stated by Interviewee 2, who addressed the previously mentioned challenge that especially private-sector firms fear a spillover of knowledge through cooperation, which he argued can prospectively only be solved by a sufficient level of trust between those companies directly or between those companies and a platform. Hence, trust can act as one of the main cooperation facilitators in fragmented industries like the German mobility industry. Interviewee 2, in fact, aspires to develop such advanced trust relationships between partners that contracts would

effectively become unnecessary. In Interviewee 11's opinion, establishing trust does not require any extraordinary measures but only frequent interaction.

"Trust is the foundation which makes a lot possible." (Interviewee 6)

Interviewee 7 reported a recent incident where his firm experienced an unforeseen act of harmful statements from a previous partner towards their firm, leading to a lasting discomfort with that. This shows that trust, despite being fundamental, is also transient and has to be handled carefully, both before, during, and after a cooperation. A lack of trust can permanently damage the willingness of a firm to cooperate with another (Interviewees 5 & 7).

Hence, firms are rather willing to cooperate with one another if there is a certain level of trust between them (Interviewee 8). Respondents' statements were also in line with Hagen and Choe (1998) who proposed that firms are also capable of having trust for one another, as opposed to only human individuals having this capability. No respondent, in fact, mentioned any interpersonal relationships when elaborating on the role of trust for cooperation willingness, but only mentioned trust between firms.

Interviewee 10, besides confirming all other respondents' opinions about the high relevance of trust, noted that, from her experience, the level of trust between firms in the German mobility industry is low, posing both a potential further explanation for the industry's fragmentation and a potential lever to counteract the fragmentation in the future.

The potential relationship between trust and transaction costs, which was presented in Chapter 2.2 *Transaction Costs*, namely that trust could reduce the amount of transaction costs involved in a cooperation as it would ensure both partners' mutually beneficial behavior, was partially supported by respondents' statements. Interviewee 3, in that context, argued that the longer a cooperation exists, the higher the interfirm trust level and the lower the need for monitoring, which effectively reduces transaction costs. Interviewee 11, however, despite confirming the existence of that effect in her experience, stated that her firm tries to eliminate it and to ensure the same level of effort for overseeing any cooperation, regardless of the level of trust between firms. The interviewee argues that this is mainly driven by the organization's negative experiences from past cooperations, where the level of trust had led to reduced monitoring and regulating efforts of partners resulting in failed partnerships.

Nevertheless, despite having found confirmation for the influence of trust on transaction costs in addition to influencing the willingness to cooperate directly, the influence of transaction costs

on firms' willingness to cooperate with one another has yet to be determined. Findings for that will be presented next.

Transaction Costs

The majority of respondents mentioned transaction costs as being an influential factor on the willingness of firms in the German mobility industry to cooperate. Some, for example, Interviewee 1, stated that transaction costs cause the number of cooperations a firm can be involved to be limited. She claims that her firm would cooperate more if it could, with the accumulation of transaction costs posing the reason why it cannot. Technically, however, this argument does not support a relationship between transaction costs and the willingness to cooperate, but the ability to cooperate. Nevertheless, it is still one facet of transaction cost's influence on the cooperation activity of firms. On the same note, Interviewee 11 stated that transaction costs pose a means to prioritize cooperative activities, with those cooperations that have a comparatively worse costs-to-outcome ratio being deprioritized.

Other respondents, for example, Interviewees 3 and 5, argue that transaction costs do influence their willingness to cooperate with other firms, albeit in a relative and not an absolute manner. Therefore, they argue, that as long as the gain from cooperation exceeds the costs associated with them, transaction costs do not influence the willingness to cooperate. If this ratio is negative, however, transaction costs influence their willingness to cooperate. Nonetheless, Interviewee 7 stated that the relative assessment of a cooperation's transaction costs also has limits, with cooperations that exceed the firm's available means having to be neglected despite their relative profit potential. That was considered to be of particular importance for public transport organizations, as those are usually financed by public institutions and are inherently unprofitable (Interviewee 8). Here, immense financial efforts for cooperations will need to be especially well-reasoned and well-communicated to avoid public disapproval or even outrage.

Interviewee 5 noted that the majority of a cooperation's transaction costs often originate from maintaining and monitoring it, circling back to the previously mentioned influence of trust, and showing the willingness to cooperate to also be dependent on the firm's perception of how intensively a cooperation might have to be monitored in the future. In general, however, respondents rather neglected transaction costs that arise after a cooperation has begun, with most initially talking about the influence of transaction costs in the form of efforts to set up a

cooperation. This shows a gap between the importance of transaction costs as it is proposed by literature and the perception of the actual importance from practitioners.

Despite not having been mentioned in direct connection with the assessment of transaction cost's influence on the willingness to cooperate, the popularity of the factor *Pooling Resources and Risks* hints at what transaction cost literature has proposed with regards to how a firm chooses to (dis-)integrate activities. More precisely, answers given on that factor revealed the influence of interfirm projects' transaction costs, and financial efforts in general, suggesting that cooperations pose a suitable solution for organizing the integration of other products and services in a way that is 'neither market nor hierarchy' (Powell, 1990). As hierarchy was claimed by many respondents to not be feasible with the multitude of offerings to be integrated, and the market arguably does not pose a suitable means for developing a coherent and aligned mobility concept, cooperations seem to be a plausible choice in fragmented industries. Consequently, transaction costs seem to pose an underlying reason for the strength of the factor Pooling Resources and Risks on the willingness to cooperate with one another in the German mobility industry.

Interviewee 7, moreover, also provided support for the literature's claim that transaction costs, and subsequently the willingness to cooperate as a result of that, have been influenced by the digitalization, as also proposed by Clemons and Row (1992). Referring to the importance and attractiveness of cooperation, he stated that digitalization provides opportunities that were inconceivable ten years ago. This again supports the claim that digitalization influences transaction costs and those transaction costs then influence the willingness of firms to cooperate with one another.

4.2.3 Industry-Level Factors

Building a Coalition Around a Shared Standard

"This is a major goal that we have also been pursuing for years, but which is still very difficult at the moment." (Interviewee 8)

The above statement represents most respondents' statements on the influence of this factor on the willingness to cooperate with one another. Most argue that it is important, but that the limited degree of fruitfulness hampers the importance partially. Reasons for the lack of tangible

outcome of this influential factor are both the high level of fragmentation, making it difficult to come to common terms with all parties (Interviewee 9), and the market power of some industry participants, which Interviewee 8 described to negatively influence the cooperation willingness of those firms with regards to building a shared standard. Specifically, she referred to the resistance of some major carsharing providers. Those problems with building coalitions for industry standards lead firms to act on their own, thereby further spurring fragmentation (Interviewee 9). Hence, fragmentation is both an antecedent and a consequence of this factor.

The overall influence of this factor based on this study's findings, however, is undisputed. Shared standards are aimed to be built through cooperations for areas like real-time data and e-ticketing (Interviewees 2, 3, & 11), mobility provider integration through a standardized application programming interface (Interviewee 11), but also for less intuitive areas like personnel cost standards (Interviewee 10). Real-time data has proven to be one of the first areas which led to cooperation to be achieved, with various firms already sharing their data with others (Interviewees 6 &10). Sharing real-time information on one's mobility vehicles, however, will also become a legal obligation with the novel 'Personenbeförderungsgesetz' (as presented in Chapter 4.1.7) from July 2022 onwards (Interviewee 8; Germany Federal Ministry of Justice, 2022). Therefore, recent cooperations on that might not be entirely based on willingness but also an obligation.

The fragmented nature of the German mobility industry makes coalitions around shared standards particularly important (Interviewee 2). Cooperation around shared standards also leads to long-established firms having to become active in order not to lose relevance and market share because of not participating. Therefore, coalitions around shared standards arguably have the potential to bring a fragmented industry together as involvement in and understanding of new emerging standards could pose a vital aspect for future competitiveness.

Legal Environment

The legal environment has been found to be influential on some firms' willingness to cooperate with others, albeit in unexpectedly many different ways. Before presenting those, however, it is important to note that some interviewees also stated the political environment to decisively influence the legal environment, for example by driving change by passing new laws and regulations (Interviewees 6 & 7). Hence, even though the legal environment was the main

subject of interest, the indirect influence of the political environment must not be neglected (Interviewee 9).

Interviewee 1 referred to the influence of the legal environment existing in the form of the level of protection it can provide in cooperations. Interviewee 2 also claimed that the legal environment has an influence, albeit in the level of ease that it provides for entering into and maintaining cooperations. He argues that as of now, the legal environment influences their willingness to cooperate positively as it does not hinder them from cooperation whatsoever. Interviewee 5 provides yet another interpretation of how this factor has an influence, stating that it can pose a regulatory basis that could facilitate structured cooperation and avoid chaotic competition, ensuring that industry participants are not forced to operate unprofitably. All mentioned interpretations can be classified as referring to both the facilitative environment and the regulatory environment (Edelman & Suchman, 1997) as presented in Chapter 2.1. Furthermore, the legal environment was considered to be influential with regard to the speed of processes in the context of establishing or maintaining cooperations (Interviewees 5 & 6).

Yet another perspective was provided by Interviewee 8, who argued that firms differ in the extent of their individually set legal requirements for cooperations. This interpretation rather refers to the legal environment between cooperating firms, with environment being the legal requirements that firms aspire to have fulfilled and settled. Whereas this interpretation cannot be classified according to the definition of the legal environment from Edelman and Suchman (1997), it can be argued to refer to specific contractual relations and expectations between firms. In that context, Interviewee 8 claims that some firms aspire a particularly extensive number of contractual agreements to be prepared and fulfilled in order for a cooperation to be established. This level of legal barriers for cooperation, stemming not from official legal obligations but firm-specific requirements, she argues, influences the willingness to cooperate with other firms.

Interviewee 9 also considered the legal environment influential on firms' willingness to cooperate. He proposed privacy law to be of specific importance in that context, as that might pose a challenge for firms to cooperate. Furthermore, Interviewee 10 provided yet another perspective on why the legal environment influences the willingness of firms to cooperate, stating that industry participants wanting to cooperate with public transport organizations, where cooperations are mostly the result of tenders, will need to comply with regulations in order to be eligible for tender participation. Hence, those requirements can affect the willingness to cooperate with public transport organizations.

Lastly, Interviewees 8 and 11 stated that liability issues could also influence the willingness of firms to cooperate with one another. Interviewee 8 argued that whether a cooperation involves having the liability issue oneself or having the possibility to shift it to another participant, for example, a platform, is an important antecedent of a firm's willingness to commit to a cooperation.

Interestingly, almost all respondents provided different perspectives on the influence of the legal environment on firms' willingness to cooperate with one another. Still, they were united in their support for the general influence of the factor.

Environmental Requirements

Environmental requirements were found to have a moderate influence on the willingness of firms in the German mobility industry to cooperate with one another, despite or potentially even because of Interviewee 9's claim that sustainability is considered the frame under which all business and possibly cooperations are conducted. Interviewee 1 stated that her firm is not willing to cooperate with certain last-mile mobility firms as those do not meet the sustainability standards of her firm, which itself is very focused on offering sustainable mobility solutions. Hence, the perceived need for more sustainable offerings directly influences the willingness to cooperate with other firms, depending on their sustainability efforts.

Many public transport operations, moreover, consider public transport naturally a rather environmentally-friendly form of mobility. As a result, Interviewee 5 argues that cooperation with those is attractive for many private-sector companies. One can argue, however, whether that is mainly sustainability- or image-related (Interviewee 10). Interviewee 5 claimed that cooperation is an important means to become carbon-neutral until 2030, a goal to which his private-sector firm has committed itself by being part of *The Climate Pledge*.

Interviewee 3 claimed that climate change and its implications for society lead his firm to cooperate with other mobility providers to offer alternatives for when his organization (public transport) cannot offer an adequate form of mobility, as this would at least ensure that the individual does not use her own car. Hence, the willingness to cooperate is directly influenced by perceived environmental requirements.

In sum, however, the researchers expected a higher influence of this factor, given the enormous challenges related to climate change and the vast opportunities that the mobility industry provides to act against it.

Competition

The majority of respondents stated that cooperation willingness does not hinge on the industry's competitive situation, with most other factors being much more influential. Interviewee 2, however, argued that if the "private car" is considered an industry participant and therefore a competitor, the industry would be rather competitive and the willingness to cooperate to counter the intense competition from the private car would be higher.

Interviewee 5, whose firm is aiming to develop a dominant platform in the industry, claimed that competition between aspiring platform providers in the same industry leads to a high competition for cooperation. That is based on the idea of a platform ecosystem, which revolves around integrating as many different supply- and demand-side users as possible (Eisenmann et al., 2006). To accumulate supply-side users, namely mobility firms, cooperation with those is needed and the willingness to cooperate is correspondingly high. The more aspiring platforms there are, and the higher the resulting competitive intensity (Barnett, 1997), the higher will be the willingness of those platform providers to cooperate with all sorts of mobility providers.

Interviewee 8 argued that the influence of competition on the willingness to cooperate is currently especially strong between last-mile mobility providers. Here, a multitude of providers exists, and the competitive intensity is high. This, in turn, then leads to a higher willingness to cooperate with other types of mobility providers to improve one's competitive position in the market (Interviewee 8). If the competition was lower, the providers might not equally dependent on improving their market position through cooperation, implying an overall lower willingness to cooperate. Therefore, even though only a few respondents mentioned that connection, it still appears to be existent.

4.3 Additional Factors

Overall, every factor previously identified in theory to be influencing the willingness of firms to cooperate received at least some support from this study's respondents working in the

German mobility industry as elaborated in Chapter 4.2, with three factors, namely *Strategic Fit*, *Pooling Resources and Risks*, and *Interfirm Trust Level*, standing out in terms of support. Besides these *a priori* factors identified by the researchers in the literature, interviewees brought up further influential factors. Those will be presented in this chapter.

Shared Mission

"We all work on eliminating individual car ownership in cities" (Interviewee 5)

A factor that stood out and that was not included in the preliminary framework is having a *shared mission,* spanning all cooperative activity in the German mobility industry. The overwhelming influence of that factor on firms' willingness to cooperate in this industry is shown in the above-presented statement from Interviewee 5. Interviewee 1 also argued that having a long-term impact by getting the people away from using a private car is the core of the firm's mission. To achieve that, multiple interviewees claimed cooperation to be indispensable. Further, Interviewee 1 stated that other forms of mobility shall be combined with his firm's offerings and that firms should and do follow a holistic approach towards mobility rather than solely focusing on one's own means of transport. That was further supported by Interviewee 3, who argued that the overarching objective is to make not using a private car attractive. The more the firms cooperate and consolidate their services, the more that attractiveness is increased (Interviewee 2). That shared mission is described by many as the *Verkehrswende* (Interviewee 5), which describes a fundamental shift in peoples' mobility behavior. Interviewees 7 and 11 also stated that, since no firm can offer all mobility solutions alone, cooperation is beyond doubt the only means to always offer people alternatives to a private car, and that this includes the entire industry. Interviewee 9 summed this factor up by claiming that "after all, it is a shared fight against the private car".

Business and Profitability Improvement

The second additional factor discovered from the empirical research is *Business and Profitability Improvement*. It is situated on the firm-level and was stated to be important for decision-making related to cooperations. The importance of this factor is underlined by Interviewees 4, 5, and 10, stating that mobility firms, and especially public transport

organizations, are largely unprofitable. Thus, given a company's natural constraints in striking cooperations as elaborated in Chapter 2.2 *Transaction Costs*, deciding for the most promising partners to achieve business and profit improvement arguably entails determining the most promising business case. Interviewee 3 identified that especially privately owned mobility firms are profit- and value-maximization-driven, in contrast to state-owned public mobility providers whose aim is to provide a mobility infrastructure for the public rather than maximizing profits.

"The big [private corporations] are only interested in economic factors […]; they solely want good revenue […]." (Interviewee 6)

This was also supported by Interviewee 5, proposing that the business case and business potential are the most important factors to evaluate a cooperation for his private-sector organization. As a platform provider, to evaluate a business case with an aspiring partner, the firm considers, amongst others, geographic reach, and the service density in the respective market. These factors were also named by Interviewee 9 to be of importance when evaluating the benefit-cost relation for the integration of a new partner. Moreover, Interviewee 5 argued the main objective of cooperation to be the creation of win-win situations for both partners whilst simultaneously creating value for customers. Win-win situations for cooperating partners may be achieved by tapping into new customer groups that were previously not reached, whilst customers may benefit from a more holistic offer and diverse products (Interviewee 7).

However, other than promoting cooperation in hope of an interesting business case, business and profitability issues may also hamper the willingness of firms to cooperate. For example, Interviewee 8 claimed that, caused by a fear of losing market share and relevancy, public transport organizations are often reluctant to open up to new mobility firms. New market players are rather considered a threat than as a potential cooperation partner (Interviewee 8).

Cultural Fit

Following the insights from this qualitative research, the *Cultural Fit*, situated in the cooperation-level, is another factor deemed relevant by various interviewees to influence the willingness of firms to cooperate.

"[S]maller, independent carsharing firms often have a similar mindset and approach regarding sustainability. We prefer working with those and it is easier [to cooperate] because we share a large part of our DNA […]" (Interviewee 1)

Interviewee 1 proclaimed a large importance of a cultural fit when evaluating cooperation partners. She elucidated how certain mobility providers do not qualify for her organization as cooperation partners due to poor working conditions of employees, diverging business approaches, or the lack of a focus on sustainability.

The importance of creating a cultural fit is further supported by Interviewee 3, who stated that cooperating partners must fit her organization's corporate philosophy and promote public transport in general, providing an added value to customers along the mobility chain. Overall, she summarized that when new mobility forms are established, her organization seeks partners that work in the same direction and create a lasting business connection with partners, thereby fitting to her organization's culture.

"The biggest challenge are cultural differences." (Interviewee 4)

Interviewee 4 found cultural closeness to be a crucial determinant for successful cooperation and provided an example where a large cultural difference resulted in detrimental effects for a business cooperation of his organization.

Overall, this factor is closely connected to the previously mentioned human factors, as it may not only refer to corporate culture but also national culture and differences amongst individuals (Interviewee 4).

Brand Fit

Several individuals hinted towards another factor of importance in driving the willingness of firms to cooperate in the fragmented mobility industry. This refers to what the researchers termed *Brand Fit*, which is situated on the cooperation-level.

"Some organizations have really poor press; with those, you obviously do not want to be associated." (Interviewee 8)

Interviewees 1 and 8 both mentioned a careful selection of partners for cooperation, ensuring that their company, through their brand or logo, is not associated with organizations that do not

comply with the targeted brand image. However, the willingness to cooperate may also be positively influenced by a superior, positive brand image and reputation of a firm. Interviewee 9 summarizes that there are some organizations that are interesting for cooperation simply for marketing purposes. Thereby, he argues, the firm would make their own products at hand more attractive. In line with Interviewee 9, Interviewee 4 points to the prestige that may come with cooperating with well-recognized firms with a strong brand. He experienced an increased interest and willingness of firms to cooperate when there is a lot of prestige involved.

Whilst some organizations may use this mechanism for genuine purposes, Interviewee 8 identified that some firms aim to engage in cooperations with well-established players for greenwashing purposes. This underlines the importance of both firms to assess the creation of a brand fit between cooperating firms.

Furthermore, under consideration of consolidation mechanisms and some players' aspiration to create a superior multimodality platform, Interviewee 9 points to the widespread fear of organizations to lose their brand identity when offering their products or services through a third-party platform. This supports the importance of assessing the brand fit.

Creation of an Integrated Customer Experience

A further influential factor on firms' willingness to cooperate with one another that became apparent throughout the data collection is the creation of a coherent, integrated customer experience. This customer-focused factor can be assigned to the industry-level. The German mobility, as an industry that was purposefully chosen with regard to its fragmentation, suffers from disintegrated offerings as a result of the industry fragmentation. However, there has been a gradual development towards cooperation through, for example, platforms that combine and connect different services with the goal of providing a more convenient and clear customer experience (Interviewees 3 & 5). This prevents customers from having to "sign up for multiple apps and deposit payment methods on each and every one of them", allowing them to have a seamless user experience (Interviewee 3). This digital and structural integration of mobility options through interfirm cooperation then results in a "chain of mobility" (Interviewee 7). Hence, the goal of cooperation on the integrated customer experience is to expand the final offering without having to develop new offerings oneself but only connecting existing services (Interviewee 9).

Retaining or Developing a Powerful Position

Wanting to retain or develop a powerful market position has also been identified as an influential factor in firms' willingness to cooperate with one another. More precisely, this industry-level factor refers to an increased willingness to cooperate with other firms as that ensures that the respective firm does not become isolated and, in consequence, loses its power over time. Hence, Interviewee 2 argued that firms that want to retain their market position must be open to cooperation. He claims this to be of particular importance for state-owned firms whose objective is not profit but sufficient mobility infrastructure, since a loss of power from those might result in negative consequences for customers. Therefore, public transport operators might be more inclined to cooperate to retain their powerful position for the common good and to remain able to direct the market where needed (Interviewee 9).

Moreover, Interviewee 8 argued that retaining a powerful position can also influence the willingness to cooperate negatively insofar as that it potentially lowers the will of firms to participate in a competitor's platform offering due to the fear of "giving away the customer to the competitor". This fear of losing control over one's customers through cooperation, in addition to potentially losing the possibility to gain new ones, was also stated by Interviewee 9 to have an influence on cooperation willingness.

4.4 Modified Framework

After having analyzed all findings, a reassessed version of the preliminary framework has been developed (see Figure 2). This final framework, incorporating the insights from this study's primary data collection, is now tailored to fragmented industries. Even though it might be biased towards the German mobility industry, and thus might lack external validity with regard to other industries, it provides a well-founded overview of those factors that are especially relevant in fragmented industries.

The transparency of the blue arrows indicates the strength of the categories' influences on the willingness of firms to cooperate with one another, based on this study's findings.

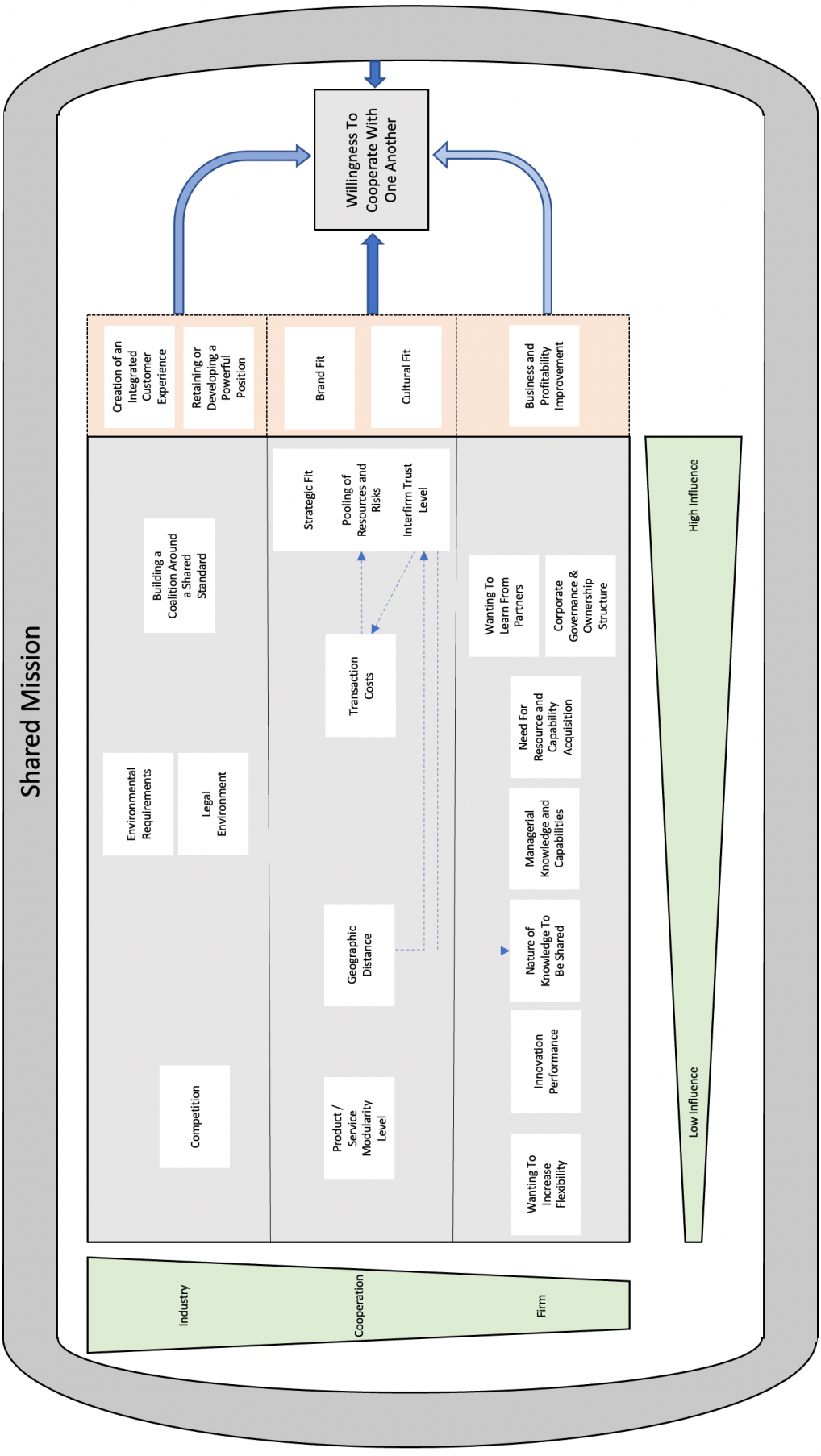

Figure 2: Modified Framework for Fragmented Industries

5 Discussion

The findings provided various interesting insights into the composition of factors influencing firms' willingness to cooperate in fragmented industries. In general, all previously identified factors were claimed at least by one interviewee to exist. That, however, might also be partly due to the fact those have been part of the interview guide and have been asked for specifically. Notwithstanding, the degree of influence varies immensely, with *Level of Modularity of Products and Services* and *Wanting to Increase Flexibility* having received only very limited support, suggesting that differences between more fragmented and more consolidated industries rather exist in the extent of the factors' influence, not in the general applicability of them. Since a qualitative case-study approach was chosen, factors cannot be entirely abandoned. Further quantitative research would be required.

Despite the apparent overlap between the factors that were identified in Chapter 2 and the factors identified through primary research, it was surprising that how their relevance was argued for differed greatly. A larger overlap between those two sources of data was expected with regard to how the influence of factors and their causal origin is explained. Only very few lines of reasoning from the literature were also used by respondents when elaborating on why a factor does or does not have an influence. This might hint at a certain intuition from practitioners that might be based on consulting the theory at some point but superseding it today. Regaining a greater consciousness of why certain factors are influential, and in what way, might lead to a more intentional use of cooperation and a lower degree of fragmentation.

With regards to the influence of the three factor-levels, findings suggest that those factors that concern the cooperation-level are the most influential. This appears to be logical since both parties must see value in a cooperation, and the extent of that value is highly dependent on the potential partner. Hence, all partners will need to see value in pooling resources and risks, will need to consider the strategy of the respective other to fit one's own, and will have to have a certain degree of trust. The potential partner's perspective on and evaluation of those prerequisites for the willingness to cooperate is mostly external and hard to influence for a firm and, thus, is particularly crucial. Whereas this is arguably important in any industry, the identified strong importance in fragmented industries, which by definition are often characterized by few overlaps and alignment between firms, is comprehensible. That is, a certain level of common ground or similar perception is needed for firms to cooperate, which in fragmented industries might be harder to find**.** Besides the importance of cooperation-level

factors as a whole, the identified high relevance of pooling resources and risks might be based on the extent of the potential to be reaped from it in fragmented industries, as opposed to more consolidated industries where a lot of synergies have already been realized.

Besides the identified differences between the relevancy of factors that influence the willingness of firms to cooperate, newly identified factors from the interviews pose an interesting addition to the preliminary framework. Even though their neglection in Chapter 2 could also be based on an incomplete preliminary framework, they might have also only come up in the interviews with people working for firms in a rather fragmented industry, and not in the general cooperation literature, because they are especially relevant in the state of industry fragmentation. The identified, outstandingly important factor *Shared Mission* poses a promising facilitator of cooperation in fragmented industries as it presents a common denominator; in the case of the German mobility industry in the form of a mutual overarching goal to eliminate privately-owned cars. The existence of a shared mission might also present an indicator that fragmented industries are gradually evolving towards becoming more consolidated. Hence, a shared mission not only has an influence on the firms' willingness to cooperate with one another but also on the future industry development as a whole as a result of that. The practical implications of that will be presented in Chapter 6.2. It is important to clearly distinguish this factor from the also very influential factor *Strategic Fit*, as making the privately-owned car obsolete is not a strategic objective but an overarching mission for which the strategy poses the approach to achieve that. Nonetheless, a certain degree of strategic fit should arguably follow from having a shared mission. Undoubtedly, not every fragmented industry will have a shared mission, but what the presented findings from the German mobility industry suggest is that having one strongly influences the willingness to cooperate.

The *Creation of an Integrated Customer Experience* was found to be a further factor influencing the cooperation willingness of firms in fragmented industries and might to a large extent be attributable to the still relatively recent phenomenon of digitalization and the rapid technological advancements, at least compared to many literature pieces on interfirm cooperation that originate from 1990 or earlier. Since fragmented industries often lead to fragmented service offerings, as shown in the German mobility industry, integrating and consolidating firms and their services can prove valuable for customers and, consequently, also for firms. This latent potential behind an integration of fragmented offerings then comprehensibly shows why the creation of an integrated customer experience influences the

willingness of firms to cooperate with one another. Digitalization might have also mitigated the transaction costs required to do that, further increasing the potential behind an integration.

Cultural Fit is arguably important in any cooperation, may it be between firms in rather fragmented industries or any other type of industry. Nevertheless, that does not mitigate the importance of this factor in more fragmented industries, which is arguably again emphasized compared to more consolidated ones. That is, the more fragmented an industry is, the lower the willingness to cooperate must have previously been, and the more effort is needed to facilitate cooperation. A fit of organizational cultures could act as an enabler of cooperation between firms, especially when they are usually rather reluctant to it, as it could ensure that both sides do not need to fear any unwanted confrontations throughout their cooperation. As such, the existence of a cultural fit, being the frame in which all cooperative activities are conducted, could pose a fundamental role in the general willingness of firms to cooperate. Besides, the more intense a cooperation would be, the more influence that factor might have on the willingness to get involved in it. Strategic alliances, for example, might require less cultural fit between the firms than joint ventures. The role of organizational culture has also been discussed widely in previous literature, most famously by Hofstede (1994). A more nuanced study on the role of the cultural fit for cooperation between organizations in fragmented industries, however, could be the subject of future research.

Brand Fit, posing another factor that was identified through the interviews to have an influence on the willingness of firms in fragmented industries to cooperate, is also likely to be important for any industry, including fragmented ones. Hence, just because this factor was found in the context of interviewing people from a fragmented industry, one shall not infer that the identified factor is exclusive to this type of industry. Notwithstanding, responses suggest that it is undoubtedly important in fragmented industries as well. The relevance of this factor has arguably been growing ever since digital media has evolved to allow people to share their opinion and knowledge with the public within seconds. As a result, potential discrepancies between the brand image of a firm and its aspired cooperation partner can quickly become institutionalized issues (Zadek, 2004) through people's use of the internet. In fact, the fit between two brands is no longer subject to only the firms' assessment of it but also to that of the public, subsequently magnifying the factor's importance for the willingness to cooperate with another firm. If the public considers a firm to be immoral, for example, that might already be sufficient for another firm to avoid cooperation with it, no matter how many internal advantages might have been associated with a cooperation. Referring to the previously

mentioned particularly high barriers to cooperate in rather fragmented industries, in contrast to more consolidated ones, the same level of brand (mis-)fit could influence firms to different degrees, depending on the industry condition. That is, a firm in a fragmented industry might require a higher brand fit to be equally willing to cooperate as a firm in a consolidated industry situation, simply because industry fragmentation implies that firms tend to be less open for cooperation and, subsequently, the barrier to cooperate is higher and requires more to be overcome. Whereas this logic is applicable to most factors, as findings suggest that the biggest difference between more consolidated and more fragmented industries is the strength of the factors' influence, brand fit, being a factor that was made especially crucial through social media and the internet in general, can be argued to be a particularly suitable example for it.

Besides the newly identified factors, the interviews further revealed multiple interrelations between the factors, most of them involving the interfirm trust level. This appears to be logical as firms in fragmented industries, with only a few interdependencies between them, might see trust as particularly influential, not only in general but also indirectly for the evaluation of other factors. Therefore, one must not simplify the composition of influential factors by assessing them separately but have a holistic view of how they interact and influence one another. What makes the accurate assessment of the factors' influence more difficult is the fact that many factors overlap in what they comprise. Increasing one's flexibility, for example, can be achieved through pooling resources and risks with other firms. This poses the question whether there is a dominant factor and if so, which factor is dominant, or whether they simply coexist interrelatedly. The overlap between factors has also been apparent in the respondents' statements. Whereas this does not pose a critical problem to the examination and presentation of influential factors, as all those presented in Figure 2 are well-argued for on an individual basis, it still needs to be acknowledged and taken into consideration when making use of the framework.

Overall, even though the fit between what the literature has proposed and insights from the study is large, the literature's line of reasoning for the factors' influence differed significantly. That, however, might be because respondents lacked the theoretical insights and concepts and thus argued from a practical point of view, altering the way something is perceived to happen without changing the core argument.

6 Conclusion

Using the German mobility industry as the study subject, this study provided various insights on which factors influence the willingness of firms to cooperate in fragmented industries. Those factors, in general, are to a large extent similar to those in non-fragmented industries. Fragmented industries, however, seem to (de-)emphasize certain factors. Pooling resources and risks was found to have one of the strongest influences on this willingness, which is not surprising since fragmentation implies that this has not been sufficiently done before. Moreover, the level of trust between firms seems to strongly influence the willingness to cooperate with one another in fragmented industries. This, again, appears to be logical since fragmentation is likely to be accompanied by less trustful relationships among industry participants in comparison to more consolidated industries, making trust an even more meaningful factor influencing the willingness to cooperate.

This study also found that, besides the previously identified factors, other factors appear to be influential on interfirm cooperation willingness in fragmented industries. For example, having an overarching shared mission has been found to be one of the main facilitators of cooperation in fragmented industries. Moreover, brand fit, cultural fit, creation of a coherent customer experience, retaining or developing a powerful position, and business improvements have been found to be of importance in fragmented industries.

To conclude, whereas there are some factors that stand out in their influence on interfirm cooperation in fragmented industries, the total amount of influential factors is rather extensive and shows how multifaceted the decision for or against cooperations in fragmented industries is.

6.1 Practical Implications

Firms in fragmented industries now have a framework with which they can (I) comprehensively and as objectively as possible evaluate their individual willingness to cooperate with another firm by assessing each factor or (II) use this framework for strategic management, more precisely for exploiting the knowledge about influential factors through tailoring their cooperative actions towards the factors' influence. For example, firms looking for partners could approach them with ideas that address the most influential factors on other firms'

willingness to cooperate. Firm A could, therefore, convince Firm B to cooperate with it by showcasing how a pooling of resources can add value to their business case. Moreover, knowing that trust is vital in Firm B's willingness to cooperate with Firm A, Firm A could specifically address that and undertake trust-building measures before proposing cooperation to Firm B.

Those general ideas on how the generated knowledge from this study can have a practical value and what they imply is best for firms to do could then, at least in the mid- to long-term, lead to more cooperative behavior in fragmented industries and benefit both the firms and the customers. Moreover, the results show that the decision for or against cooperation is multifaceted and therefore always very situational and subjective.

The framework also provides implications for other parties besides the fragmented industry's firms. For example, the influence of the legal environment implies that governments can indirectly improve or worsen the willingness of firms to cooperate in fragmented industries. Potentially, fragmentation could partly be caused by a cooperation-impeding legal environment. Furthermore, in some instances it might be possible for governments, the society, or other stakeholders to help establish a shared mission of a fragmented industry, posing a substantial influence on the firms' willingness to cooperate and arguably a powerful means to act against fragmentation in industries.

6.2 Limitations and Further Research

This study has been subject to various limitations. Those limitations provide opportunities for further research.

For this study, the authors have chosen to only investigate cooperation in the context of horizontal interfirm fragmentation, namely between firms from the same stage of the value chain. It might be that cooperation in fragmented industries is also influenced by cooperative behavior with- and from upstream industry participants. In that case, different factors might have been found to influence the willingness of firms in fragmented industries to cooperate. This extension of the industry presents an area for further research, potentially (dis-)confirming or extending the findings.

Further, even though the contribution of interviewees was indispensable and insightful, the individuals might have lacked knowledge to provide the researchers with a comprehensive and

complete representation of factors that influence the firm to cooperate. Thus, interviewing multiple employees from each firm could have helped verify the respondents' opinions and to broaden the scope of answers. In addition, the composition of interviewees was shaped by the firms' responsiveness. Whereas it was tried to interview at least one person from each company type in the industry, the number of firms from each respective firm category might present a bias in the findings. Hence, for example, if more carsharing providers had been willing to be interviewed, the findings might have differed. As the limited scope of this thesis, especially the time frame, did not allow the external researchers (Saunders et al., 2019) to approach firms repeatedly and forced them to accept an interview decline after one to two attempts, the final number of respondents, in general, could have negatively impacted the generalizability and validity of the findings. Further research with a larger scope and time frame could provide a broader picture of firms in the mobility industry and their cooperative behavior and inclinations.

With regards to the general nature of the research, the chosen qualitative approach did not allow for a hierarchical categorization of the factors. Thus, the respective strength could not be assessed, with the researchers only being able to judge the general existence of the factors and derive insights on their importance based on the frequency of mentions. This frequency, however, does not necessarily imply anything about a factor's importance. Hence, a quantitative study based on numeric observations could help develop a more precise framework, with the factors posing the basis for it. This could help firms allocate resources to facilitate cooperation based on empirical insights.

Furthermore, the chosen single-case study approach could have yielded different and less reliable results than a multiple-case study approach would have. Focusing on the mobility industry, as an example of a fragmented industry, might have led to low external validity, thus the results being specific to this particular industry. Hence, further research investigating influential factors on firms' willingness to cooperate in fragmented industries using other examples of fragmented industries would be beneficial for the value of the results.

Lastly, even though this study was conducted in the context of fragmented industries, results might also partially apply to cooperation in general. That is, even though the interviewees were purposefully chosen from firms within a fragmented industry, their statements are not necessarily exclusively argued for from the perspective of fragmentation but also from a general business perspective. Nonetheless, the fact that the study's data originates from a fragmented industry let's one justifiably attribute them to those industries in particular.

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8 Appendices

8.1 Appendix A – Interview Guide (Original German Version)

Fragenkatalog:

1) Vielleicht können Sie zunächst etwas über Ihre Rolle im Unternehmen erzählen?
2) Wie lange arbeiten Sie schon in dem Unternehmen?
3) Was sind die aktuellen Themen, die Sie im Zusammenhang mit dem Mobilitätssektor in Deutschland beschäftigen?
4) Welche Faktoren sind Ihrer Meinung nach besonders ausschlaggebend für die Entscheidung, ob Sie mit anderen Unternehmen zusammenarbeiten?
5) In welchem Bereich sehen Sie den größten Bedarf an Kooperationen im deutschen Mobilitätssektor?
6) Mit welchen Unternehmen kooperieren Sie bereits, haben Sie eine Kooperation geplant und mit welchen können Sie sich eine Kooperation vorstellen?
    a) Hier geht es weniger um konkrete Unternehmen als vielmehr um die Art der Unternehmen im Mobilitätssektor (ÖPNV, letzte Meile, Carsharing-Anbieter, etc.).
7) Inwieweit beeinflussen die folgenden Faktoren Ihre Bereitschaft zur Zusammenarbeit mit anderen Unternehmen?
    a) Bedarf an Ressourcen- und Kapazitätserwerb
    b) Erhöhung der Flexibilität
    c) Lernen von Partnern
    d) Bündelung von Ressourcen und Risiken
    e) Aufbau einer Koalition um einen gemeinsamen Standard
    f) Zwischenbetriebliches Vertrauensniveau
    g) Transaktionskosten
    h) Rechtliches Umfeld
    i) Grad der Modularität von Produkten und Dienstleistungen
    j) Corporate Governance und Eigentümerstruktur
    k) Strategic Fit
    l) Umweltanforderungen
    m) Geografische Entfernung

n) Innovationsleistung
o) Wettbewerbsintensität
p) Management-Wissen und -Fähigkeiten
q) Art des zu teilenden Wissens

8) Wie würden Sie die Faktoren in Bezug auf ihre Bedeutung einordnen? Gibt es Faktoren, die besonders hervorstechen?
9) Haben Sie zusätzlich zu all dem, was wir jetzt über Kooperationen zwischen Unternehmen diskutiert haben, noch weitere Gedanken dazu?

Zusätzliche Fragen zum Thema Vertrauen:

- Haben Sie das Gefühl, dass die geografische Nähe zu einem Unternehmen Ihr Vertrauen in dieses Unternehmen erhöht?
- Sind Sie der Meinung, dass das Vertrauen in ein anderes Unternehmen die Transaktionskosten einer Zusammenarbeit verringern könnte?

8.2 Appendix B – Interview Guide (Translated Version)

Questionnaire:

1) First of all, maybe you can tell something about your role in the company?
2) How long have you been working at the company?
3) What are currently issues that concern you in relation to the mobility sector in Germany?
4) What factors do you consider to be particularly influential in deciding whether to cooperate with other companies?
5) In which area do you see the greatest need for cooperation in the German mobility sector?
6) Which companies do you already cooperate with, have planned cooperation with, and with which can you imagine a cooperation?
    a. This is less about specific companies and more about the type of companies in the mobility sector (public transport, last mile, car sharing providers, etc.).
7) To what extent do the following factors influence your willingness to cooperate with other companies?

a) Need for Resource and Capability Acquisition
b) Increasing Flexibility
c) Learning from Partners
d) Pooling of resources and risks
e) Building a Coalition around a Shared Standard
f) Interfirm Trust Level
g) Transaction Costs
h) Legal Environment
i) Level of Modularity of Products and Services
j) Corporate Governance and Ownership Structure
k) Strategic Fit
l) Environmental Requirements
m) Geographical Distance
n) Innovation Performance
o) Competitive Intensity
p) Management Knowledge and Capabilities
q) Nature of Knowledge to be Shared

8) How would you sort the factors in terms of importance? Do any standout?
9) In addition to all that we have now discussed regarding cooperations between companies, do you have any other thoughts on this?

Extra questions related to trust:

- Do you feel that the geographical proximity of a company increases your trust in it?
- Do you feel that trust towards another company could reduce the transaction costs of a cooperation?